

Preventing never events:

What frontline nurses



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Never events are serious medical errors or adverse events that should never happen to a patient. Consequences include both patient harm and increased cost to the institution. Frontline nurses can help prevent never events by creating a culture of safety through best nursing practices. We show you how.

By Leslie McKeon, PhD, RN, NEA-BC
Assistant Dean for Student Affairs and Associate Professor • University of Tennessee
Health Science Center • Memphis, Tenn.

Brittany Cardell, MSN, CNL
Clinical Director • Methodist LeBonheur Children's Medical Center • Memphis, Tenn.

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need to know



Never events refer to a list of serious medical errors or adverse events (for example, wrong site surgery or hospital-acquired pressure ulcers) that should never happen to a patient. The Centers for Medicare and Medicaid Services (CMS) defines never events as “serious, preventable, and costly medical errors.” Frontline nurses provide a critical role in preventing never events through risk anticipation and adoption of evidence-based practice. This article describes the origin of never events, the consequences of hospital-acquired conditions (HACs), and how to prevent never events through best nursing practices.

A closer look at never events

The official list of never events was published in 2002 by the National Quality

Forum (NQF), a nonprofit organization of healthcare providers, businesses, and policy makers. The primary aim of the NQF is to improve healthcare by developing and implementing a national quality measurement and reporting system. The list of 28 serious reportable adverse patient events was created after the Institute of Medicine’s (IOM) landmark reports on patient safety, *To Err is Human* and *Crossing the Quality Chasm*, which provided new ways to view medical errors (see *The NQF’s list of never events*).

Before the IOM reports, medical errors were generally considered acceptable consequences of care and remained deeply hidden. In 1999, the IOM report *To Err is Human* estimated that nearly 98,000 patients die

each year as a result of medical mistakes that could have been prevented. A second IOM report, *Crossing the Quality Chasm*, described the failures of the healthcare system created by rapid advances in technology, increased patient complexity, and a tradition of working in separate silos without benefit of complete patient information. This report prompted a call for a better prepared work-

force, application of evidence to healthcare delivery, better use of information technology, and alignment of payment policies with quality improvement.

The IOM called for all healthcare insurers, including Medicare and private insurance companies, to build stronger incentives for quality by removing financial barriers to providing good care. For example, the

The NQF's list of never events

Surgical events

- Surgery performed on the wrong body part
- Surgery performed on the wrong patient
- Wrong surgical procedure performed on a patient
- Unintended retention of a foreign object in a patient after surgery or other procedure
- Intraoperative or immediately postoperative death in an American Society of Anesthesiologists Class I patient
- Artificial insemination with the wrong sperm or donor egg

Product or device events

- Patient death or serious disability associated with the use of contaminated drugs, devices, or biologics provided by the healthcare facility
- Patient death or serious disability associated with the use or function of a device in patient care, in which the device is used for functions other than as intended
- Patient death or serious disability associated with intravascular air embolism that occurs while being cared for in a healthcare facility

Patient protection events

- Infant discharged to the wrong person
- Patient death or serious disability associated with patient elopement (disappearance)
- Patient suicide or attempted suicide resulting in serious disability while being cared for in a healthcare facility

Care management events

- Patient death or serious disability associated with a medication error (such as errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation, or wrong route of administration)
- Patient death or serious disability associated with a hemolytic reaction due to the administration of ABO/HLA-incompatible blood or blood products
- Maternal death or serious disability associated with labor

or delivery in a low-risk pregnancy while being cared for in a healthcare facility

- Patient death or serious disability associated with hypoglycemia, the onset of which occurs while the patient is being cared for in a healthcare facility
- Death or serious disability (kernicterus) associated with failure to identify and treat hyperbilirubinemia in neonates
- Stages III or IV pressure ulcers acquired after admission to a healthcare facility
- Patient death or serious disability due to spinal manipulative therapy

