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Incident Reporting: More Attention to the Safety Action Feedback Loop, Please

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Perspective

Virtually all US hospitals have incident reporting systems.(1) In fact, although public attention to patient safety is a recent phenomenon, hospital reporting systems have existed for more than 40 years. Risk managers developed these systems to identify injuries that might lead to litigation and to reduce the number of patients being harmed.(2) Despite their ubiquity, questions about the effectiveness of incident reporting systems remain, and are particularly germane given our increasing focus on patient safety. The question arises: How can we modernize historical reporting systems so that they become more effective tools for advancing patient safety today? In this commentary, I argue that the highest priorities should include ensuring that providers know when incident reporting has led to improvements in safety, making the best possible use of the information that is reported, involving physicians in reporting, and leveraging the unique advantages of the 84 newly established Patient Safety Organizations (PSOs).(3-4)

Underreporting has previously been recognized as the major limitation of incident reporting. Of the adverse events and errors that occur in hospital settings, reporting systems capture fewer than 10%.(5) Providers have offered several explanations for failing to report through the incident reporting system: The time required, concerns that reports will be used in performance evaluations or litigation, uncertainty about what to report, and doubts about whether hospitals use reports to improve safety.(6-7) Some hospitals have reduced these barriers by developing efficient electronic reporting interfaces, excluding reported information from performance reviews, improving safety culture, and focusing on errors rather than adverse events. The possibility that reports might be disclosed during litigation is real and varies by state (8); however, reports submitted to the PSOs have federal protection.(3)

While removing these barriers is likely to increase the use of reporting systems, increasing the absolute number of reports has been overemphasized. First, it seems implausible that reports could ever accurately reflect the true incidence of patient safety events. To do so, tremendous increases in reporting would be

needed, and providers often don't even recognize when errors have occurred. For measuring the actual incidence of safety events, other detection methods are more sensitive, including reviewing medical records or applying patient safety indicators to discharge data.(5,9) Second, increasing reporting rates would be subject to the law of diminishing returns. Most hospitals already receive thousands of reports per year. Several-fold more would equate with substantially greater expenditures of staff time spent on reviewing and following-up.(10) Many reports describe similar events and contain redundant information.(11) Consequently, efforts to modernize reporting practices should focus more on ensuring that priority events are captured and that reports convey information useful to improving safety than on simply increasing the number of reports.

What types of events are priorities for reporting? Although this point could be debated at length, situations that have previously caused severe harm should clearly be priorities. Reporting preventable events will advance safety more than reporting non-preventable ones. In addition, a hospital that is tackling a particular safety problem could list specific events as short-term priorities, and update this list as existing problems are mitigated and new ones emerge.

In terms of capturing priority events, today's incident reporting systems, unfortunately, provide a skewed view of safety hazards; 50% to 80% of reports are made by nurses, who consider reporting to be one of their duties. Consequently, many reports address issues pertinent to nursing care, such as medication administration errors, falls, IV infiltrations, and pressure sores. Pharmacists, clerks, respiratory technicians, and other non-physician providers are also involved in reporting to some degree. Physicians file only 1%–3% of incident reports.(10,12) Thus, incident reporting is most useful for improving hospital systems and care by hospital employees. The problem is that, in a landmark study of adverse events in hospitals, 94% of the events involved physician care.(13) Although physician quality and safety issues, such as diagnostic and treatment errors, are currently addressed through morbidity and mortality conferences and hospital credentialing procedures, many adverse events are multidisciplinary in nature. Future incident reporting systems should place a greater emphasis on multidisciplinary team care, including physician care, and involve physicians in reporting, to be most effective at preventing adverse events.

Another way to modernize reporting is ensure that reports contain the information that end users need to improve safety. To facilitate efforts to compile and index events across institutions, AHRQ has posted standardized reporting forms and definitions on its Web site. Several types of events, such as falls and peri-partum incidents, have dedicated forms with checkboxes that prompt reporters for specific details.(4) Computerized reporting systems generally function in a similar fashion.

