Patient Safety Reporting Program

2012 Hospital Annual Summary

Report. Learn. Improve Patient Safety.

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Executive Summary

In 2012, Oregon hospitals submitted more adverse event reports to the Oregon Patient Safety Commission than ever before. The increase in reports is not an indication that more adverse events are occurring, but rather, that Oregon hospitals are improving their ability to identify adverse events. This annual summary provides an aggregate look at the adverse events reported by Oregon hospitals in 2012. Based on an analysis of these reports, this summary provides information regarding the volume and type of adverse events reported, as well as a clear set of recommendations to promote awareness and prevent recurrence of events in five key areas: communication, falls, healthcare-associated infections, medication or other substances, and care delays.

As hospitals are aware, the voluntary, confidential nature of the Patient Safety Reporting Program is unique. Oregonians can be proud of our hospitals' work in identifying, investigating, and reporting adverse events. Each year, the Commission strives to provide robust information on statewide trends and meaningful feedback for hospitals to learn and improve. Adverse event reports provide substantive proof of hospitals' commitment to patient safety and help to preserve the unique qualities of the program.

The Commission is dedicated to providing value to our Patient Safety Reporting Program participants. The Commission offers many other programs specifically designed to support hospitals with patient safety:

- Educational opportunities – obtain training about infection prevention and other key patient safety practices online or in person
- Monthly newsletters – access news, resources, and essential information for patient safety
- Action Alerts – get important information about potentially serious patient safety concerns
- Oregon Adverse Event Disclosure Guide – better understand the purpose of disclosure and get resources to develop/improve disclosure programs
- Statement on Preventing Harm from Oversedation – inform your efforts to decrease patient harm associated with sedation
- **Coming Soon!** In addition to being Oregon's Patient Safety Organization, the Commission is completing the necessary steps to be listed as a federal Patient Safety Organization (PSO). Soon hospitals will be able to use the Patient Safety Reporting Program to confidentially contribute to a Network of Patient Safety Databases (NPSD) administered by the Agency for Healthcare Research and Quality (AHRQ). After investing in considerable enhancements to the program in 2012, the Commission's alignment with Common Formats provides a new opportunity for Oregon hospitals that choose to contribute information to NPSD. Hospitals will be notified with more details as soon as the Commission achieves federal PSO status.

The Commission appreciates the continued support of our partners and Patient Safety Reporting Program participants. We are pleased to provide this 2012 Hospital Annual Summary to inform efforts throughout Oregon to reduce the risk of serious adverse events and encourage a culture of patient safety.

Overview of Oregon's Hospital Patient Safety Reporting Program

Each year, hospitals participating in Oregon's Patient Safety Reporting Program submit adverse event reports about the unintended harm (or potential harm) to patients that occur as a result of medical care. This annual summary provides a statewide, aggregate picture of the information reported by hospitals in 2012. The reporting program focuses on learning from adverse events rather than simply measuring the number of events reported and aims to:

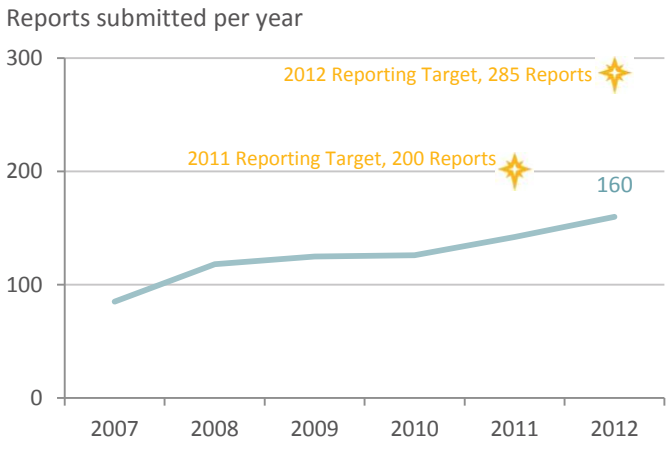
- Build a strong database for learning
- Identify best-practices being used in Oregon to prevent adverse events
- Assist healthcare organizations with setting patient safety priorities and implementing improvement efforts

Hospitals participating in the reporting program are working to identify, investigate, and report adverse events. Through reporting, hospitals demonstrate a commitment to building a culture of patient safety that can effectively reduce preventable injury and harm. To continue building a culture of safety, hospitals must learn from, and capitalize on, opportunities to identify and correct the underlying system issues that lead to adverse events. Hospitals can use this report, in conjunction with other services from the Oregon Patient Safety Commission, to support and improve their patient safety programs.

Reporting History

The Commission has seen incremental increases in the number of reports submitted each year since the reporting program began in 2006 (see Figure 1). Hospitals submitted 160 reports in 2012, the highest annual number of reports submitted to date. In 2011, the Commission established recognition targets for quantity to ensure that the Commission has enough adverse event reports to build a strong database for learning (see Reporting Targets section for further discussion).

Figure 1. Reports Submitted by Year, 2007-2012*

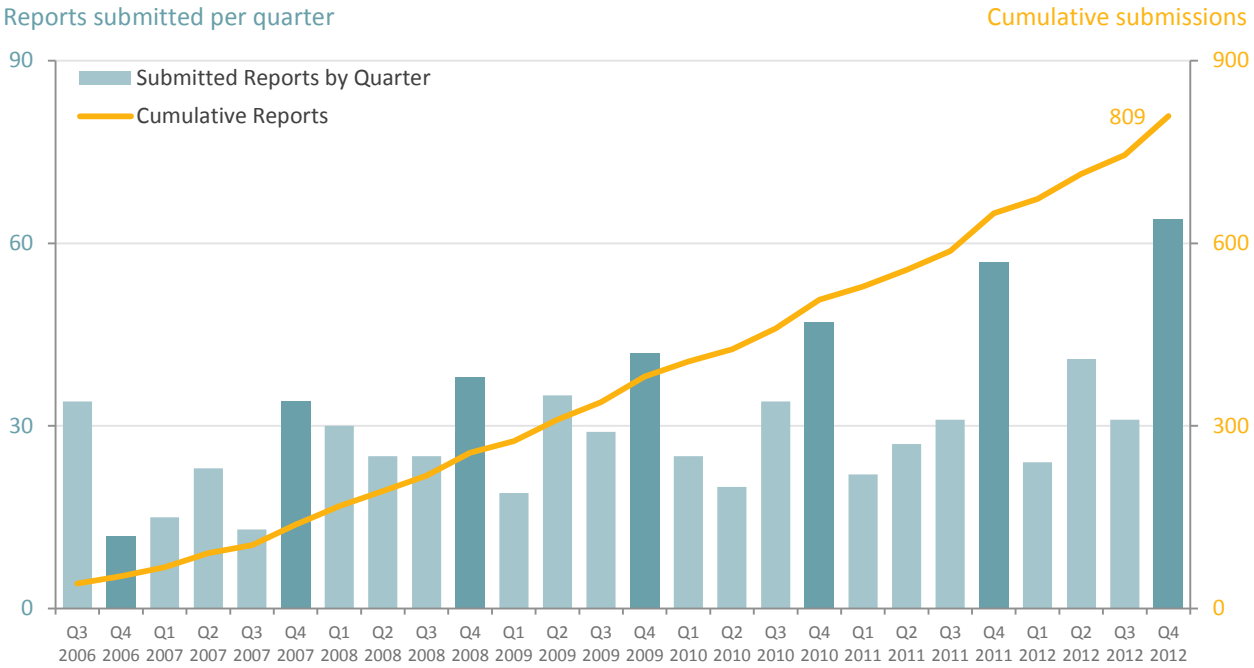


** 2006 includes only seven months of data and is not included in this chart.*

In 2011, the Commission estimated the number of reports that hospitals would likely submit in future years based on prior Oregon reporting trends. We estimated that hospitals would submit 156 reports in 2012. The actual number of reports submitted in 2012 was 160. Although hospitals are making progress with the number of reports submitted, additional improvement will guarantee that the goals of the program are achieved, including the optimization of shared learning at a statewide level. Patient safety evaluation systems (identification, investigation, and reporting of adverse events) are a necessary part of patient safety planning and culture development for all hospitals. The Patient Safety Reporting Program is designed to capture and responsibly share the patient safety improvements that Oregon hospitals are implementing.

Hospital reporting has historically fluctuated throughout the year (see Figure 2). Although the number of reports submitted varied throughout the year in 2012, hospitals submitted the most reports in the fourth quarter, as has been the trend for the last five years. This does not necessarily suggest that more adverse events are occurring in the last quarter of each year since fourth quarter submissions are often for adverse events that occurred earlier in the year.

Figure 2. Reports Submitted 2006-2012 by Quarter and Cumulatively*

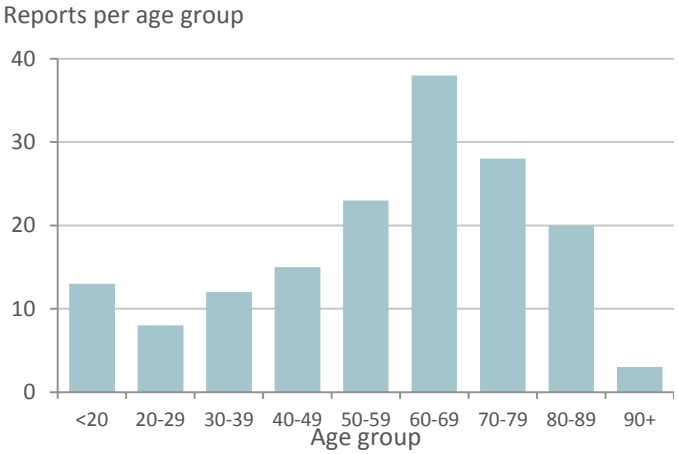


** Graph does not include five 2011 reports for which the submission date was unavailable.*

2012 Reporting

This aggregate overview of adverse event reports submitted to the Oregon Patient Safety Commission by hospitals in 2012 focuses on the types of adverse events reported, the harms associated with those events, and the factors that contributed to the events. The patients impacted by these adverse events ranged in age from newborn to 94. While patients in every age group experienced adverse events, the group experiencing the highest number of events were those ages 60 to 69 (see Figure 3).

Figure 3. Number of Reports by Patient Age, 2012



Types of Adverse Events

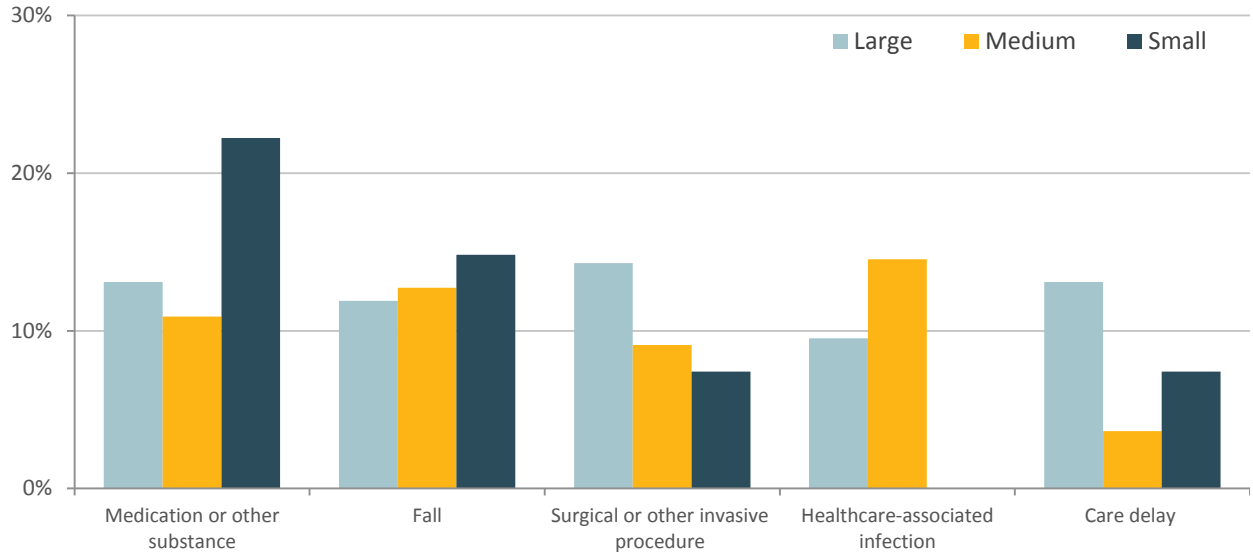
When reporting adverse events, hospitals must indicate the type of event that occurred. Hospitals select an event type from a list of 27 different types of events, which includes an Other category (Appendix I provides a comparison of PSRP event types with other sources). In 2012, the Commission received 160 reports, which included 166 events from 20 of the 27 event types, including an Other category (see Table 1). The most frequently reported events were *Medication or other substance* events (14%), *Fall* events (13%), and *Surgical or other invasive procedure* events (12%). Interestingly, adverse events involving surgery (*Surgical or other invasive procedure*, *Unintended retained foreign object*, and *Anesthesia*) account for 23% of reported events in 2012, which emphasizes the importance of safety in the operating room and opportunities for system-level improvements.

Table 1. Reported Events by Type and by Hospital Size, 2012

	Large n=9		Medium n=13		Small n=11		ALL HOSPITALS N=33	
Event Type	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Medication or other substance	11	14%	6	11%	6	23%	23	14%
Fall	10	13%	7	13%	4	15%	21	13%
Surgical or other invasive procedure	12	15%	5	9%	2	8%	19	12%
Healthcare-associated infection (HAI)	8	10%	8	15%	0	0%	16	10%
Care delay	11	14%	2	4%	2	8%	15	9%
Other event	6	8%	4	7%	4	15%	14	9%
Unintended retained foreign object	5	6%	7	13%	2	8%	14	9%
Pressure ulcer	10	13%	3	6%	0	0%	13	8%
Suicide or attempted suicide	2	3%	3	6%	2	8%	7	4%
Device or medical/surgical supply	2	3%	1	2%	2	8%	5	3%
Perinatal	1	1%	3	6%	1	4%	5	3%
Anesthesia	2	3%	1	2%	0	0%	3	2%
Blood or blood product	1	1%	1	2%	0	0%	2	1%
Irretrievable loss of an irreplaceable biological specimen	0	0%	2	4%	0	0%	2	1%
Radiologic	1	1%	0	0%	1	4%	2	1%
Air embolism	1	1%	0	0%	0	0%	1	1%
Contaminated drugs, devices or biologics	0	0%	1	2%	0	0%	1	1%
Elopement	1	1%	0	0%	0	0%	1	1%
Failure to follow up lab, pathology, or radiology test results	0	0%	0	0%	1	4%	1	1%
Restraint or bedrail related	0	0	1	2%	0	0%	1	1%
TOTAL EVENTS	**84**		**55**		**27**		**166**	
TOTAL REPORTS	**80**		**54**		**26**		**160**	

The number of events reported differs slightly by hospital size (see Figure 4). Small hospitals reported a greater proportion of *Medication or other substance* events than medium or large hospitals, while medium hospitals reported a greater proportion of *Unintended retained foreign objects* than other hospitals. Large hospitals reported a greater proportion of *Care delays* and *Pressure ulcers* than small or medium hospitals.