Environmental events

- Patient death or serious disability associated with an electric shock or electrical cardioversion while being cared for in a healthcare facility
- Any incident in which a line designated for oxygen or other gas to be delivered to a patient contains the wrong gas or is contaminated by toxic substances
- Patient death or serious disability associated with a burn incurred from any source while being cared for in a healthcare facility
- Patient death or serious disability associated with a fall while being cared for in a healthcare facility
- Patient death or serious disability associated with the use of restraints or bedrails while being cared for in a healthcare facility

Criminal events

- Any instance of care ordered by or provided by someone impersonating a physician, nurse, pharmacist, or other licensed healthcare provider
- Abduction of a patient of any age
- Sexual assault of a patient within or on the grounds of a healthcare facility
- Death or significant injury of a patient or staff member resulting from a physical assault (such as battery) that occurs within or on the grounds of a healthcare facility

Source: National Quality Forum. Serious reportable events in healthcare—2006 update. http://www.qualityforum.org/Publications/2007/03/Serious_Reportable_Events_in_Healthcare%E2%80%932006_Update.aspx.

The CMS's nonreimbursable HACs

- Foreign object retained after surgery
- Air embolism
- Blood incompatibility
- Stages III and IV pressure ulcers
- Falls and traumas (fractures, dislocations, intracranial injuries, crushing injuries, burns, electric shock)
- Manifestations of poor glycemic control (diabetic ketoacidosis, nonketotic hyperosmolar coma, hypoglycemic coma, secondary diabetes with ketoacidosis, secondary diabetes with hyperosmolarity)
- Catheter-associated urinary tract infection
- Vascular catheter-associated infection
- Surgical site infection:
 - Mediastinitis following coronary artery bypass graft
 - Any surgical site infection following bariatric surgery (laparoscopic gastric bypass, gastroenterostomy, laparoscopic gastric restrictive surgery)
 - Any surgical site infection following spine, neck, shoulder, or elbow orthopedic procedures
- Deep vein thrombosis/pulmonary embolism following total hip/knee replacement

Source: Centers for Medicare and Medicaid Services. Hospital-acquired conditions. http://www.cms.gov/HospitalAcqCond/06_Hospital-Acquired_Conditions.asp#TopOfPage.

reimbursement system used to pay hospitals a higher rate for a patient who developed an HAC, such as a catheter-acquired urinary tract infection. This higher rate would cover the costs for antibiotics and extra inpatient days.

To encourage better care, the IOM urged insurers to reward hospitals that used evidence-based prevention strategies to avoid costly complications. The IOM then went even further, recommending favorable rate adjustments for quality hospitals that admit high-risk, complex patients who develop complications despite the hospital's best efforts.

In 2008, the CMS established a no-pay policy for eight patient conditions that are preventable by following evidence-based clinical guidelines. These conditions, consistent with the NQF-designated never events, are considered HACs and no longer reimbursable at a higher payment. Three more conditions were added to the list in 2009: blood clots after knee- and hip-replacement surgeries; surgical site infections for elective procedures, including bariatric operations; and problems from poorly controlled blood glucose levels (see *The CMS's nonreimbursable HACs*). Also in 2009, the CMS went a step further and

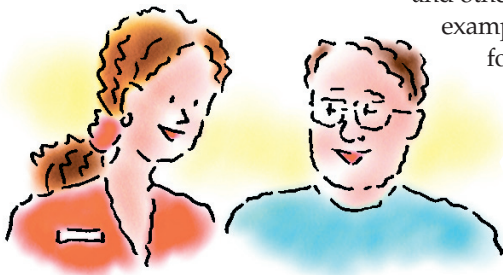
ceased to pay for inpatient medical care required as a result of wrong surgery, including a different procedure altogether, the correct procedure but on the wrong body part, or the correct procedure but on the wrong patient.

Consequences of HACs

HACs, in particular drug-resistant infections, pose a serious global healthcare threat. These conditions are commonly transmitted horizontally, for example, caregiver-to-patient, environment-to-patient, or patient-to-patient. They cause serious, difficult-to-treat infections that are often related to substantial morbidity, mortality, and excess cost to the patient, the insurer, and the institution. The CDC estimates that each year there are 1.7 million infections acquired in American healthcare settings, resulting in 99,000 patient deaths. The most prevalent infection is urinary tract (32%), followed by surgical site (22%), pneumonia (15%), and bloodstream (15%).