In addition, analysts at both the hospital and national levels need information that enables them to prioritize incidents, understand whether they were preventable, identify contributing system and human factors, and develop strategies for preventing recurrences. The best source of this information is a detailed narrative written by a first-hand witness; indeed, this is the *fundamental tenet* of incident reporting.(14) While checkboxes and drop-down menus can document a problem with equipment, for example, they cannot reveal that two pre-filled syringes from a certain manufacturer are easily confused. Most reporting interfaces do provide space for narratives, but providers probably need more guidance in how to write them. In one study based at two hospitals, a third of report narratives provided insufficient information to

determine preventability or identify contributing system and human factors. Narratives that focused on errors conveyed these details much more frequently than narratives addressing harms to patients.(12,15-16) The penultimate phase of the incident reporting process entails reviewing the narrative, conducting an investigation (such as by a root cause analysis), and combining information from these and other sources to improve safety within that hospital or across multiple institutions, through reporting to the PSOs.

The final phase includes updating the original reporter and alerting relevant providers when reporting prompts specific improvements in safety. Researchers have called this phase the "safety action feedback loop" (17), but some nurses have called it a "black hole."(7) The nurses' perception reveals that the feedback loop can function in an inhibitory or stimulatory manner. The actions that hospital leaders take in response to reports teach providers whether the time and risks of reporting are balanced by potential benefits to future patients. Therefore, the safety feedback loop is vital to the effectiveness of incident reporting. Unfortunately, we know very little about how, or how well, feedback loops function in typical hospitals. In a recent systematic review, the authors examined about 2000 studies on incident reporting but found only 13 US reporting systems for which publications described a feedback mechanism.(17) A national survey of risk managers found that most hospitals could do a better job of communicating incident report information to hospital staff, key administrative departments, and boards of directors.(1)

Anecdotally, hospitals with particularly strong commitments to safety use reporting as just one of multiple strategies for soliciting input from providers about safety hazards, and integrate incident reporting with other quality improvement activities.(18) Walk rounds by senior leaders and members of the board of directors identify risks that providers have not reported and convey a commitment to safety. The senior leadership defines what the safety culture should look like, seeks out new safety technologies and practices, allocates financial resources to support safety interventions, solicits input from frontline providers when implementing changes, and recognizes that changes create new risks. Importantly, the safety leaders convey the nature and scope of these activities to hospital staff and physicians through multiple means, such as through electronic newsletters, continuing medical education, links placed on frequently used clinical Web sites, and other forums. Information is presented in a manner that is clear and meaningful to front-end providers, gets their attention, provides a rationale for any changes, conveys when reporting led to these changes, and highlights the providers' vital role in safety.(19) Thus, the safety action feedback loop is particularly developed at these institutions.

Additional research on the safety action feedback loop would be valuable, but leaders wishing to improve the loop in their own institutions now may find a variety of resources helpful. AHRQ is developing a standard format for performing root cause analyses. Some authors have described hospital incident reporting systems with feedback loops that have been successful at improving safety.(10,17,18) A panel of incident reporting experts from several different industries and nations recently described five complementary kinds of feedback.(17) With regards to implementing changes based on reported information, human factors experts consider alterations to equipment, the physical environment, and staffing patterns to be more robust than developing new policies or training staff.(20) Last, individual hospitals need not develop their own systems and components themselves. A major purpose of the PSOs is to provide toolkits, guidance, and many other resources.

In conclusion, incident reporting systems are nearly universal in hospitals, and nurses and other hospital staff already use them routinely, making them natural tools for improving patient safety today. They are not without flaws, however. Hospitals could turn incident reports into modern tools for enhancing patient safety by, in order of priority: (i) ensuring that frontline providers learn when reporting has improved safety, because this motivates providers to report future events; (ii) encouraging providers to write detailed descriptions of events (narratives), because this gives the information needed to prevent similar events from recurring; and (iii) involving physicians in reporting, because many of the adverse events occurring in hospitals involve issues with physician or multidisciplinary care.

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