Figure 4. Top Five Most Frequently Reported Events by Hospital Size, 2012
Reports per event type



Harm in Adverse Event Reports

When hospitals report adverse events, they assess harm related to the event. In 2012, the Commission adopted formally validated national harm categories established by the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) (see Table 2). Adoption of the national NCC MERP harm categories improves the Commission's ability to interpret the impact of adverse events in a standardized way. With the enhancements implemented in 2012, reporters now follow an algorithm embedded into the adverse event report and answer a series of yes/no questions to assign an appropriate harm category.

Table 2. NCC MERP Harm Categories

Category A	Circumstances that have the capacity to cause an adverse event	**No adverse event**
Category B	An event occurred that did not reach the patient (an "error of omission" does reach the patient)	**Adverse event, no harm**
Category C	An event occurred that reached the patient but did not cause patient harm *Harm is defined as "any physical injury or damage to the health of a person requiring additional medical care, including both temporary and permanent injury"*	
Category D	An event occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to preclude harm *Monitoring is defined as "to observe or record physiological or psychological signs"*	
Category E	An event occurred that may have contributed to or resulted in temporary harm to the patient but did not require a significant intervention *A significant intervention is defined as "an intervention intended to relieve symptoms that have the potential to be life-threatening if not addressed"*	**Adverse event, harm**
Category F	An event occurred that may have contributed to or resulted in temporary harm to the patient and required a significant intervention *A significant intervention is defined as "an intervention intended to relieve symptoms that have the potential to be life-threatening if not addressed"*	
Category G	An event occurred that may have contributed to or resulted in permanent patient harm *Permanent harm is defined as "harm lasting more than 6 months, or where end harm is not known ('watchful waiting')"*	
Category H	An event occurred that required intervention necessary to sustain life *An intervention necessary to sustain life is defined as including "cardiovascular and/or respiratory support (e.g., CPR, defibrillation, intubation)"*	
Category I	An event occurred that may have contributed to or resulted in patient's death	**Adverse event, death**

In 2012, 106 reports (66%)—capturing 112 total adverse events (67%)—indicated that the event resulted in serious harm (categories F, G, H, and I). Table 3 shows the top serious harm events by event type for 2012. The greatest proportion of serious harm events was comprised of *Falls* (16/106 events). All patients involved in *Care delay* and *Pressure ulcer* events suffered serious harm. Appendix II provides a table of all harms reported in 2012 by event type.

Table 3. Number of Serious Harm (F-I) Events with Percent of Event Type, 2012*

Event Type	Number	Total	Percent
Care delay	15	15	100%
Pressure ulcer*	13	13	100%
Fall	16	21	76%
Unintended retained foreign object	9	14	64%
Healthcare-associated infection	10	16	63%
Medication or other substance	14	23	61%
Surgical or other invasive procedure	11	19	58%
Other event	8	14	57%

** Excludes event types with five or fewer serious harm reports.*
***By definition, all stage 3-4 or unstageable pressure ulcers are considered permanent harm because even once they heal, the tissue is no longer normal.*

While hospitals are only required to report serious adverse events, the identification of less serious harm, no harm, and "near miss" events provides opportunities to improve patient safety and decrease the likelihood for serious adverse events to occur in the future. In 2012, 16 (10%) of reported events were in the less serious harm category (category E), 32 (20%) in the no harm categories (categories C and D), and 6 (4%) did not reach the patient and were categorized as near miss events (categories A and B). Organizations that report near miss events play a critical role in improving patient safety by investigating events that, although ultimately deemed near misses, allow for the identification of system-level issues that could lead to future adverse events. Rather than simply asking, “Did this system contribute to this patient’s outcome?” these facilities go a step further and ask, “Could this system create or contribute to an adverse event for any patient?” Willingness to look beyond the specific circumstances of an event to the broader context of patient care is commendable.

Hospitals reported 31 patient deaths (harm category I) in 2012 (19%), which is proportionately similar to last year (see Table 4). More than half of the harm category I events involved patients who were more vulnerable (e.g., identified as having fragile health status or significant comorbidities). These reports indicate that many hospitals are diligent about reporting serious events, particularly those events affecting more vulnerable patients. While some of these deaths may be considered unavoidable, reporting these types of events demonstrates a belief that all events should be investigated and examined to identify opportunities for prevention, regardless of the complexity of a patient's health status. In fact, these investigations usually yielded system-level action plans—a clear indication that Oregon hospitals are committed to preventing significant harm even in situations when there was no plausible way to avoid the outcome. Hospitals used these significant events to strengthen their systems and prevent future harm as much as possible.

Table 4. Reports Indicating Death (Harm Category I) by Year

	2007	2008	2009	2010	2011	2012
Number of Harm Category I Reports	26	27	29	33	22	31
Percent of Total Reports	31%	23%	23%	26%	15%	19%

Contributing Factors

In reporting an adverse event (or potential event), hospitals identify factors that contributed to the occurrence of the event. The Agency for Healthcare Research and Quality defines contributing factors as circumstances that are retrospectively determined to have increased the likelihood of an adverse event. Contributing factors are generally external to the patient and frequently relate to the physical environment or to the care delivery system. The 160 reports submitted in 2012 identified 57 individual contributing factors across the eight categories used by the reporting program. Facilities can select multiple contributing factors in any category.

When hospitals identify contributing factors, they are identifying opportunities to make improvements that create a more reliable system of care. On average, reports identified five contributing factors across the eight categories, with a range of one to seventeen factors per report.

The categories with the most frequently reported factors were *Communication* (59% of reports identified at least one *Communication* factor), *Policy/procedure* (56%), and *Patient Management* (49%) (see Figure 5). Two of these three categories have been the top most reported categories for several years running, with *Communication* consistently being the most reported. Large hospitals represent 50% of all reports submitted and generally determine the relative rankings of contributing factors. (see Figure 6).

Over time, *Communication* has remained the top contributing factor category since the early days of the hospital reporting program. However, in recent years, sentinel event data from The Joint Commission shows a drop in the proportion of reports citing communication as a contributing factor (from 82% in 2010 to 59% in 2012). See the A Closer Look section on communication (page 10) for more detailed discussion, tools, and resources to support continued improvement.

Figure 5. Contributing Factor Categories, 2012

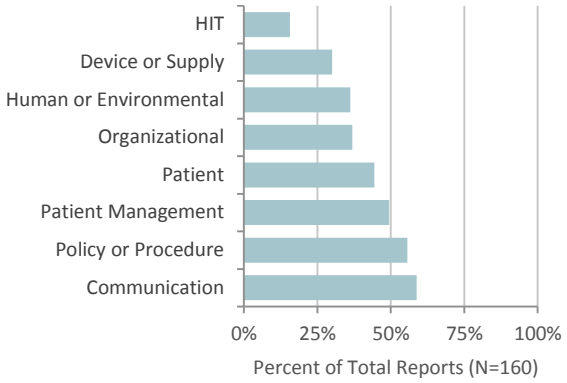
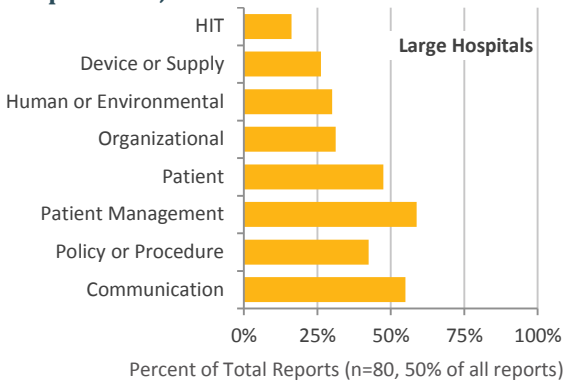
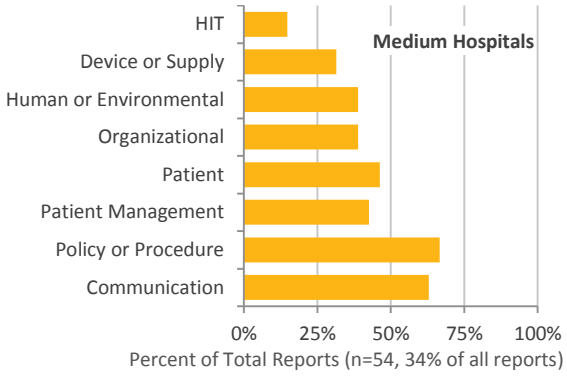
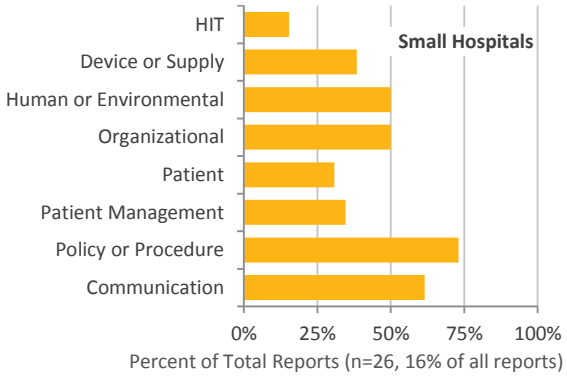


Figure 6. Contributing Factor Categories by Hospital Size, 2012







A Closer Look: How Data Informs Change

A closer look into the most frequently reported adverse events reveals a detailed picture of what hospitals can learn from adverse event reports. This report offers recommendations for hospitals to improve patient safety efforts in five key areas that were frequently identified in 2012 reports: *Communication*, *Falls, Healthcare-associated infections*, *Medication or other substance*, and *Care delays*. The common thread connecting all improvement efforts is the importance of strengthening each organization's culture of safety. Establishing a strong culture of safety is a necessary foundation to ensure patient safety improvement efforts are successful and sustainable.

Patient Safety Culture

Establishing a "culture of safety" means creating a work environment where all staff are supported by leadership to practice teamwork effectively, communicate clearly, and openly discuss and learn from adverse events. Hospitals with a strong culture of safety

- Are skilled at proactive identification of risk for patient harm
- Use root cause analysis to investigate adverse events
- Review care delivery processes to identify the potential for breakdowns so that unanticipated harm is prevented and a more reliable care delivery system is nurtured

The Comprehensive Unit-based Safety Program (CUSP) provides a structure for identification and resolution of safety issues at the unit level (see box). Early identification and response to potential risks demonstrates an organization's dedication to improving and creating a strong culture of safety. Another tool, Healthcare Failure Mode Effects Analysis (HFMEA) is particularly effective in proactively identifying the steps in organizational processes that could inadvertently contribute to harm (see box). The Closer Look sections of this report also provide additional tools and resources to help hospitals strengthen safety culture in a variety of areas.

Culture of Safety Tools & Resources

Comprehensive Unit-based Safety Program (CUSP)
Change workplace culture by empowering staff to assume responsibility for safety

Johns Hopkins Center for Innovation in Quality Patient Care

Using a Comprehensive Unit-based Safety Program to Prevent HAI, AHRQ

Healthcare Failure Mode and Effects Analysis (HFMEA)
Proactively identify needed improvements and strengthen systems

Using Healthcare Failure Mode and Effects Analysis, VA National Center for Patient Safety

Failure Mode and Effects Analysis Tool, Institute for Healthcare Improvement

Communication

Communication issues played a prominent role in adverse events reported to the Commission in 2012. Overall, 94 (59%) of the reported events indicated that communication factors contributed to the adverse event. While this represents a drop in communication-related adverse events, one of the most compelling reasons for continued dedication to improving communication is the direct impact such improvements can have on patient safety. Communication-related events often have a high propensity for significantly harming the patients involved. In 2012, 61% of events that resulted in serious harm to the patient involved a breakdown in communication.

Communication problems occurred across disciplinary and facility boundaries, such as between providers and staff (49%), during handoffs and shift reports (35%), among interdisciplinary teams (24%), and across units (23%) more often than they did within units (20%). Communication frequently contributed to *Care delay* (87%), *Perinatal* (80%), *Unintended retained foreign object* (79%), *Medication or other substance* (61%) and *Surgical or other invasive procedure* (58%) events (see Table 5).

Table 5. Communication Category by Event Type, 2012

Event Type	Number	Total	Percent
Care delay	13	15	87%
Perinatal	4	5	80%
Unintended retained foreign object	11	14	79%
Medication or other substance	14	23	61%
Surgical or other invasive procedure	11	19	58%

Of the different communication issues facing hospitals and healthcare professionals, two are in the forefront: issues surrounding adoption and use of electronic health records and information exchange among health professionals. Hospitals have instituted tools and training to standardize communication in situations like handoffs and shift changes to ensure that complete and accurate patient information is available. Hospitals in Oregon are moving swiftly to adopt, integrate, and standardize electronic health records house-wide. But even as improved systems solve old problems, they create new challenges. Seventy percent of events that indicated both *Communication* and *HIT* as a contributing factor, also indicating that the event involved the electronic health record.

Electronic Health Records

Many hospitals in Oregon have moved to electronic health records (EHRs) in recent years, with a number of changes occurring in 2012. While EHRs can significantly improve the transfer and interpretation of information both within and between healthcare settings, they are not without their own risks and issues.