The CDC approximates that the cost of HACs is more than \$25,000 per patient. Not only do infections and other preventable events use up valuable healthcare dollars, they also cause hospitals to lose

Have you ever heard the term culture of safety?



revenue. Hospitals receive a predefined reimbursement for patient conditions. If a patient acquires a preventable complication, then the reimbursement for that patient's care is less than 100% of the predetermined event-free amount.

Preventing high-cost and high-volume HACs can save hospitals millions of dollars each year by eliminating loss of revenue and other preventable costs. For example, if a patient admitted for a respiratory condition falls on the day of discharge, the patient often requires 1 or 2 more days in the hospital for evaluation. Consequently, not only does the hospital assume all the costs associated with the fall, it loses the opportunity to fill the bed with another patient.

A recent study by the Nursing Executive Center analyzed two common and costly conditions for which nursing is largely responsible: pressure ulcers and falls. The authors report that for every 100 patient discharges with a pressure ulcer, the approximate loss of hospital revenue is \$105,556; however, the range of preventable cost is \$176,450 to \$2,646,550. For every 100 patient discharges with injurious falls, the estimated loss of hospital revenue is \$57,209, although the total preventable cost is approximately \$770,900. These analyses strongly suggest that the greatest financial opportunity for HACs is prevention.

The Joint Commission has added prevention of HACs as one of its National Patient Safety Goals. Hospitals have begun to publicly disclose previously guarded information about HAC rates and medical errors. Hospitals with a commitment to quality publish their safety results because of their firm belief in patients' right to know and because it holds them publicly accountable for delivering quality care. Consequently,

this increase in transparency allows patients to "shop" for the best quality in medical and surgical care.

The importance of prevention has also reached the grassroots level. Patient safety advocacy groups across the country are urging patients to protect themselves from harm. For example, to prevent HACs, patients are instructed to insist that caregivers wash their hands with soap or an alcohol-based solution before touching a patient, put on sterile gloves before touching any catheters, and check to see that dressings are secure and in place. *Consumer Reports Health* goes so far as to publish a five-item checklist protocol to reduce infection when inserting a central venous catheter. Patients are undoubtedly becoming more knowledgeable and selective in seeking quality care and treatment.

Efforts are currently underway by payers to structure ways for giving bonuses to providers who routinely practice quality care and lowering payments to those who don't. Subsequently, hospitals across the United States are focusing on ways to accelerate adoption of evidence-based practices and clinical guidelines to improve patient outcomes and avoid the serious, preventable, and costly medical errors known as never events. Nurses, more than ever, need to take the lead in preventing never events because they're most frequently the last line of defense between an error and a patient.

Preventing never events

Hospitals that successfully prevent never events have established effective cultures of safety. A culture of safety refers to the manner in which an organization handles or responds to safety issues and errors, as well as the attitudes and perceptions that exist around safety throughout the organization. Simplified, the safety culture is how the organization behaves when no one is watching. A high culture of safety is critical for preventing or reducing errors and

improving overall healthcare quality. High-reliability organizations (HROs) are those institutions known for establishing a high culture of safety.

The term HRO refers to organizations in high-risk, high-impact industries that consistently achieve quality outcomes despite facing many unexpected events where the potential for error and disaster is very high. Examples of HROs include the military, law enforcement, aviation, and nuclear power industries. In healthcare, high-risk areas in exemplar hospitals, such as the OR, ED, and ICU, function as HROs.

An important attribute of HROs is the capability to identify minor discrepancies in what's expected and take strong action to prevent serious errors from occurring. This practice is most prevalent in high-acuity patient-care settings, although it has been adopted in less acute settings through the use of rapid response teams (RRTs). Outcomes suggest that practicing HRO principles not only prevents patient harm, but can also reduce costs. For example, early intervention by an RRT often avoids costly patient transfers to the ICU. In pediatric settings, nurses use the Pediatric Early Warning Score (PEWS) to facilitate early recognition of patient deterioration. The PEWS includes vital signs, behaviors, and symptoms that predict potential codes. Nurses then use algorithms (decision trees) to determine the most appropriate course of action, which may include an RRT, to prevent serious patient injury and transfer to the ICU.

