Patient Safety: Let's Measure What Matters

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Recent studies in the United States and Europe suggest that despite some success at individual hospitals and reduced harm for 2 conditions (1), patient safety is not improving (2, 3) and remains a major public health problem (4). We have studied patient safety for 20 years, and these findings prompted one of us (Dr. Thomas) to review the case summaries of the 265 preventable deaths from the Utah and Colorado Medical Practice Study (5). The Institute of Medicine used these cases to estimate the number of preventable deaths due to medical errors for its landmark report, "To Err is Human" (6). In reading these summaries, one is quickly struck by the heterogeneity of the errors. Although the errors were broadly classified in our work as operative, drug-related, and diagnostic, these categories obscure the diverse nature of the errors and adverse events. For example, the most common category (operative) contained 20 types of adverse events, each of which comprised additional subtypes and were caused by a large variety of errors (7).

A better appreciation of the heterogeneity of errors and adverse events is critical to developing new and more successful approaches to patient safety research, policy, and practice. In the meantime, regulators and expert groups should stop adding new measures to the existing lists of errors and adverse events that inevitably become publicly reported and are being used to grade and reimburse hospitals.

Groups that encourage or require hospitals to measure and report specific safety events include the Centers for Medicare & Medicaid Services (hospital-acquired conditions), The Joint Commission (sentinel events), the National Quality Forum (serious reportable events), the Agency for Healthcare Research and Quality (patient safety indicators), Consumer Reports, and The Leapfrog Group (hospital safety score). Although some hospitals may reduce patient harm in response to these requirements, they measure only a small and unrepresentative fraction of the harm that occurs (2, 3). To illustrate, a recent study by the Office of Inspector General (8) found that 13.5% of Medicare beneficiaries had adverse events during their hospital stays, but only 1.6% of these events would have been captured as serious reportable events or hospital-acquired conditions. The patient safety indicators have also been shown to miss most adverse events (3). This degree of measurement error is extremely concerning because the Centers for Medicare & Medicaid Services is initiating a value-based reimbursement program that will link hospital reimbursement to performance on the hospital-acquired condition and patient safety indicator measures. Even if hospitals were to reduce or eliminate the events tracked by these measures, they may have done little to improve overall patient safety and may be continuing to harm patients on a daily basis.

In addition to promoting tunnel vision and a false sense of security, externally mandated safety measures may be associated with other negative consequences. First, hospitals are already overwhelmed by the large number of quality measures (9). Requiring them to respond to more measures may actually compromise patient safety because scarce money and resources are directed toward fulfilling reporting requirements instead of making actual improvements in patient care.

Second, many safety events are unpredictable and often result from an idiosyncratic confluence of patients, technology, systems, and care teams. New kinds of errors and ways of harming patients are constantly emerging and cannot be adequately captured by prespecified measures.

Third, the emphasis on externally mandated measures can negatively affect a health care organization's internal safety culture. In a positive safety culture, frontline caregivers openly report, discuss, and learn from errors and adverse events. However, when organizations focus on reducing or eliminating certain publicly reported events, the culture becomes more focused on accountability to improve performance on a limited set of external measures than on understanding the system problems, errors, and adverse events occurring within their settings. Furthermore, organizational cultures that are too focused on accountability may inadvertently incentivize frontline caregivers and their managers to fudge data and hide events to meet the organization's goals.

The adverse consequences of mandated external safety measures and their inability to accurately measure patient safety should persuade national patient safety organizations to stop promulgating more measures. Instead, we should measure what matters. Frontline caregivers should be trained to create their own safety measures using health information technology (HIT) tools that can provide safety reports in real time at the unit level. They should also be trained to make improvements in the context of a positive safety culture.

To measure what matters effectively, the following steps are needed. First, we must fundamentally reassess measurement methods and the epidemiology of adverse events so their underlying causes can be analyzed. Second, national organizations should find creative ways to encourage hospitals to measure and improve their safety cultures by using validated surveys. In a positive culture, leaders are committed to safety; frontline caregivers report near misses, errors, and adverse events; and both groups are provided the training, tools, and authority to analyze, learn from, and improve systems. These are the building blocks of a true learning system. Although some national organi-

zations that develop measures recognize the importance of safety culture, this recognition has not resulted in effective policy. Third, frontline caregivers need education on safety science and improvement science. Such training, when coupled with HIT systems that provide real-time detection of safety events, can enable frontline caregivers to focus on patient safety issues that actually reach their patients (10). This could be encouraged through the creation of certification standards by professional societies, regulators, and other groups.

Good evidence exists that educating caregivers about safety science and improving safety culture is the foundation of improvement efforts. Of course, reliance on the line worker is a long-standing tenet of quality improvement across many industries. With the emerging evidence that safety is not improving and is too heterogeneous to be assessed by externally mandated measures, we conclude that external top-down efforts to measure safety should cease to expand. We should measure what matters by focusing on creating a positive safety culture, developing HIT tools to detect local safety problems, and training frontline caregivers to improve patient safety.

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