While electronic order entry removes the risk of misunderstood orders due to indecipherable handwriting or poor memories, it can introduce other sources of problems. Juxtaposition errors can occur in which the wrong patient, medication, laboratory order, or educational information is selected from a drop down menu because of similarities in spelling or adjacent locations in the list. EHRs can also add to alarm fatigue. Various alerts and informational text are triggered when certain

medications or laboratory tests are ordered. These alerts are easily bypassed by healthcare professionals in the same way individuals will automatically click 'yes' when a window on their computer screen pops up asking if they are sure they want to delete a file. Newly adopted systems can introduce misunderstandings regarding where certain information resides, leading to unintended miscommunications. These kinds of situations (and other similar challenges) are frequently reported to the Commission, clearly signaling that this emerging area requires proactive risk assessment and improvements to streamline and clarify communication.

The Agency for Healthcare Research and Quality and Rand Corporation have published the *Guide to Reducing Unintended Consequences of Electronic Health Records*, a resource for all types of healthcare facilities that are currently using or planning the implementation of EHRs. The guide provides information that allows an organization to anticipate, avoid, and address problems that can occur when implementing and using an EHR.

Improving Communication across Boundaries

2012 reports show that communication problems across professional, disciplinary, and organizational boundaries frequently contributed to adverse events. Moving to an EHR is likely to reduce some of these miscommunications; however, EHRs cannot address the problems that stem from professional and organizational culture differences.

The unstated and powerful rules of culture dictate organizational hierarchy and influence, and are responsible for varied communication breakdowns. In situations where emotions typically run high, clear communication is difficult to achieve, particularly when those in the communication exchange are in different power positions and when the outcome is critical. Programs like Crucial Conversations and Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) offer hospitals resources to specifically address culturally driven communication breakdowns (see box).

Resources to Address Communication Breakdowns

Crucial Conversations

Crucial Conversations is a proprietary program developed by a private consulting company and is beginning to be used in healthcare. The program focuses on communication during highly charged situations, offering strategies and techniques to use when emotions and consequences are high.

Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS)

TeamSTEPPS is a team-training program developed by the Department of Defense and used widely in healthcare, particularly in emergency departments, operating rooms, and obstetrical areas. TeamSTEPPS can strengthen the interactions among healthcare professionals within specific departments or groups.

The TeamSTEPPS framework identifies factors that can lead to communication issues resulting in adverse events. Many of these factors were evident in the 2012 adverse events reported. Understanding how these factors contribute to adverse events helps to expand the range of possible actions for dealing with the communication issues, and indirectly, the underlying culture. Table 6 provides examples of how TeamSTEPPS might have been used to strengthen action plans. For a full listing of TeamSTEPPS factors and definitions, see Appendix III.

Table 6. Using TeamSTEPPS Factors to Understand Common Communication Breakdowns

Situation A: Excessive professional courtesy

A nurse, taking a phone order for insulin from a hurried physician, decided not to make the physician wait while she retrieved the chart. She wrote down 100 units on her note pad rather than 10 units and did not keep the physician on the phone for a read-back of the order. To address this issue, the hospital planned to reinforce the read-back requirement for all high-alert medications with nursing staff.

Discussion

The nurse's deference to the physician in not wanting to inconvenience him contributed to the wrong medication dose. Recognizing the lack of read-back as stemming from inappropriate application of the cultural norm of deference would have prompted the organization to address the issue with both nursing and physician staff. Having shared responsibility for read-backs is a stronger patient safety practice than relying solely on the subordinate in a hierarchical system.

Situation B: Complacency

During a lens implant procedure, the surgeon needed to use the backup lens for the implant. While the original timeout had included verification of the lens and its expiration date, no verification was done for the backup lens. None of the surgical staff called attention to the lack of verification. When documenting the lens in the surgical record, the circulating nurse noted that it was past the expiration date.

Discussion

The lack of speaking up to ensure verification of the implant stemmed from the assumption that there were no problems with the lens. Additionally, all involved assumed the backup lens would not be needed and did not take the same diligence. This complacency was mirrored by the organization's response to require stronger lens verification from the vendor; however, had the organization also recognized that the lack of speaking up was symptomatic of a weak patient safety culture, they could have developed action plans to address the cultural issue.

Situation C: Task Fixation

In completing a shift report on a patient with an epidural who had declining neurologic status in the lower extremities, Nurse 1 did not relate that the provider had yet to be notified of the change in patient status, assuming Nurse 2 would make the notification. Nurse 2, assuming the provider had been notified, did not inquire regarding plans for addressing the change in neurologic status which resulted in a delay in removing the epidural.

Discussion

The hospital addressed the handoff communication process as one of their action items, but did not consider the possibility of task fixation. The focus on specific tasks and details about the patient's status prevents a broader exchange of information regarding the patient's care. Formal and informal norms that judge a nurse's competency by the completion of the required elements of the care plan reinforce this focus. If task fixation was involved in the communication gap, the organization missed an opportunity to improve nursing care. A more complete picture of the patient would emerge through a revision in the handoff process that included, for example, information on next steps and what is still needed.

Situation D: Passenger Syndrome

In the course of a difficult delivery, the nursing staff had become increasingly concerned regarding the patient, yet they did not speak up or use the hospital's chain of command to address the issue. Believing that the surgeon's decision to wait for another surgeon (who was not in house) to arrive took precedence, they remained silent.

Discussion

The hospital's response to this event showed awareness of the underlying cultural issues in which staff abdicate their responsibilities because someone else is in charge. The hospital put in place a challenge algorithm based on the TeamSTEPPS approach to a "concerning event, decision, [or] situation." This gave the staff tools to use and reinforced their sense of professional responsibility and accountability for action.

In emotionally charged situations, such as in the examples above, clear communication is difficult to achieve. Programs like TeamSTEPPS and Crucial Conversations specifically address these situations and help to create high functioning teams that are well-equipped to address communication breakdowns.

RECOMMENDATION

Implement TeamSTEPPS, Crucial Conversations, or a similar communication program in your organization. If you are already using a communication program, consider ways to ensure long-term sustainability and effectiveness.

Falls

Falls continue to be one of the most commonly reported events in Oregon. In 2012, hospitals reported 21 adverse events from falls, most of which (76%) resulted in serious harm or death. Just over 90% (19 falls) resulted in a physical injury, most frequently a fracture of some kind (12/21, 57%). Table 7 details the patient harms that occurred after the reported falls. The average age of the adult patients who fell was 74, with a range between 56 and 89 years.

Table 7. Fall Reports Indicating Physical Injuries to Patients, 2012 (n=21)

Physical injury	Number	Percent
Fracture	12	57%
Intracranial injury	5	24%
Other injury	4	19%

National estimates of falls in hospitals range from 700,000 to 1,000,000—approximately one-third of which are preventable (Currie, 2008). While the primary focus remains to prevent falls from occurring, the focus of care has recently expanded to include decreasing injury from falls (recognizing that some falls may not be preventable). Several of the 2012 falls reported in Oregon occurred with staff in the room that could not respond quickly enough to a patient's urgent need to

toilet or return to bed. Some patients acknowledged that they had decided not to use the call light or wait for staff to assist them. Having an expanded focus allows implementation of additional strategies to help keep patients safe, even when a fall cannot be prevented.

The primary strategy for fall prevention and injury mitigation is an individualized, multimodal care plan based on an accurate fall risk assessment that is modified as the patient's risk changes. The fall risk assessment identifies specific factors in the environment, the patient's health status, and treatment plan that may increase the risk of falling. The individualized care plan identifies the strategies and actions that providers can take to decrease that risk. Neither risk assessment nor individualized care plans alone are sufficient to prevent falls; both must be in place for effective fall prevention.

Risk Assessment

Extensive literature and a variety of tools address the multiple dimensions of patient assessment for fall risk (see box). The Agency for Healthcare Research and Quality (AHRQ) has compiled a toolkit to assist hospitals in keeping their patients from falling: *Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care*. The toolkit outlines an entire program including development, implementation, spread, and sustainability. AHRQ's toolkit emphasizes the importance of using a standardized assessment of fall risk factors but cautions against overreliance on the score, stating "…assessment tools are only one small piece of the process… [that are] meant to complement clinical judgment, not to replace it" (Section 3.3). This sentiment is echoed by a falls researcher who noted in a recent article that "Falls prediction tools do not work well and falls prevention requires a wide range of interventions" (Oliver & Healy, 2009). Despite this caveat, standardized risk assessments are essential to identify the specific risks of individual patients in order to implement individualized fall prevention care plans.

Fall Risk Assessment Tools

Note: these tools are only one part of a complete assessment and are not predictive of a fall

- Morse Fall Scale
- STEADI (Stopping Elderly Accidents, Deaths & Injuries)
- STRATIFY
- Timed Get Up and Go (TGUG or TUG) Test

Individualized Care Plans

With moving to the new Patient Safety Reporting Program system in June 2012, hospitals could indicate which fall prevention strategies were in the care plan and which were in use at the time of the fall. For the 16 fall events for which there is data, only two of the submitted reports indicated that all prevention strategies in the care plan were in use at the time of the fall. The gaps between care plan strategies and the strategies actually implemented by hospital staff occurred most commonly with bed/chair alarms and placing the bed in a low position.

Falls may be precipitated by many different factors, including factors that are physiological in origin (e.g., sensory impairment or mental status) or those caused by environmental hazards, communication, or patient management. The example on page 17 contains an actual fall report received by the Commission that gives a particularly strong example of effective cause

identification. In the 2012 *Fall* events, the primary contributing factor category was *Patient* (67%), followed by *Device or supply* (52%), and *Human/environmental* (52%).

Mental and/or Behavioral Health Status

In 38% of *Fall* events, the review team identified the patient's mental and/or behavioral status as contributing to the fall. While the specific mental or behavioral issues are not always specified, in general, confusion related to lack of familiarity in surroundings and medication regimens, as well as cognitive impairment, can be involved. All are significant risk factors for falls in hospitals. A recent study of cognitively impaired patients found that unsafe gait was an independent risk factor for falling (Vassallo et al., 2009). One strategy for preventing falls in patients with cognitive impairment is regular and routine rounding at frequent intervals with reminders about key fall precautions.

Communicating with patients and their families about falls prevention is important. One effective strategy is to use a whiteboard to remind patients of important safety measures such as "wear non-skid socks" or "call for assistance" along with the name of the patient's nurse and physicians. A recent study also noted the value of whiteboards in promoting communication among healthcare professionals (Sehgal, Green, Vidyarth, Blegen, & Wachter, 2010).

RECOMMENDATION

Use a whiteboard for each patient to write the three to four main fall safety points in simple language for all patients; for patients with memory problems, frequently scheduled rounds with reminders can reduce risk.

Devices and Equipment

Wheels on bedside commodes, tables, and stools were involved in three of the 2012 *Fall* events. In other falls, the patient became tangled in IV lines, bed linens, or other items cluttering the immediate area. Hospitals involved in these adverse events reported a number of system-level actions that would significantly reduce fall risk such as removing wheeled furniture, improving lighting, adding beds and equipment designed for bariatric patients, and removing clutter from rooms and hallways.

RECOMMENDATION

Examine your facility's physical environment and take action to improve the environment in ways that can help to prevent fall risk.

The foundation for individualized fall prevention care plans is a set of universal precautions that are put into place for all patients, regardless of individual fall risk (see box). For reports submitted in 2012, the most common prevention strategies were *Call light within reach*, *Patient/family education regarding fall prevention*, and *Fall alerts posted* so staff were aware of patients that were at high risk for falling. Having a call light within reach is a moderately strong strategy since doing so removes one reason a patient might attempt to get out of bed without assistance. *Patient/family education* and *Posting fall alerts* are important strategies but are less strong because they rely on individual memory and vigilance. Of the three common fall reduction strategies noted in reports of falls, only *Call light within reach* is on the list of recommended universal fall precautions.

Least common of the strategies in use in Oregon hospitals were *Use of hip/joint protectors*, which reduce the risk of harm from a fall, and *Non-slip floor mats* or *Additional lighting*, both of which decrease the risk of falling. These three strategies are stronger because when they are in place, they decrease risk of a fall without relying on memory or vigilance. *Additional lighting* is also on the list of recommended universal fall precautions.

Universal Fall Precautions

Institute for Clinical Systems Improvement, Health Care Protocol: Prevention of Falls (Acute Care)

The following interventions apply to all patients regardless of fall risk:

- Familiarize the patient to the environment
- Have the patient "teach back" call light use
- Keep the call light within reach at all times
- Keep patient's personal possessions within reach
- Have sturdy handrails in patient bathrooms, room and hallway
- Keep the hospital bed in low position with brakes locked
- Provide non-slip, well-fitting footwear for the patient
- Utilize night light or supplemental lighting
- Keep floor surfaces clean and dry; clean up all spills promptly
- Keep patient care areas uncluttered

See also: Agency for Healthcare Research and Quality, Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care

RECOMMENDATION

Establish a sustainable falls prevention program for all patients that includes a validated fall risk assessment tool, individualized care plans, and on-going measurement to ensure effective implementation over time.

Include recommended universal fall precautions as appropriate in all patient care plans.

Adverse Event Report Example: Fall

This example contains an actual report received by the Commission and is a particularly strong example of effective cause identification (highlighted below). Report content has been modified to maintain confidentiality.

Complete account: This event is a fall with minor injury in a 69 year old female admitted for a total knee arthroscopy. She tolerated surgery well, was on a pain pump, which prevents her from feeling when her knee starts to buckle, and was in her 2nd post-op day when she ambulated to the BR using a walker.

✓ Relevant clinical information

✓Sequence of actions and relevant surrounding circumstances/conditions

She needed stand-by assist only. Per policy, a CNA accompanied her, but she left after patient was safely on the commode. The risk assessment was correct, but staff did not follow through with the correct action, that is, staying with the patient until she was back in bed. The patient was reminded to ring the bell when she was done, but stood up to pull her pants up and fell. She alerted the staff by pulling the emergency bell cord in the BR. She felt her operative knee "twist."

✓ System-level contributing factors directly associated with the event

She needed more pain medication for the rest of that morning. No further complaints after that day. X-rays demonstrated no damage. She was kept another night just to make sure she was steady on her feet and discharged the following day.

✓ Relevant clinical information

✓ Presence of additional root or proximal causes

Cause 1: Hospital policy did not specify that CNAs must never leave the side of a post-op knee patient with a pain pump who is up and about.

Since policy has a variable relationship to day-to-day practice, a stronger statement expressing the same idea would be: the standard of practice (not just policy) for fall prevention does not include a requirement that staff must accompany patients with pain pumps whenever they are out of bed.