In HROs, high-reliability principles drive both organizational structure and employee behavior (see *Characteristics of HROs*). These principles include preoccupation with failure, reluctance to simplify interpretation, sensitivity to operations, commitment to resilience, and deference to expertise. Preventing never events requires adoption of high-reliability behaviors by both management and frontline staff. Let's take a closer look.

Characteristics of HROs

- Preoccupation with failure
- Reluctance to simplify interpretation
- Sensitivity to operations
- Commitment to resilience
- Deference to expertise

Source: Weick KE, Sutcliffe KM. *Managing the Unexpected: Resilient Performance in an Age of Uncertainty*. 2nd ed. San Francisco, CA: Jossey-Bass; 2007.

Preoccupation with failure

Successful HROs treat any near miss or minor error as a symptom that something is wrong with the system. They encourage reporting of all errors, including near misses. A near miss, also known as a close call, is an unintended event that doesn't reach a patient, thereby avoiding harm or injury, but has the potential to do so. Misinterpretation of a physician order by a pharmacist has a likelihood of causing harm to the patient; however, the nurse who calls the physician to clarify the order before administering the medication prevents the error from occurring. This is defined as a near miss.

Near misses occur at a greater frequency than errors, increasing opportunity for learning and determining what works versus what doesn't. Through evaluation of near-miss occurrences, processes can be altered to create a better system. Near misses, as well as adverse events, are routinely reported in HROs because they have a just culture—one in which staff can report mistakes without punishment or personal risk. In a just culture, individuals are held accountable for their actions; however, they aren't held responsible for faulty systems that cause mistakes even among the most experienced and dedicated staff.

Reluctance to simplify interpretation

Identifying the underlying system problems that lead to error is a critical function of HRO practice. Rather than attribute an error

Use root cause analysis to identify problems that contribute to never events.



to a simple cause, such as a clinician mistake, HROs use root cause analysis (RCA) to analyze serious adverse events. In RCA, both the actions leading up to the error and institutional problems contributing to poor quality are analyzed.

RCA begins with data collection and reconstruction of the event through record review and participant interviews. A

multidisciplinary team then analyzes the sequence of events leading to the error, with the goal of identifying how and why the error occurred. The ultimate goal of RCA is to prevent future harm by eliminating the system problems that cause adverse events. For

example, when a nurse administers an oral medication I.V.

in error, a common assumption is that the nurse lacks adequate

knowledge to perform his or her job effectively. However, analysis of previously reported errors or near misses will usually show that similar errors have occurred throughout the organization. Subsequently, rather than reeducating the nurse, the HRO takes immediate action, such as alerting all clinicians of the finding, while requesting that the pharmacy begin placing a brightly colored warning label on all I.V. doses. In this example, reluctance to simplify interpretation led the organization to a system failure that could be fixed permanently.

did you know?

Public health and infectious disease groups have issued a white paper providing a framework to eliminate healthcare-associated infections through evidence-based practices, alignment of financial incentives, research, and data collection. To view the report, visit http://www.apic.org/Content/NavigationMenu/GovernmentAdvocacy/RegulatoryIssues/CDC/AJIC_Elimin.pdf.

Sensitivity to operations

HROs frequently consider the potential unintended consequences of a change in practice before implementation. This can be done through a process called failure modes and effects analysis (FMEA). Failure modes are the possible problems identified during the development phase of a change that are likely to affect end users. Effects analysis refers to the process of studying the consequences of the identified problems. Steps in FMEA include identifying what could go wrong, the likelihood of it happening, potential risks to the patient and organization, strategies to eliminate or control these risks, and methods for determining whether the strategies worked.