Action Plan 1: Revise policy to state that patients with a femoral pain pump must be accompanied at all times when up and about. Include this "Always event" in the CNA orientation checklist.

✓ Plans clearly link to the identified cause

In general, changing practice through a focus on individual learning and memory is important, but is a relatively weak approach.

✓ At least one relevant root cause identified

Cause 2: Although we are working diligently on it and it has improved, we still have work to do to improve our facility's culture of safety.

Statement identifies patient safety culture as an underlying cause of an adverse event. Identifying and developing responses to culture issues is often difficult. Weakness in patient safety culture is seen in this event by the staff member not remaining by the patient's side.

✓ System-level solutions that decrease the likelihood of such events in the future

Action Plan 2: Address those issues identified by the Culture of Safety Survey just completed. SAFETY: Talk about it, talk about it, talk about it—at morning safety huddles, at bedside reporting, at orientation sessions, at departmental meetings, at annual competencies; every single chance we get.

✓ Plans clearly link to the identified cause

Changes to practice such as adding safety briefings through defined huddles and shift handovers are a strong plan. Increased house-wide emphasis on communication with specific plans for when and where to communicate is a moderately strong plan.

✓ System-level solutions that decrease the likelihood of such events in the future

Cause 3: Our fall risk care plan did not address this issue with the pain pump.

Statement identifies gap in the hospital's fall risk care plan that led to gaps in the care plan developed for a specific patient.

✓ At least one relevant root cause identified

Action Plan 3: Add specific interventions for pain pump patients on our "At Risk for Fall" Care Plan. Post signs in the BR encouraging patients to call before getting up.

✓ Plans clearly link to the identified cause

Moderately strong plan prompts important interventions for a subset of patients at risk for falls.

✓ Presence of additional root or proximal causes

Cause 4: We have discovered that patients tend to fall most often when they get up to use the bathroom. We are working on ways to improve this by considering a riser on the toilet; however, this has not been incorporated into our culture yet.

Cause statement puts this event in larger context with wider implications and is an excellent example of looking beyond single incidents to identify commonalities across incidents that can be addressed to further decrease risk.

Action Plan 4: Complete a study to see if a toilet riser helps patients to be more stable when using the toilet after receiving a block after surgery.

While this is a weak action plan according to the Veterans Administration National Center for Patient Safety hierarchy, it is a necessary first step to a stronger plan, which would decrease the risk of falling in patients attempting to get off the toilet

Healthcare-Associated Infections

The past several years have seen increased attention on the elimination of healthcare-associated infections (HAI). AHRQ's 2013 report, *Making Healthcare Safer II*, supports evidence-based practices for HAI prevention and emphasizes that HAI events remain a significant area for action (see box). Many of Oregon's hospitals are aggressively confronting infections through participation in quality improvement collaboratives that are implementing best practices for rapid, sustainable change. Twenty-four Oregon hospitals have participated in one or more of the Commission's infection prevention collaboratives.

AHRQ "Strongly Encouraged" Practices for HAI Prevention

- Bundles that include checklists to prevent central line-associated bloodstream infections
- Hand hygiene
- Barrier precautions to prevent healthcare-associated infections

Hospitals reported 16 healthcare-associated infections in 2012 (see Table 8). The majority of these reports (63%) concerned central line-associated blood stream infections and 25% were surgical site infections following joint surgery (3 events) and heart surgery (1 event). No single infectious agent predominated in the reported HAI events, although Methicillin-resistant *Staphylococcus aureus* (3 events) and Methicillin-sensitive *Staphylococcus aureus* (4 events) were identified. There were no reports involving a recent pathogen of concern, carbapenem-resistant Enterobacteriaceae.

Table 8. Reported Healthcare-Associated Infection Event Types, 2012 (n=16)

Type of HAI	Number	Percent
Central line-associated blood stream infection (CLABSI)	10	63%
Surgical site infection (SSI)	4	25%
Primary blood stream infection (BSI)	1	6%
Pneumonia	1	6%

Multiple different contributing factors played a role in the reported HAI adverse events (see Table 9). Across the eight contributing factor categories, hospitals identified 20 different factors associated with HAIs. Of note, despite the central place of hand hygiene in infection prevention, none of the reports mentioned hand hygiene or commented on current hand hygiene efforts.

Table 9. Reported Contributing Factor Categories for Healthcare-Associated Infections, 2012

Contributing Factor Category	Number	Percent
Policy/procedure	8	50%
Patient management	8	50%
Patient	7	44%
Organizational	7	44%
Communication	6	38%
Device	2	13%
Human	1	6%
HIT	1	6%

The Gap between Policy and Practice

In 2012, one of the top contributing factor categories for HAI events was *Policy or procedure*. Identifying missing or inadequate policies or procedures is an important first step in addressing HAI events; however, while policy and procedure revisions may identify ways to address HAI risks, a policy or procedure cannot, in and of itself, actually prevent an HAI.

To prevent HAI events, staff must effectively implement policies and procedures. For example, hospitals have long used infection prevention bundles to effectively reduce HAIs; however, data reported in 2012 indicates that for several HAI events, the bundle was not used consistently. In seven of the CLABSI reports, some lapse in procedure occurred or an ambiguity in requirements allowed for unnecessary variation. In particular, hospitals identified the following inconsistencies in bundle application in 2012 reports:

- Secured central line
- Biopatch application
- Dressing change frequency
- Central line change frequency
- Hub cleansing
- Skin preparation
- Aseptic technique
- CHG bathing frequency

Effective implementation of infection prevention bundles requires that organizations implement all elements of the bundle every time for every patient and measure adherence over time. Bundles like the Institute for Healthcare Improvement's *Central Line Bundle* integrate the measurement function and provide instructions and resources for conducting simple, ongoing assessments to ensure adherence. In addition, the Oregon Patient Safety Commission's *Oregon Model ASC Infection Prevention and Control Toolkit* was designed for use by ambulatory surgery centers but contains a variety of tools that can be used by hospitals to measure and improve adherence.

Regular monitoring of patient care practices through assessment with feedback to staff is essential to identify the gaps between policy and practice. A strong approach to this at the unit level can assure staff buy-in. Routine infection information provided to staff through the use of a patient safety cross or other real-time graphic representation of patient care assessment data will support adherence to best practice standards (see box).

Safety Cross

A Safety Cross is a special kind of calendar that is updated daily by staff and displayed on-unit to give staff the ability to see how many new infections (or pressure ulcers, falls, etc.) existed on the unit as recently as the previous day. The Safety Cross can be used to track almost any measure. Ownership and responsibility for the data is in the same hands that are responsible for patients/residents reflected in the data. Make sure those responsible for completing the tool understand how it works by following Safety Cross Guidelines.

RECOMMENDATION

Integrate regular patient care assessments to identify gaps and ensure complete implementation of central line bundles and infection prevention best practices. Provide feedback at frequent intervals to engage staff.

Narrowing the Policy and Practice Gap

Research shows that some safety interventions are reducing the national number of central line-associated bloodstream infections in intensive care units (Wachter, 2013). However, the frequency of CLABSI events reported in 2012 and the associated breakdowns in CLABSI bundle application indicate that adopting a bundle is only the first step in preventing HAIs. An organization must ensure that the bundle is implemented correctly and consistently over time—an effort that requires continued, targeted process improvements and a strong culture of safety.

In half of the HAI events, hospitals reported that limited documentation restricted the ability of staff to determine the cause of the event. Without effective documentation, staff had difficulty identifying the specific aspects of central line care that were problematic. This, in turn, decreased the ability for staff to identify how the event happened and develop strong action plans to prevent future events. (The example of an actual adverse event report on page 23 highlights a strong Complete Account—an element of reporting that is highly dependent on the effectiveness of event documentation.)

Action plans to address adverse events should contain strong, system-level actions that an organization will take to prevent or minimize the occurrence of similar events. Among hospitals that reported HAI events, one prevention strategy was commonly applied—education of healthcare staff (specifically, nurses, physicians, and EMTs) regarding appropriate documentation and current protocols and practices. An education-focused prevention strategy is an individual-level action, not a system-level action. While education is an essential element of patient safety efforts, education alone is not an adequate response to an adverse event. Education is an important element that allows standardization of processes; however, education will only be effective when it occurs in conjunction with monitoring to reinforce practice and maintain accountability.

The most effective way to narrow the gap between policy and practice is to ensure that a strong culture of safety is present in the organization. By empowering staff to assume responsibility for safety, staff will embrace the importance of consistent and effective implementation of policies and procedures. Tools like the Comprehensive Unit-based Safety Program (CUSP) are key to helping organizations strengthen their culture of safety (see box on page 9).

RECOMMENDATION

Use a program like the Comprehensive Unit-based Safety Program (CUSP) with tools to empower staff to take responsibility for safety and create a sustainable safety culture.

Adverse Event Report Example: HAI

This example contains an actual report received by the Commission and is a particularly strong example of a complete account (highlighted below). Report content has been modified to maintain confidentiality.

Complete account: On 3/16 a 63 yo male was transferred to [hospital] with chronic kidney disease requiring hemodialysis. He had been treated for SOB and CHF. Creatinine currently potassium levels elevated. This am, following IV diuretics without significant urine output and rising potassium, patient was sent for hemodialysis. 3/16 temporary HD placed in groin. Procedure followed central line placement checklist.

✓ Relevant clinical information

✓Sequence of actions and relevant surrounding circumstances/conditions

On 3/19 CVL-Perm HD placed in neck. On 3/20 CVL-Ablation performed for atrial flutter. There was a delay in ablation case start after site prep completed. Checklist used for ablation procedure, but not for earlier line placement as it has not been required in all settings. On 3/21 patient experienced chills, hypotension, lethargy, WBC=23.0 (previous WBC on 3/20 was 7.8). 3/21 positive blood cultures x2 for MSSA, no infection identified at other site—CLABSI. 3/22 Patient expired, severe sepsis (patient/family did request comfort care).

✓ System-level contributing factors directly associated with the event

"Central Line Placement Checklist" did not include Chlorhexidine manufacturer recommendations for moist sites such as inguinal fold. [Medical] director feels staff would benefit from other training.

✓ Relevant clinical information

The first summary sentence sets the stage and clarifies the rest of the account. Text includes information about the patient's course and the role of important contributing factors noted in the report's Contributing Factors section. In the original report, the role of contributing factors appeared under Cause; however, that information is more appropriate in the Complete Account section to provide detail about context of care and decisions that help explain how the event occurred. Note minor contributing factors in the Contributing Factors section.

✓ At least one relevant root cause identified

Cause 1: The checklist is not used in all settings and does not include specifics for prep procedure in moist sites.

An even deeper root cause would identify the reason why not all settings use a checklist.

Action Plan 1: Revise checklist to add specific direction for 2 minute prep of groin sites and to allow groin sites to dry for at least 1 minute. This clarification to be added to the [policy] "Central Line Placement" revisions. Revised checklist to be placed on the central line carts.

✓ Plans clearly link to the identified cause

Checklist revision with placement on the central line carts is a moderately strong action plan because it simplifies the process and does not rely on individual memory. The action plan does not ensure that all settings where central lines are placed use the checklist, although that is implied.

✓ Presence of additional root or proximal causes

Cause 2: Policy contained only very general information regarding aseptic-related consideration for insertion of central lines (hand hygiene, maximal barrier precautions, Chlorhexidine skin antisepsis).

Action Plan 2: Revise this policy to include detailed information (the same information included in the "Central Line Placement Checklist") regarding hand hygiene, maximal barrier precautions, Chlorhexidine skin antisepsis.

A policy should be consistent with practice, but policy change does not necessarily change practice. In this case, the policy is being updated to reflect the practice. Like education, policy is a necessary, but not sufficient, aspect of action plans aimed at preventing future harm.

Medication or Other Substance

Medication is a central element in the care of all hospitalized patients. The system through which a medication order moves is complex and has numerous process steps. Although these steps provide opportunities to ensure accuracy, as the number of medication orders increases and the complexity of the medication system grows, so does the risk of an adverse event. Both internal and external opportunities exist to standardize and improve medication management and reconciliation. Hospitals must work across internal units and disciplines to identify areas of concern and standardize processes. More and more, hospitals are working with external partners such as ambulatory surgery centers, nursing homes, and coordinated care organizations to standardize discharge forms and other documents that support care transitions to minimize the opportunity for medication events that can lead to significant patient harm.

In 2012, medication-related events were the most frequently reported adverse events by hospitals, with 23 *Medication or other substance* events reported (see Table 10). Fourteen (61%) of the medication-related events resulted in serious harm (eight of which contributed to patient death). The 23 reports described nine different types of medication events, of which, the majority involved high alert medications.

Table 10. Reported *Medication or Other Substance* Events by Type, 2012

Type of Medication Event	Number	Percent
Incorrect dose	12	52%
Incorrect medication or substance	3	13%
Other medication or other substance event	3	13%
Incorrect rate	2	9%
Incorrect strength	2	9%
Medication or substance omitted	2	9%
Medication or substance contraindicated	2	9%
Adverse reaction	1	4%
Incorrect/incomplete labeling	1	4%

Reported medication-related events originated at all stages—most frequently at administration, but also when prescribed, and when filled in the pharmacy (see Table 11 for a complete list). Hospitals developed a range of responses to adverse medication events, including changes to the role of the pharmacist in the facility. Five hospitals worked to prevent future events by using strong, system-level action plans including: increasing the pharmacist's role in reviewing and dispensing medication, stocking operating room medication drawers, and reviewing medication administration history for patients receiving narcotics. The example of an actual event report on page 29 highlights effective system-level action plans.

High-Alert Medications

High-alert medications—medications that pose greater risk to patients if used incorrectly—were involved in 17 of the 23 *Medication or other substance* events. These medications included, among others, blood thinners, six different narcotics, and insulin. In the narcotic-related events, the doses were within acceptable limits; however, too much medication was administered in light of the patient's health status or concurrent other medications that magnified the narcotic effects.