After this type of analysis, HROs use rapid-cycle testing to test and refine ideas quickly on a small scale. Factors such as the organization's size, culture, and processes affect adoption of best practices. Change is likely to be accepted by staff if it's first piloted to see whether it works and an opportunity to make adjustments before widespread implementation is provided. For example, to prevent catheter-acquired urinary tract infections, it's critical to understand the culture of nursing practice in those areas with high utilization of indwelling urinary catheters. Placing an indwelling catheter in a patient decreases or alters the workload of the nurse in terms of toileting and urine output measurement. Therefore, before any changes are made to a routine practice in multiple areas, it's crucial to anticipate and plan for the potential unintended consequences to the nursing workload, as well as to the medical staff, patients, and their families. Conducting a small test of change or a pilot in one clinical area will assist in identifying and evaluating those unintended consequences before implementation to all target areas.

Commitment to resilience

HROs effectively handle successive unexpected events. Their systems have

multiple fail-safe measures and staff members receive regular training in how to successfully manage safety problems. Many electronic medical records (EMRs) now alert staff to possible errors and can catch mistakes before they happen. For example, EMRs alert providers when patient restraints exceed recommended guidelines and prevent reordering without precise clinical justification.

However, even with secondary safety systems, many nurses are unable to prevent errors due to inadequacies in staffing and skill mix (the ratio of RNs to LPNs or unlicensed assistive personnel). Current research suggests that up to 28% of nursing care is left undone. This is particularly troublesome because unmet nursing care needs are significantly associated with adverse patient events and HACs such as infections, falls, and medication errors. Research also supports fewer adverse patient events with a higher percentage of RN care. For example, for a unit staffed with 10 RNs, 5 LPNs, and 5 unlicensed assistive personnel (20 total staff), converting one unlicensed assistive personnel position to an RN position will result in 17% less adverse patient events. Nursing practice councils commit to resilience when they advocate for safe staffing with the right nursing skill mix.

Deference to expertise

Most decisions in HROs are made at the frontline. Decisions come from the top in normal situations. During urgent conditions, authority migrates to the member with the most expertise without regard for rank. In healthcare, many adverse events have occurred even though someone knew something was wrong and either didn't speak up for fear of punishment or spoke up and was ignored.

Intimidating and disruptive behaviors present a formidable barrier to speaking up with vital information that may prevent a never event. Intimidating and disruptive behaviors are often manifested by healthcare


professionals in positions of power. Such behaviors include unwillingness or refusal to return phone calls or pages, condescending language or tone of voice, and impatience with questions. The exercise of power in healthcare occurs frequently, diversely, and unequally between healthcare professionals and, over time, leads to the formation of unit norms. Consequently, this excessive use of power and authority negatively influences team communication, resulting in failure to detect and correct errors.

Preventing never events requires teamwork, effective communication, and a collaborative work environment.

Nurses and their leaders together need to directly address problematic communication behaviors that threaten patient safety and the performance of the healthcare team, which can contribute to the occurrence of never events.

First, do no harm

Patients shouldn't be harmed by preventable errors made by the people trying to help them. Instead, nurses and other healthcare providers should do everything possible to prevent HACs from happening. Preventing never events isn't only the right thing to do for patients, it's also the right thing to do to save precious healthcare resources. Preventing high-cost and high-volume HACs can save hospitals millions of dollars each year. Understanding never events and their consequences to patients and the organization is the first step in prevention. After never events are better understood, nurses can work diligently to prevent them by practicing high-reliability principles and helping to develop better systems and processes that protect patients from harm. ■



Teamwork
is key to
preventing
never events.



Learn more about it

Agency for Healthcare Research and Quality. Patient safety network. <http://psnet.ahrq.gov/>.

CDC. Estimates of healthcare-associated infections. <http://www.cdc.gov/NCIDOD/DHQP/HAI.HTML>.

Centers for Medicare and Medicaid Services. Hospital-acquired conditions. http://www.cms.gov/HospitalAcqCond/06_Hospital-Acquired_Conditions.asp#TopOfPage.

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