Table 11. *Medication or Other Substance* Events by Phase of Origin, 2012 (n=23)

Phase of Origin	Number	Percent
Administration	8	35%
Prescribing	6	26%
When filled in the pharmacy	4	17%
Monitoring	3	13%
Transcribing	2	9%

Five of the high-alert medication-related events involved one or more medications that depress breathing. Healthcare professionals focus intently on the patient's reason for hospitalization; unintended consequences of treatment, such as pain medications that depress breathing, may go unnoticed. Advances in technology help recognition of the respiratory depression that can result from medications. Serial tracings of oxygenation and carbon dioxide levels with pulse oximetry and capnography monitoring are becoming more common. In addition to specifying how and when a patient's respiratory status should be monitored, it is important for hospitals to assess these practice requirements. These assessments can show not only how well the practice is being implemented, but can also reveal any implementation challenges.

High-Alert Medication Resources

Oregon Patient Safety Commission
The Commission, working with a multidisciplinary group of healthcare professionals has developed recommendations for over sedation prevention in hospitals: *Statement on Preventing Harm from Oversedation in Adult Hospitalized Patients*

Institute for Safe Medication Practices (ISMP)
High-alert Medication Lists:

- Institutional and Inpatient Healthcare Settings
- Community/Ambulatory Healthcare
- Consumer Leaflets

A variety of resources are available to help hospitals identify high-alert medications and ensure that such drugs receive the careful handling needed to avoid patient harm (see box).

RECOMMENDATION

Evaluate high-alert medication practices and provide support to educate all staff related to any updates associated with the medications on the high alert medication list and to ensure compliance with all safety measures.

Dosage Miscalculations

Vancomycin, an antibiotic used to treat bacterial infections, was involved in three *Medication or other substance* events, two of which resulted from a mix-up in recording the patient's weight. In both events, the scales used to weigh the patients were calibrated in pounds but the medication dosing requirements were calculated in kilograms. Information was entered into the health record using pounds rather than kilograms, which resulted patients receiving the wrong dose of medication.

While only two of the reports submitted to the Commission involved this error, the issue is very significant for patient safety and, if unaddressed, can result in additional adverse events. In particular, pediatrics is an area where this issue may commonly occur, as dosing by weight is frequently required. However, weight-based medication dosing is becoming more common in both bariatric patients and underweight adults. Weighing all patients in kilograms can help to prevent dosage miscalculations like those reported to the Commission. Knowing weight in pounds is especially important to parents of newborns, but also to other patients. In these instances, hospitals can use conversion tables on weight charts to communicate weight information to patients and families, explaining that, for safety reasons, staff take and record all weights in kilograms.

RECOMMENDATION

Avoid dosage miscalculations caused by incorrect weights by using strong prevention strategies that include scales enabled only with kilograms and always measuring weight rather than relying on patient history.

Medication-Related Communications

In 14 (61%) of the *Medication or other substance* events, communication played a key role. Miscommunications often occurred across boundaries such as between shifts, across units, or across disciplines or specialties. Hospitals responded in various ways to communication-related adverse events. Action plans for events in which communication factors were prominent included developing huddles for registered nurses and pharmacists to discuss key patient issues, including physicians from different medical specialties in concurrent rounding on shared patients, and adding special alerts to electronic health records. (See the Communications section for more information about strengthening use of electronic health records and communication between healthcare professionals.)

Medication-related miscommunications highlight the importance of physicians, nurses, and pharmacists engaging patients as partners in developing an accurate medication list. In one 2012 event, a patient was discharged without a prescription because the medication listing in the electronic health record seemed to indicate the patient already had the prescription at home.

Specific attention must be given to communication during patient discharges and transitions in care—situations that create considerable opportunity for miscommunication and risk to patients. The medication reconciliation processes should ensure an accurate medication list at discharge through careful coordination and clear communication of the patient's medication history and hospital course. A variety of tools are available to help providers improve communication with patients to ensure medication safety (see box).

Patient-Oriented Tools to Improve Medication-Related Communications

Personal Medication Record

AARP

A tool to help patients understand and track medications, and ensure physicians and pharmacists have the most current patient information (available in English and Spanish)

Ask Me 3

National Patient Safety Foundation

A patient education program designed to improve communication between patients and health care providers, encourage patients to become active members of their health care team, and promote improved health

RECOMMENDATION

Provide patients with a list of current medications at discharge; review the list with the patient and explain any changes.

Adverse Event Report Example: Medication

This example contains an actual report received by the Commission and is a particularly strong example of effective system-level action plans (highlighted below). Report content has been modified to maintain confidentiality.

Complete account: Patient is a 45-year-old female diabetic with asymptomatic cholelithiasis who presented to the emergency room with fever and chills for 3 days and a right pannus abscess with tender, swollen area that is communicating all the way to the right flank as seen on CT scan. She lost a lot of weight because of poor appetite and not having eaten much in three days.

✓ Relevant clinical information

Patient initially received 2 g vancomycin IF|V in the ED along with other medications. Dosing was based on stated weight because pt was not in ED room with weight bed—unsure of reason—and it is not the practice to have a patient with a draining abscess walking in the hall, which would be necessary to access the wall scale.

✓ System-level contributing factors directly associated with the event

✓Sequence of actions and relevant surrounding circumstances/conditions

Upon ICU admit the patient was weighed at 15:46 with 218 lbs bed weight. The first vancomycin dose was administered at 16:55. There was no automatic notification that the ICU weight was different from the ED weight. She developed acute renal insufficiency due to the vancomycin dosing. ICU RNs noted climbing creatinine levels, checked the patient's documented weights, and noted the discrepancy. Vancomycin dosing was corrected and her creatinine had fallen by discharge.

✓ Relevant clinical information

✓ At least one relevant root cause identified

Cause 1: Dosing based on incorrect weight because the patient's stated weight used instead of measured weight. Actual patient weight should be a vital sign.

✓ Plans clearly link to the identified cause

Action Plan 1: Identify and address barriers to weigh every patient at every entry point. Need policy for weighing all patients in kilos. Policy needs to address scale calibration. Additional weight scales have been ordered. Stated weights will no longer be acceptable.

✓ Additional system-level action plans or action plans that fit the description of strong actions

A specific plan to purchase new scales and assure kilogram-only weights meets the criteria for a strong action plan since it will prevent inadvertent dosing based on pounds instead of kilograms. Adding EHR alerts that remind staff about kilogram weights is a weaker action plan that is subject to alert fatigue and work-arounds. Alerts would be an acceptable interim step while new scales are added but should not be the final action plan.

Cause 2: Different EHRs used in ED and ICU, which contributed to staff not noting weight discrepancies.

✓ Presence of additional root or proximal causes

✓ System-level solutions that decrease the likelihood of such events in the future

Action Plan 2: Establish a practice of comparing key findings and vital signs (including weight) during care transitions and assuring appropriate interventions occur—assessing accuracy, notification of pharmacy, etc. Need to move to awareness of the importance of accurate weights as well as the downstream implications. Informing staff whether or not patient was weighed in the ED is specifically required.

✓ Plans clearly link to the identified cause

Changing practice is a moderately strong action, especially if standardized and supported with checklists, structured handoff/shift reports or other means to ensure inclusion of the required information. The hospital in this example missed the opportunity to examine the discrepancy in electronic health records across the facility. Standardizing the EHR is a long-term action plan that is important for eliminating other adverse events that occur because of differing systems.

Care Delay

In last year's annual summary, we reported on *Care delay*—an event type developed by the Commission to better capture the many reports received over the life of the reporting program that describe circumstances leading to a delay in care, diagnosis, or treatment. We recommended that hospitals continue working to identify and report adverse events related to care delays. This year, *Care delay* was the fifth most frequently reported event type; over 9% (n=15) of the reports submitted to the Commission noted *Care delay*. When an event involves a delay in care that is not the primary reason for the event, it is considered a contributing factor rather than the event type. In 2012, an additional 25 reports of other event types indicated *Patient management: Response to changing condition/delay in care* as a contributing factor. In total, reports indicating a care delay represent 25% of all reports submitted in 2012 (40/160).

Reports indicating delays in care (either as an event type or contributing factor) resulted in serious patient harm more often than those that did not. Of the 40 care delay events, 38% resulted in patient death—a notable figure given that patient death occurred in 14% of all other events. Eighty-three percent of reports that indicated delays in care resulted in serious harm (categories F through I), while only 61% of reports that did not indicate a delay in care resulted in serious harm. In the 40 events involving delays in care, a delay in diagnosis or assessment predominated, with delays in treatment seen less frequently. Communication breakdowns played a role in the majority (78%) of care delay-related events (see Communications section page 10). The analysis suggests a variety of underlying causes including: misattribution, system process, missed signs/symptoms, and unrecognized risk.

> **Misattribution** of the patient's clinical picture played a role in events when the signs and symptoms a patient was initially exhibiting were interpreted incorrectly. Misattribution can often occur due to confirmation bias—the tendency to search for or interpret information in a way that confirms one's preconceptions. In one event, a patient suffered a delay in diagnosis of a stroke partially due to her young age—typically, young women do not have strokes. Obesity, mental/behavioral issues, and a history of alcohol abuse are other confirmation bias factors that may have contributed to delays in several events. TeamSTEPPS is one program that addresses confirmation bias (referred to as "strength of an idea"). Hospitals can use programs like TeamSTEPPS to help prevent adverse events that may be caused by confirmation bias.
>
> **Missed Signs/Symptoms** were present in events when nursing staff misread a patient's signs/symptoms and did not recognize the significance of patient complaints and physical condition. In several events, the problems stemmed from nursing staff (including resource nurses) being unfamiliar with the type of patient receiving care (e.g., treating patients not usually placed on the unit). Addressing missed signs/symptoms requires a culture of safety that allows staff to indicate gaps in their knowledge and provides an accessible resource for consultation. For example, have specialty nurses round on patients that are cared for on other units, establish a nurse consult service, make on-line decision support software available, or use a clinical nurse specialist as a resource.

System process problems occurred in some cases where system elements did not function correctly. In one event, the patient label on the fetal monitor was not replaced during the process for discharging one patient and admitting another, which resulted in the monitor tracings being discounted. In another instance, paging equipment that was well beyond the manufacturer's recommended use date was still in use, resulting in pages not being received. A third event involved the absence of a clear response process when the surgeon on call for emergencies was not available. The strongest, most effective method for preventing system process problems is to proactively identify needed improvements and strengthen systems using tools like the Healthcare Failure Mode Effects Analysis (HFMEA). Using a tool like HFMEA to examine processes, devices, software, and workspaces is a much stronger method of addressing system problems rather than attempting to change individual memory or vigilance.

Unrecognized risk was present in events when aspects of the situation were not identified as posing a risk. Recognizing risk in routine care is the opposite of complacency (noted earlier as one cause of adverse events). Recognizing risk is a hallmark of a strong patient safety culture. In the 2012 reports that demonstrated unrecognized risk, there was variation in the subtlety and circumstances of the risk—some were difficult to identify (e.g., risks related to patient assessment or circumstances) and some were more obvious (e.g., risks related to medical equipment and supplies).

Risk related to patient assessment or circumstances. In one event, a surgical patient had an epidural and was given anticoagulants postoperatively. (This event is described in more detail in our Action Alerts.) In another event, a patient with unidentified obstructive sleep apnea suffered a respiratory arrest after what should have been a routine procedure. Events like these could have been prevented through the use of stronger handoff techniques (like SBAR) and screening tools (see *Statement on Preventing Harm from Oversedation*) to help staff ensure that processes are done accurately each and every time.

Risk related to medical equipment and supplies. In one event, risks went unrecognized by a surgeon who cut a Raytec sponge in half and used the non-radio opaque section. In another event, an organizational decision placed an unused old examination table without side rails in the emergency department resulting in a patient fall.

Care delay is a particularly difficult issue to address, given the variation in underlying causes. One patient safety strategy—standardization—may be helpful in addressing care delays resulting from the different underlying causes. Standardization, identified by the Veterans Administration National Center for Patient Safety as a strong prevention strategy, is an effective action plan (see box). As with other actions, the operational strength of the plan relies on leadership support and follow-up. See the Resources section for tools on sustainability and spread of improvements.

Standardization

A process, piece of equipment, or care coordination that contains a mechanism/method that forces compliance to a regular, consistent, and routine action beyond written policy/procedure (VA National Center for Patient Safety, 2010)

Recognition Targets

The Oregon Patient Safety Commission has established recognition targets to guide healthcare organizations participating in the Patient Safety Reporting Program. Targets are designed to change each year as organizations build their reporting programs to meet the State of Oregon's reporting requirements (Oregon Revised Statute 442.820-442.835, Oregon Administrative Rules 325). Recognition targets are also designed to ensure that the Commission receives enough adverse event reports to build a strong database for learning and to recognize healthcare organizations for their transparency efforts and commitment to patient safety.

Each year, the Commission identifies leading participants and issues awards to the top performers based on established recognition targets. The Commission's website will identify all hospitals that meet or exceed recognition targets. Targets focus on the quantity, quality, and timeliness of reports submitted. Additionally, the Commission considers hospital compliance with state written notification requirements when awarding leading participants. For more information about the 2013 targets and the criteria for meeting or exceeding those targets, see the *Patient Safety Reporting Program 2013 Recognition Targets*.

Quantity

The Commission measures quantity as the number of reports submitted by a reporting program participant. Oregon hospitals submitted 160 adverse event reports in 2012. This is the highest number of annual reports submitted to date and aligns with the estimated number of reports the Commission expected to see for the year (156).

Table 12 provides a summary of reporting by hospital size. While the number of medium hospitals submitting reports increased to 81% in 2012 (from 56% in 2011), the number of small hospitals submitting at least one adverse event report decreased from 46% in 2011 to 35% in 2012. Of the 25 hospitals that did not submit a report, 2 were large, 3 were medium, and 20 were small.

Table 12. Report Submissions by Hospital Size, 2012

	Count of Hospitals			Count of Reports Submitted	
Hospital Size	Number that Reported	Participating Hospitals	Percent that Reported	Number	Percent
Large	9	11	82%	80	50%
Medium	13	16	81%	54	34%
Small	11	31	35%	26	16%
Total	**33**	**58**	**57%**	**160**	

Altogether, hospitals that submitted a report in 2012 accounted for 82% of Oregon's hospital discharges.[1] Of the hospitals that reported in 2012, large facilities represented 69% of Oregon's total discharges, while medium and small facilities represented 26% and 5%, respectively.

In 2011, the Commission established annual quantity targets for the first time. The targets are designed to increase the number of reports submitted each year to ensure that the Commission has enough adverse event reports to build a strong database for learning, and to recognize healthcare organizations for their transparency efforts and commitment to patient safety. The quantity target for 2012 was 285 reports—a request for 125 more reports than what hospitals actually submitted.[2]

Although hospitals are working to meet the Commission's quantity targets, the number of reports submitted annually falls short of the actual number of adverse events that may be occurring in Oregon each year. Classen et al. (2011) estimate that internal hospital reporting programs focused on voluntary reporting of adverse events by hospital personnel only capture around one percent of actual adverse events, far below the 90% captured by the Institute for Healthcare Improvement's Global Trigger Tool.

Quality

When reviewing submitted adverse event reports, the Commission uses the four Joint Commission criteria to determine if reports are of acceptable quality: complete, thorough, credible, and having effective action plan(s). When the reporting program began, facilities needed time to build reporting expertise and sophistication. The Commission developed a measurement system with this in mind. For the first five years of the program, a hospital needed a single point in each of the four criteria to be considered "Acceptable."

When the Commission moved to an online reporting system in 2011, facilities communicated a need for increased transparency and support around how the Commission evaluates report quality. In response, the Commission integrated a highly transparent quality scoring tool into the Patient Safety Reporting Program's (PSRP) online reporting tool (see Appendix IV). While the quality criteria remain the same, participants are required to earn specific points in each of the four criteria. Participants can now view their overall scores, how the points were attributed, and, when relevant, receive suggestions from their Patient Safety Consultant around how to improve.

In 2012, using the more transparent system for determining acceptable quality, only 64% of the reports submitted by hospitals were determined to be acceptable (see Table 13). If the old system of evaluation were still in place, 94% of 2012 reports would have been acceptable (the same proportion as 2011). The 2012 quality target for hospitals called for 100% of reports to be of acceptable quality—hospitals did not meet the quality target.

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[1] Based on Jan-Dec 2012 Grand Total Discharges data from the Office for Oregon Health Policy and Research and the Oregon DataBank Program.

[2] The Commission aimed to have a minimum of 200 reports submitted in 2011 in order to work toward the goal of having a minimum of 500 hospital reports submitted by 2015. The Commission calculates the quantity target for hospitals using discharge data provided by the Office for Oregon Health Policy and Research and the Oregon DataBank Program.

Table 13. Acceptable/Not Acceptable Adverse Event Reports by Hospital Size, 2012

Hospital Size	Acceptable	Percent	Not Acceptable	Percent	Total
Large	42	56%	33	44%	75
Medium	42	71%	17	29%	59
Small	19	73%	7	27%	26
Total	**103**	**64%**	**57**	**36%**	**160**

Identifying adverse events is only the first step in improving patient safety. Understanding why adverse events occur through identification of root causes and the development of effective action plans is critical. The majority of reports that were determined to be "Not Acceptable" fell short in the following areas: sequence of actions, relevant root cause, and system-level solutions.

Sequence of Actions

Providing a clear sequence of actions and relevant surrounding circumstances/conditions in a report's Complete Account is a critical element of adverse event reporting. This annual summary provides three adverse event report examples that contain strong Complete Accounts and can serve as a model for hospitals who have not received full credit for the completeness of their reports (see pages 17, 23, 29).

Relevant Root Cause

Adverse event reports should identify at least one relevant root cause—the most basic reason for why an adverse event occurred. Many reports uncover only surface-level contributing factors and not root causes. Failure to identify the relevant root cause(s) of an adverse event most often occurs because a hospital prematurely ends their investigation by not examining specific contributing factors more thoroughly. Once contributing factors have been identified, an organization must continue the investigation until the root cause(s) have clearly been identified. See Appendix IV for tips for identifying root causes and submitting a thorough report. Ultimately, a successful investigative process can provide meaningful information about root causes that can be translated into ongoing, system-level improvements.

System-Level Solutions

Action plans outline the steps an organization will take to prevent future adverse events and are a critical component of the root cause analysis. Many action plans do not effectively address the root cause(s) of an adverse event because they are focused on individual-level actions and not system-level actions. Strong and complete actions plans have a clear link to an event's root causes and contributing factors, are easily understood, and are more likely to be successful in achieving system-level changes. See Appendix IV for tips for developing an effective action plan.

High-quality reports play a vital role in the success of the Patient Safety Reporting Program. Reports that are complete, thorough, credible, and contain strong action plans have the greatest potential to contribute to shared learning across healthcare organizations. The PSRP reporting form is a tool that hospitals can use to guide event investigations and ensure that in-depth analysis provides valuable feedback for improving systems and preventing future adverse events.

Timeliness

After an adverse event, an immediate response is needed to collect full and reliable information on the circumstances surrounding the event. Timeliness is defined as the amount of time that passes between the date an event was discovered and the date a report is submitted to the Oregon Patient Safety Commission. The State of Oregon requires that hospitals submit a completed adverse event report within 45 calendar days of discovery of a reportable serious adverse event (Oregon Administrative Rules, 325-010-0025(3) (2006)). This standard promotes timely responses to adverse events in effort to reduce delays and aid the development of plans to prevent future events.

The Commission collects four pieces of time-related data for adverse events regardless of harm category: date event occurred, date event was discovered, date review team completed their investigation and analysis, and date report was submitted. These data points provide important information on a hospital's patient safety processes and highlight several noteworthy phases in the reporting timeline (described in more detail below):

- Event to discovery
- Discovery to review completion
- Review completion to report submission

The Commission also monitors the overall time between discovery and report submission. In 2012, the average time between event discovery and report submission for all reports was 72 days, which represents an improvement of more than a week over the average 2011 time of 80 days.[3] While just 40% of all reports were submitted within the 45 day requirement, the median time between event discovery and report submission in 2012 was 52 days, only one week beyond the required time limit. Although the median does not reflect the wide range of discovery to submission times, it does reflect the majority of reports submitted. To assist in understanding where the delays are occurring, we looked at each of the phases in the reporting process.

Time Between Event and Discovery

To some extent, this period reflects the robustness of a hospital's internal event identification and reporting system. If a hospital's patient safety culture is weak, providers and staff are less likely to report events or may delay the report. However, in some cases, a delay in discovery is a result of the nature of the event. For example, unintentionally retained objects may not be discovered for quite a while after hospitalization. Other events are often discovered when a hospital conducts chart reviews or uses the Global Trigger Tool. The Commission recognizes the vigilance of hospitals in identifying these types of cases and does not include them in calculations of the time between event and discovery.

Time Between Discovery and Review Completion

This period reflects the provider and staff commitment to patient safety as an aspect of their professional responsibilities. Difficulties in coordinating schedules or reluctance to participate in

[3] The range of discovery to submission times was 0-400 days, including two outliers that were not submitted for more than eight months after the event was discovered.

the reviews will lengthen this time. On rare occasions, the event is so complex and involves so many different departments that the investigation and review will take longer.

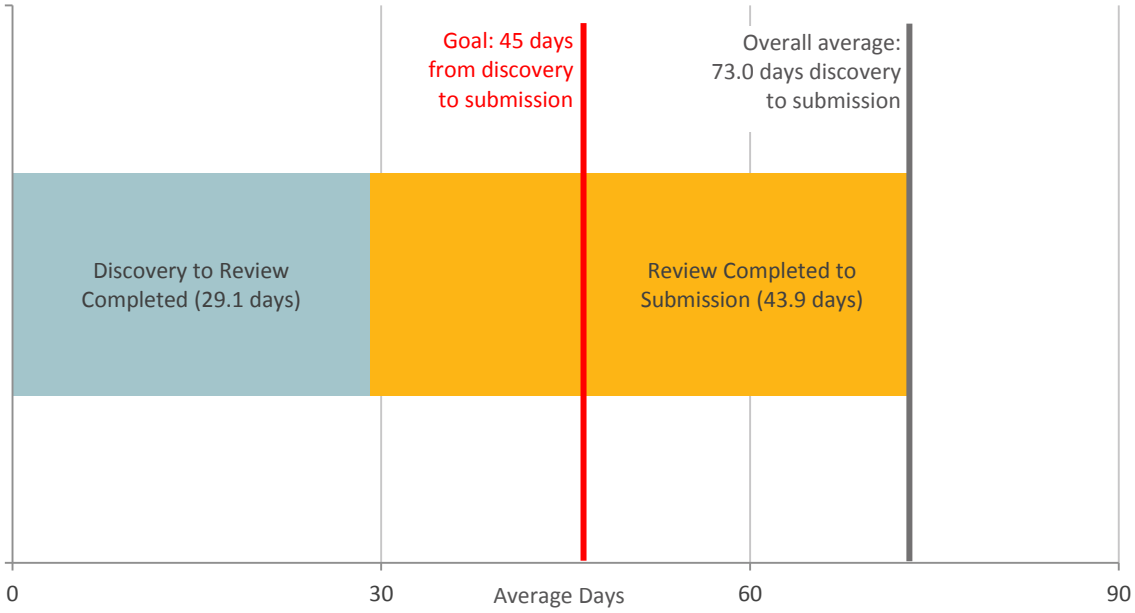
Prior to the release of the PSRP online reporting tool, hospitals were only required to report the review completion date for serious harm events (though some included the review completion date for less serious harm events as well). For the subset of reports that provided a completion date for their review and analysis process (n=127), the process took an average of 29 days to conduct and complete after the event was discovered.

Time Between Review Completion and Submission

This period of time reflects how well hospitals have integrated reporting into their patient safety processes. Once the review and analysis were complete, hospitals took an average 43.9 days to submit adverse event reports to the Commission.

For the subset of reports that provided a completion date for their review and analysis process (n=127), 60% (76/127) took longer than the State's 45-day timeliness standard to submit their reports (see Figure 7). Of those reports, timeliness delays occurred in both the discovery to review completion phase and the review completion to report submission phase.

Figure 7. Average Days Spent from Event Discovery to Report Submission, 2012 (n=127*)



* *Twenty-six reports are not included in these averages because they did not contain a date for review completed.*

Hospitals who have historically not met the State's timeliness standard could improve by making changes to allow for timelier event review and analysis or decrease the delays in report submission. The PSRP online tool helps to facilitate these processes by maximizing the use of checkboxes for data input and allowing multiple users to work on reports simultaneously. These features make it easier to collect all the necessary data in one place and work collaboratively.

To help hospitals move toward achieving the State of Oregon's timeliness standard, the Commission has established annual recognition targets for timeliness, which change each year as organizations build their reporting programs. In 2012, the Commission's recognition target for timeliness was for hospitals to submit 75% of all reports within 45 days of discovery. Only seven hospitals met the timeliness target for 2012 (see Table 14), but an additional eleven hospitals could have met the target had they submitted one more report within 45 days of event discovery.

Table 14. Achievement of Timeliness Target by Reports and Hospitals, 2012

	Reports (n=155)		**Hospitals** (n=33)	
	Number	**Percent**	**Number**	**Percent**
Met 2012 Target	62	40%	7	21%
Did Not Meet 2012 Target	93	60%	26	79%

Written Notification

The Oregon Patient Safety Commission strongly believes that all patients have a right to know about the serious adverse events that affect their lives (read the Commission's Position Statement on Written Notification). Adverse event disclosure is an appropriate practice for all physicians and healthcare organizations that provide care. The act of disclosing an adverse event can communicate to patients that the physician and larger healthcare organization are accountable for the care they provide and are strongly invested in quality care and maintaining the patient's trust. The Oregon Patient Safety Commission recommends that disclosure be made in the form of oral disclosure followed by written notification by physicians and healthcare organizations faced with an adverse event.

Oregon Administrative Rules require that hospitals provide written notification of reportable serious adverse events to the patient or patient's personal representative (OAR 325-010-0045). Hospitals are required to provide written notification for all events with a harm category of F, G, H, or I. Written notification is also required for any *Unintended retained foreign object*, *Incorrect patient surgery*, *Incorrect procedure surgery*, or *Incorrect site or side surgery* events, regardless of harm category. Additionally, the Oregon Patient Safety Commission encourages facilities to strongly consider providing written notification for harm category E events—events that may have contributed to or resulted in temporary harm to the patient but did not require a significant intervention.

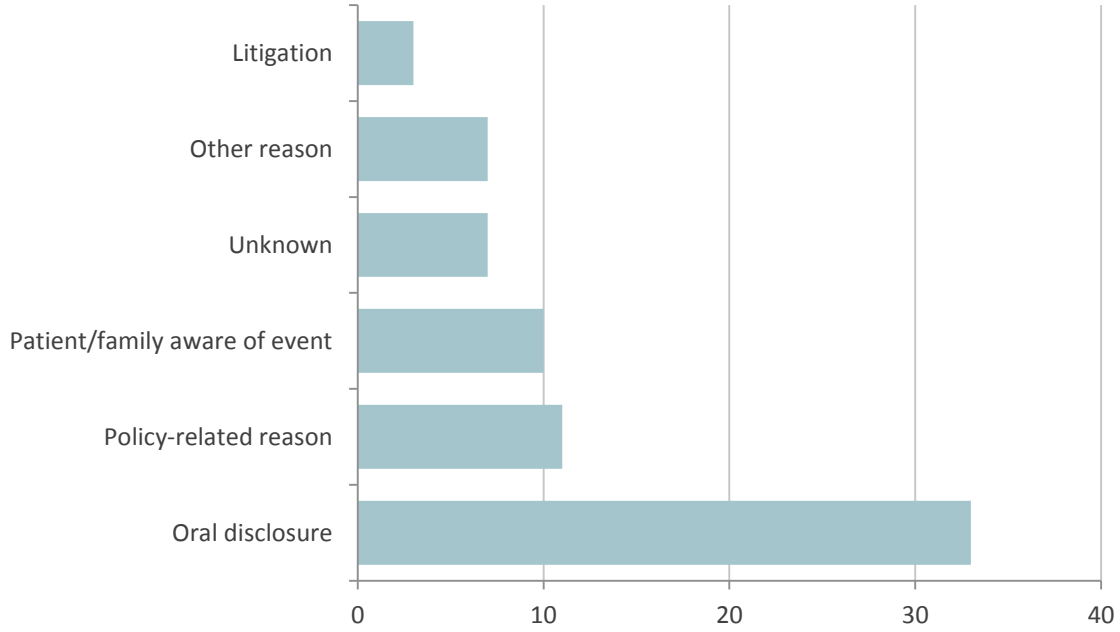
In 2012, hospitals submitted 116 reports of serious adverse events requiring written notification. In six cases, facilities were unable to provide written notification because the patient's caregivers felt it would have a detrimental effect or because the patient or patient's family could not be located. Of the remaining 110 events, 39 (35%) patients or their families received a letter from the hospital (see Table 15).

Table 15. Written Notification Completion When Required, 2012

	Number	Percent
Written Notification Provided or Pending	39	35%
Written Notification NOT Provided or Pending	71	65%

Of the adverse event reports where written notification was required but not provided (71/110, 65%), some reports provided reasons for not providing written notification (see Figure 8). The most common reason given for not providing written notification was that the hospital had provided oral disclosure, often through multiple conversations.

Figure 8. Primary Reason for Not Providing Written Notification, 2012



The State of Oregon requires that written notification be timely and consistent with internal communication policies of the hospital. Recognizing the significant difficulty many hospitals have had in meeting this requirement, the Commission has published the Oregon Adverse Event Disclosure Guide to serve as a resource for physicians and healthcare organizations.

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Resources

General

Comprehensive Unit-based Safety Program (CUSP), Johns Hopkins Center for Innovation in Quality Patient Care

Using a Comprehensive Unit-based Safety Program to Prevent HAI, Agency for Healthcare Research and Quality

Using Healthcare Failure Mode and Effects Analysis, VA National Center for Patient Safety

The Basics of Healthcare Failure Mode and Effect Analysis (videoconference course), VA National Center for Patient Safety

Failure Mode and Effects Analysis Tool, Institute for Healthcare Improvement

Oregon Adverse Event Disclosure Guide, Oregon Patient Safety Commission

Communication

Guide to Reducing Unintended Consequences of Electronic Health Records, Agency for Healthcare Research and Quality and Rand Corporation

Crucial Conversations, Vital Smarts

Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS), Agency for Healthcare Research and Quality

Falls

Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care, Agency for Healthcare Research and Quality

Morse Fall Scale, Agency for Healthcare Research and Quality

STEADI (Stopping Elderly Accidents, Deaths & Injuries), Centers for Disease Control and Prevention

STRATIFY, Agency for Healthcare Research and Quality

Timed Get up and Go Test, Centers for Disease Control and Prevention

Health Care Protocol: Prevention of Falls (Acute Care), Institute for Clinical Systems Improvement

Conduct Safety Briefings, Institute for Healthcare Improvement

HAI

Infection Prevention Collaboratives, Oregon Patient Safety Commission

Central Line Bundle, Institute for Healthcare Improvement

Oregon Model ASC Infection Prevention and Control Toolkit, Oregon Patient Safety Commission

Safety Cross and Safety Cross Guidelines, Oregon Patient Safety Commission

Medication

Statement on Preventing Harm from Oversedation in Adult Hospitalized Patients, Oregon Patient Safety Commission

High-alert Medication List for Institutional and Inpatient Healthcare Settings, Institute for Safe Medication Practices

High-alert Medication List for Community/Ambulatory Healthcare, Institute for Safe Medication Practices

High-alert Medication List: Consumer Leaflets, Institute for Safe Medication Practices

Personal Medication Record, AARP

Ask Me 3, National Patient Safety Foundation

Care Delay

Action Alerts, Oregon Patient Safety Commission

SBAR (Situation-Background-Assessment-Recommendation), Institute for Healthcare Improvement

Appendix I. Comparison of Patient Safety Reporting Program (PSRP) Events, Administrative Rules Appendix A, AHRQ's Common Formats, and NQF 2012 Update

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Air embolism	3C) Patient death or serious physical injury associated with intravascular air embolism that occurs while being cared for in a healthcare facility. *Excludes deaths associated with neurosurgical procedures known to present a high risk of intravascular air embolism.*	HERF 7j) Other	2C) Product or device: Patient death or serious injury associated with intravascular air embolism that occurs while being cared for in a healthcare setting. *Excludes death or serious injury associated with neurosurgical procedures known to present a high risk of intravascular air embolism*	Also a Medicare HAC (air embolism)
Anesthesia	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7h) Surgery or anesthesia (includes invasive procedure)	--	Covered by Appendix A's Other event.
Aspiration	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7j) Other	--	Covered by Appendix A's Other event.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Blood or blood product (including hemolytic reactions)	5B) Patient death or serious physical injury associated with a hemolytic reaction due to the administration of ABO-incompatible blood or blood products.	HERF 7a) Blood or blood product	4B) Care management: Patient death or serious injury associated with unsafe administration of blood products *Unsafe administration includes, but is not limited to, hemolytic reactions and administering: a) blood or blood products to the wrong patient; b) the wrong type; or c) blood or blood products that have been improperly stored or handled*	Also a Medicare HAC (blood incompatibility). While Appendix A defines this event as "hemolytic reaction," we will accept reports associated with any unsafe administration of blood products (covered under the "general" category in Appendix A).
Burn (unrelated to use or misuse of a device or medical/surgical supply)	6C) Patient death or serious physical injury associated with a burn incurred from any source while being cared for in a healthcare facility.	HERF 7j) Other	5C) Environmental: Patient or staff death or serious injury associated with a burn incurred from any source in the course of a patient care process in a healthcare setting *This event is intended to capture burns that result from: operating room flash fires, including second-degree burn in these cases; hot water; sunburn in the patient with decreased ability to sense pain; smoking in the patient care environment.*	Also a Medicare HAC (falls and trauma) While Appendix A defines this event as burns incurred from any source, we would like to focus on burns not associated with a product or device. Burns associated with a product or device will still be collected under "device or medical/ surgical supply (including use error)."
Care delay (including delay in treatment, diagnosis)	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7j) Other	--	Covered by Appendix A's Other event.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Contaminated drugs, devices or biologics	3A) Patient death or serious physical injury associated with the use of contaminated drugs, devices, or biologics provided by the healthcare facility. *Includes generally detectable contaminants in drugs, devices, or biologics regardless of the source of contamination and/or product.*	HERF 7j) Other	2A) Product or device: Patient death or serious injury associated with the use of contaminated drugs, devices, or biologics provided by the healthcare setting *Includes contaminants in drugs, devices, or biologics regardless of the source of contamination and/or product* *Includes threat of disease that changes patient's risk status for life requiring medical monitoring not needed before the event*	
Contaminated, wrong or no gas given to a patient	6B) 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.	HERF 7j) Other	5B) Environmental: Any incident in which systems designated for oxygen or other gas to be delivered to a patient contains no gas, the wrong gas, or is contaminated by toxic substances	Appendix A defines this event as wrong or contaminated gas only, but we will also accept reports of no gas, covered by the General category in Appendix A. Reportable regardless of patient harm.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Device or medical/surgical supply (including use error)	3B) Patient death or serious physical injury associated with the use or function of a device in patient care in which the device is used or functions other than as intended or is difficult to use as intended. *Includes but is not limited to, catheters, drains and other specialized tubes, infusion pump, and ventilators*	HERF 7b) Device or medical/surgical supply, including HIT	2B) Product or device: Patient death or serious injury associated with the use or function of a device in patient care, in which the device is used or functions other than as intended *Includes, but is not limited to, catheters, drains, and other specialized tubes, infusion pumps, ventilators, and procedural and monitoring equipment.* *Intended to capture occurrences whether or not the use is intended or described by the device manufacturers' literature*	
Discharge or release of a patient of any age, who is unable to make decisions, to an unauthorized person	4A) Infant discharged to the wrong person	HERF 7j) Other	3A) Patient protection: Discharge or release of a patient/ resident of any age, who is unable to make decisions, to other than an authorized person	Appendix A limits this event to infants discharged to the wrong person. We have broadened to discharge or release of any person, both in keeping with NQF, and to better align the reporting segments (hospital, ASC, nursing home). Discharges of older people to unauthorized persons would be covered under the General event in Appendix A. Reportable regardless of patient harm.
Electric shock	6A) Patient death or serious physical injury associated with an electric shock while being cared for in a healthcare facility.	HERF 7j) Other	5A) Environmental: Patient or staff death or serious injury associated with an electric shock in the course of a patient care process in a healthcare setting	Also a Medicare HAC (falls and trauma)

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Elopement	4B) Patient death or serious physical injury associated with patient elopement (disappearance) for more than four hours. *Excludes events involving competent adults*	HERF 7j) Other	3B) Patient protection: Patient death or serious injury associated with patient elopement (disappearance) *Includes events that occur after the individual presents him/herself for care in a healthcare setting.* *Excludes events involving competent adults with decision-making capacity who leave against medical advice or voluntarily leave without being seen.*	
Failure to follow up or communicate laboratory, pathology, or radiology test results	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury 5E) Death or serious physical injury (kernicterus) associated with failure to identify and treat hyperbilirubinimia [sic] in neonates *Hyperbilirubinimia [sic] is defined as bilirubin levels >30 mg/dl.* *Neonates refers to the first 28 days of life.*	HERF 7j) Other	4I) Care management: Patient death or serious injury resulting from failure to follow up or communicate laboratory, pathology, or radiology test results *Includes events where failure to report increased neonatal bilirubin levels result in kernicterus.*	Covered by Appendix A's General event and includes hyperbilirubinemia. NQF now considers hyperbilirubinemia to be the result of a failure to communicate test results
Fall	6D) Patient death or serious physical injury associated with a fall while being cared for in a healthcare facility.	HERF 7c) Fall	4E) Care management: Patient death or serious injury associated with a fall while being cared for in a healthcare setting	Also a Medicare HAC (falls and trauma). Also addressed in NQF's list of recommended safe practices.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Healthcare-associated infection (HAI)	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7d) Healthcare-associated Infection	--	Covered by Appendix A's General event. NQF addresses CLABSI, CAUTI, SSIs and "care of the ventilated patient" in its list of recommended safe practices.
Health Information Technology (HIT)	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7b) Device or medical/surgical supply, including HIT	--	Although Appendix A does not include HIT in this category, we would like to be more inclusive and align with Common Formats. HIT events would be covered under General in Appendix A.
Irretrievable loss of an irreplaceable biological specimen	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury		4H) Care management: Patient death or serious injury resulting from the irretrievable loss of an irreplaceable biological specimen *Includes events where specimens are misidentified, where another procedure cannot be done to produce a specimen.* *Includes progression of an undiagnosed disease or threat of disease that changes the patient's risk status for life, requiring monitoring not needed before the event*	Covered by Appendix A's General event.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Maternal	5C) Maternal death or serious physical injury associated with labor or delivery in a lowrisk pregnancy while being cared for in a healthcare facility. *Excludes deaths from pulmonary or amniotic fluid embolism, acute fatty liver of pregnancy or cardiomyopathy*	HERF 7f) Perinatal	4C) Care management: Maternal death or serious injury associated with labor or delivery in a low-risk pregnancy while being cared for in a healthcare setting *Includes events that occur within 42 days post-delivery* *Excludes deaths from pulmonary or amniotic fluid embolism, acute fatty liver of pregnancy, or cardiomyopathy*	
Medication or other substance	5A) Patient death or serious physical injury associated with a medication error (e.g., errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation or wrong route of administration). 5D) Patient death or serious physical injury associated with hypoglycemia, the onset of which occurs while the patient is being cared for in a healthcare facility.	HERF 7e) Medication or other substance	4A) Care management: patient death or serious injury associated with a medication error (e.g., errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation, or wrong route of administration)	NQF also addresses contrast media induced renal failure, anticoagulation therapy, medication reconciliation and glycemic control in NQF's list of recommended safe practices. NQF now considers hypoglycemia to be the result of a medication error and should be reported as such. Also a Medicare HAC (manifestations of poor glycemic control). Also addressed (glycemic control) in NQF's list of recommended safe practices.
Perinatal	5H) Any perinatal death or serious physical injury unrelated to a congenital condition in an infant having a birth weight greater than 2500 grams.	HERF 7f) Perinatal	4D) Care management: Death or serious injury of a neonate associated with labor or delivery in a low-risk pregnancy	

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Pressure ulcer	5F) Stage 3 or 4 pressure ulcers acquired after admission to a healthcare facility *Excludes progression from Stage 2 to Stage 3 if Stage 2 was recognized upon admission*	HERF 7g) Pressure ulcer	4F) Care management: Any Stage 3, Stage 4, and unstageable pressure ulcers acquired after admission/ presentation to a healthcare setting *Excludes progression from Stage 2 to Stage 3 if Stage 2 was recognized upon admission and excludes pressure ulcers that develop in areas where deep tissue injury is documented as present on admission/ presentation*	Also a Medicare HAC (stage III and IV pressure ulcers). Also addressed in NQF's list of recommended safe practices.
Radiologic	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury	HERF 7j) Other	6A) Radiologic: Death or serious injury of a patient or staff associated with the introduction of a metallic object into the MRI area	Covered by Appendix A's General event. NQF will likely add "Patient death or serious injury associated with prolonged fluoroscopy with cumulative dose >1500 rads to a single field or any delivery of radiotherapy to the wrong body region or 25% above or below the planned radiotherapy dose" to its list of serious reportable events in a future update. Currently, delivery of radiotherapy to the wrong region of the body is a wrong site procedure. Also addressed (pediatric imaging) in NQF's list of recommended safe practices.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Restraint or bed rail related	6E) Patient death or serious physical injury associated with the use of restraints or bedrails while being cared for in a healthcare facility.	HERF 7j) Other	5D) Environmental: Patient death or serious injury associated with the use of physical restraints or bedrails while being cared for in a healthcare setting *Intended to capture instances where physical restraints are implicated in the death, e.g., lead to strangulation/ entrapment, etc.*	
Suicide or attempted suicide	4C) Patient suicide, or attempted suicide resulting in serious physical injury, while being cared for in a healthcare facility *Defined as events that result from patient actions after admission to a healthcare facility* *Excludes deaths resulting from self-inflicted injuries that were the reason for admission to the healthcare facility*	HERF 7j) Other	3C) Patient protection: Patient suicide, attempted suicide, or self-harm that results in serious injury, while being cared for in a healthcare setting *Includes events that result from patient actions after they present themselves for care in a healthcare setting*	

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	2A) Surgery performed on the wrong body part) *Defined as any surgery performed on a body part that is not consistent with the documented informed consent for that patient.* *Surgery includes endoscopies and other invasive procedures.*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	1A) Surgical: Surgery or other invasive procedure performed on the wrong site *Defined as any surgery or other invasive procedure performed on a body part or site that is not consistent with the correctly documented informed consent for that patient.* *Includes surgery or other invasive procedure on the right body part but on the wrong location/site on the body; e.g., left/right (appendages/organs), wrong digit, level (spine), stent placed in wrong iliac artery, steroid injection into wrong knee, biopsy of wrong mole, burr hole on wrong side of skull; delivery of fluoroscopy or radiotherapy to the wrong region of the body; use of incorrectly placed vascular catheters; use of incorrectly placed tubes (for example, feeding tubes placed in the lung or ventilation tubes passed into the esophagus).*	Under surgical event type in PSRP. Also addressed in NQF's list of recommended safe practices. Reportable regardless of patient harm.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	2B) Surgery performed on the wrong patient *Defined as any surgery on a patient that is not consistent with the documented informed consent for that patient.* *Surgery includes endoscopies and other invasive procedures.*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	1B) Surgical: Surgery or other invasive procedure performed on the wrong patient *Defined as any surgery or invasive procedure on a patient that is not consistent with the correctly documented informed consent for that patient* *Includes surgical procedures (whether or not completed) initiated on one patient intended for a different patient*	Under surgical event type in PSRP: Also addressed in NQF's list of recommended safe practices. Reportable regardless of patient harm.
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	2C) Wrong surgical procedure performed on a patient. *Defined as any procedure performed on a patient that is not consistent with the documented informed consent for that patient.* *Surgery includes endoscopies and other invasive procedures*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	1C) Surgical: Wrong surgical or other invasive procedure performed on a patient *Defined as any surgical or other invasive procedure performed on a patient that is not consistent with the correctly documented informed consent for that patient.* *Surgery or other invasive procedure includes, but is not limited to, endoscopies, lens implants, lesion removal, injection into joints.*	Under surgical event type in PSRP: Also addressed in NQF's list of recommended safe practices. Reportable regardless of patient harm.
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	1B) Postoperative nausea that requires hospital admission *This includes both immediate post-operative and post-discharge hospital admission for symptoms of nausea within 24 hours.*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	--	Under surgical event type in PSRP: Reportable regardless of patient harm.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	1D) Immediate postoperative bleeding that requires surgical treatment in the operating room (before discharge) *Includes all postoperative bleeding following the procedure and/or anesthesia that requires surgical treatment prior to discharge.*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	--	Under surgical event type in PSRP: Reportable regardless of patient harm.
Surgical or other invasive procedure (including incorrect site, incorrect patient and, incorrect procedure)	2E) Intraoperative or immediately postoperative death in an ASA Class I patient. (ASA is the American Society of Anesthesiologists. Class I means a healthy patient, no medical problems.)	HERF 7h) Surgery or anesthesia (includes invasive procedures)	1E) Surgical: Intraoperative or immediately postoperative/ post-procedure death in an ASA Class 1 patient *Includes all ASA Class I patient deaths in situations where anesthesia was administered; the planned surgical procedure may or may not have been carried out.* *Immediately post-operative means within 24 hours after surgery or other invasive procedure was completed or after administration of anesthesia (if surgery/procedure not completed).*	Under surgical event type in PSRP:
Unintended retained foreign object	2D) Retention of a foreign object in a patient after surgery or other procedure *Excludes objects intentionally implanted as part of a planned intervention and objects present prior to surgery that were intentionally retained.*	HERF 7h) Surgery or anesthesia (includes invasive procedures)	1D) Surgical: Unintended retention of a foreign object in a patient after surgery or other invasive procedure *Includes medical or surgical items intentionally placed by provider(s) that are unintentionally left in place*	Also a Medicare HAC (foreign object retained after surgery) Reportable regardless of patient harm.

PSRP	Admin. Rules Appendix A	AHRQ Common Formats	NQF 2011 Update	Note
Medication or other substance event	4C) Patient death or serious physical injury associated with hypoglycemia, the onset of which occurs while the patient is being cared for in a healthcare facility.	HERF 7h) Surgery or anesthesia (includes invasive procedures)	4A) Care management: patient death or serious injury associated with a medication error (e.g., errors involving the wrong drug, wrong dose, wrong patient, wrong time, wrong rate, wrong preparation, or wrong route of administration)	
Other	1) Any unanticipated, usually preventable consequence of patient care that results in patient death or serious physical injury *Any unanticipated, usually preventable event that results in serious physical injury, even if the harm is temporary.* *Only events that are not related to the natural course of the patient's illness or underlying condition.* 5G) Patient death or serious physical injury due to spinal manipulative therapy.	HERF 7j) Other	--	NQF retired *Spinal manipulative therapy* completely.

Appendix II. Harm Categories in Reported Adverse Events

The following table presents all harms reported in 2012 (n=160) by event type according to harm categories from the National Coordinating Council for Medication Error Reporting and Prevention.

						Serious Harm					
Event Type	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**Total**	**Percent**
Air embolism							1			1	1%
Anesthesia			1	1			1			3	2%
Blood or blood product			1	1						2	1%
Care delay						2	4		9	15	9%
Contaminated drugs, devices or biologics					1					1	1%
Device or medical/surgical supply				2		2		1		5	3%
Elopement				1						1	1%
Failure to follow up test results									1	1	1%
Fall					5	12	2		2	21	13%
Healthcare-associated infection				1	5	6			4	16	10%
Irretrievable loss of an irreplaceable biological specimen				2						2	1%
Medication or other substance	1			6	2	6			8	23	14%
Other event		2		3	1	4	1	1	2	14	8%
Perinatal	2						1		2	5	3%
Pressure ulcer						1	12			13	8%
Radiologic		1				1				2	1%
Restraint or bedrail related				1						1	1%
Suicide or attempted suicide			1			2		2	2	7	4%
Surgical or other invasive procedure			3	3	2	3	5	1	2	19	11%
Unintended retained foreign object			2	3		9				14	8%
Total	**3**	**3**	**8**	**24**	**16**	**48**	**27**	**5**	**32**	**166**	
Percent of total events (n=166)	**2%**	**2%**	**5%**	**14%**	**10%**	**29%**	**16%**	**3%**	**19%**		

Appendix III. TeamSTEPPS Communication Factors and Definitions

The following are TeamSTEPPS factors for understanding common communication breakdowns.

TeamSTEPPS Factor	Definition
Excessive professional courtesy	Giving someone of higher rank or status too much respect or deference so that it affects the level of healthcare they receive; may also occur among team members having higher rank or status, resulting in a hesitancy of team members to point out deficiencies in performance
Halo effect	Occurs when someone else's "great" reputation or extensive experience clouds our judgment
Passenger syndrome	Team members experience “passenger syndrome” (“just along for the ride”) when they abdicate responsibility because they believe someone else is in charge
Hidden agenda	When a team member makes suggestions or decisions on information or desires of which the remainder of the team may be unaware; an example of hidden agenda is a person’s strong desire to get off work early or avoid a procedure in which they are poorly trained
Complacency	When individuals and/or teams become comfortable with the most routine to the most difficult or critical tasks; becomes a hazard when individuals and teams lose their vigilance and situation awareness
High risk phase	A procedure or time in which a medical mishap is likely to happen (e.g., shift change)
Task (target) fixation	A condition in which an individual’s and/or team’s focus on a task may impair their decision-making or make them oblivious to “the big picture;” it is generally precipitated by a real or perceived pressure to perform, or by workload/stress related issues
Strength of an idea	An unconscious attempt to make available evidence fit a preconceived situation. Once people get certain ideas in their heads, it can be difficult or impossible for them to alter that idea regardless of how much conflicting information is received
Hazardous attitudes	Ways of thinking and viewing the world (e.g., anti-authority, impulsiveness, invulnerability, machismo, or resignation)

Agency for Healthcare Research and Quality. (2008). TeamSTEPPS Fundamentals Course, Module 1: Introduction. Rockville, MD.

Appendix IV. Quality Criteria

Reports submitted to the Commission are evaluated for acceptable quality by program consultants with the intent of supporting healthcare organizations in conducting in-depth investigations that focus on prevention of future events. Acceptable quality is determined using four criteria: complete, thorough, credible, and having effective action plan(s) (as outlined in OAR 325-010-0035). An asterisk (*) indicates a quality measure that is required for a report to meet the acceptable quality criteria. The following information describes the characteristics of the criteria, how they are measured, and where the applicable information is located in the reporting form.

Complete

Report provides all information pertinent to understanding what happened

Characteristics of Complete Investigations	Quality Measures	Applicable Report Information
• Provides information pertinent to understanding what happened • Provides only clinical information that is relevant to understanding the event	☐ Sequence of actions and relevant surrounding circumstances/ conditions* ☐ Relevant clinical information	**All Tabs** • Pertinent fields **Summary Tab** • Complete account

Tips for Submitting a Complete Report

In the Summary Tab's *Complete account*, summarize the sequence of activities and circumstances leading up to the event in a way that someone unfamiliar with the event could easily understand. Include decisions and other rationale that influenced the occurrence of the event.

Thorough

Report represents an analysis that considered system-level contributing factors and identified root cause(s)

Characteristics of Thorough Investigations	Quality Measures	Applicable Report Information
• Identifies the factors most directly associated with the event and the related process(es) and systems • Does not focus on individual performance • Identifies risks and their potential contributions to the event • Analyzes the underlying systems through a series of why questions to determine where changes might reduce risk	☐ System-level contributing factors directly associated with the event* ☐ At least one relevant root cause identified* ☐ Presence of additional root or proximal causes	**Contributing Factors Tab** • All **Summary Tab** • *Complete account*† • Cause(s) • Is this a root cause?

† Although the quality measures for a thorough report are not specifically found in the *Complete account*, the *Complete account* may include information that supports or explains identified contributing factors and causes.

Tips for Submitting a Thorough Report

- **Use the Five Whys** – Continue to ask "why"—until it is no longer reasonable—to uncover the contributing factors and root causes of an event.[4]
- **Clearly show a cause and effect relationship** – Ask, if you eliminate this cause, will you minimize/prevent future events?
- **Identify the preceding causes, NOT the "human error" or potential policy/procedure violations** – Seek to understand why a "human error" or mistake was made or why a policy/procedure was not followed.

Credible

Report contains evidence that the investigation included leadership participation and was internally consistent

Characteristics of Credible Investigations	Quality Measures	Applicable Report Information
• Includes participation by leadership and by the individuals most closely involved in the processes and systems • Is internally consistent; i.e., does not contradict itself or leave obvious questions unanswered	☐ Participation by senior management either through notification of individual/aggregate events, as a member of review team, or in a post-review briefing (only for serious harm events; i.e., F, G, H, and I) ☐ Less than four inconsistencies*	**Review Tab** • Who was notified of the event? • Did the review and analysis team have a post-analysis briefing with senior management? **Summary Tab** • All

Tips for Submitting a Credible Report

- Leadership review of aggregate information satisfies the criteria for participation by senior management (e.g., review of aggregate quarterly event data or report)
- Ensure there is a clear and logical connection between the major components of the report; e.g., the *Complete account*, *Contributing factors*, *Causes*, and *Action plans*

[4] Additional information on using the five whys is available at http://www.institute.nhs.uk/creativity_tools/creativity_tools/identifying_problems_-_root_cause_analysis_using5_whys.html

Action Plans

Report includes system-level plans that address identified causes and are likely to decrease the risk of future occurrence

Characteristics of Effective Action Plans	Quality Measures	Applicable Report Information
• Identifies potential improvements in processes or systems that would tend to decrease the likelihood of such events in the future • Does not focus on individual performance	☐ A system-level action plan that decreases the likelihood of such events in the future*† ☐ Additional system-level action plans or action plans that fit the description of stronger actions† ☐ Plans clearly link to the identified cause	**Summary Tab** • *Cause(s)* †† • Action plan(s)

There may be cases where no strong action plans are found since the root cause(s) could not be found. If the report shows a thorough investigation then points may be awarded for action plans.

† Based on the VA National Center for Patient Safety's root cause analysis tools, *Recommended Hierarchy of Actions*. The VA categorizes action plans into three categories based on their likelihood of reducing vulnerability: stronger, intermediate, and weaker. **http://www.patientsafety.gov/CogAids/RCA/index.html#page-14**

†† Although the quality measures for action plans are not specifically found in the *Cause(s)*, the link between action plans and identified causes will be evaluated.

Tips for Developing an Effective Action Plan

Develop action plans that:

- Address the identified root cause(s)/contributing factors
- Focus on systems, not on individuals
- Are specific and concrete
- Include stronger actions, which are more likely to eliminate or greatly reduce the likelihood of an event. Stronger actions do not depend on staff to remember to do the right thing. Although strong actions may not totally eliminate the vulnerability, they provide very strong controls (i.e., system fixes). See the following page for additional information on stronger, intermediate, and weaker action plans.

Stronger, Intermediate, and Weaker Action Plans

Stronger Action Plans	Actions that do not depend on staff to remember to do the right thing; the action may not totally eliminate the vulnerability but provides very strong controls (uses system fixes)	• Simplify the process and remove unnecessary steps • Standardize equipment or process • Tangible involvement and action by leadership in support of patient safety • Forcing functions† • New device with usability testing before purchasing • Architectural/physical plant changes
Intermediate Action Plans	Actions are somewhat dependent on staff remembering to do the right thing, but they provide tools to help staff to remember or to promote clear communication	• Increase in staffing/decrease workload • Software enhancements/modifications • Eliminate/reduce distractions • Checklist/cognitive aid • Eliminate look-alikes and sound-alikes • Read back • Independent verification • Enhanced documentation/communication • Redundancy
Weaker Action Plans	Actions depend on staff to remember their training or remember what is written in the policy	• Training/education • Additional study/analysis • New policy/memorandum • Double checks • Warnings and labels

Weaker action plans alone DO NOT meet the acceptable quality criteria

The VA National Center for Patient Safety's root cause analysis tools. Available at: http://www.patientsafety.gov/CogAids/RCA/index.html#page-14

† An aspect of a design that prevents an unintended or undesirable action from being performed or allows its performance only if another specific action is performed first (e.g., a single dose vial)