

Association of Women Surgeons

National Surgical Quality Improvement Program integration with Morbidity and Mortality conference is essential to success in the march to zero



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Abstract

BACKGROUND: Morbidity and Mortality conference (M&M) and the National Surgical Quality Improvement Program (NSQIP) are systems to improve surgical care. We evaluated the commonality of adverse events (AEs) and the change in AE rates after integration.

METHODS: A single institution's NSQIP and M&M registries were analyzed to determine commonality of AE reported. Causal determinant groups were then created to categorize and standardize AE. Incidence of AE and patient commonality identified by these systems was evaluated over 2 years.

RESULTS: The 68 common patients identified in 2012 represented 27% of NSQIP and 43% of M&M patients. Common AE reported by M&M and NSQIP decreased from 16.9% (2013) to 9.6% (2014). Causality code analysis demonstrated significant differences in proportion of issues addressed within each ($P < .0001$).

CONCLUSIONS: Despite standardized coding, M&M focus differed from NSQIP. Low commonality affirms NSQIP as a critical adjunct to voluntary reporting. Combining both may help eliminate preventable AEs.

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Adverse perioperative events (AEs) cause injuries to thousands of patients every year in the United States.¹⁻⁵ The “march to zero” refers to institutional commitment

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to complete elimination of AE, especially those related to preventable errors. The central component of this effort is Morbidity and Mortality (M&M) conference, which has been part of the core of surgical education as a voluntary discussion forum designed to define opportunities for improvement. Recent studies have suggested that adoption of the National Surgical Quality Improvement Program (NSQIP) by hospitals can lead to decreased rates of AEs.^{6,7} However, reporting of NSQIP data during weekly M&M conference is not standard practice for surgical departments throughout the country. In fact, many institutions

do not subscribe to NSQIP, primarily because of perceived inability of NSQIP data to affect change. The focus of NSQIP is institutional performance although individual surgeon function can be at least partially assessed. This perceived disconnect from the individual surgeon, especially those who operate at multiple hospitals has been a significant obstacle to wider acceptance of NSQIP. Another important barrier for adoption of NSQIP, especially in smaller facilities, is the financial commitment required to participate in the NSQIP program and to support the cost of a surgical clinical reviewer position.

Despite these concerns, the deployment of NSQIP has led to national changes in the surgical quality process. Since its inception, several collaborative surgical quality improvement initiatives have been developed, including the Florida Surgical Care Initiative, Michigan Surgical Quality Collaborative, Tennessee Surgical Quality Collaborative, and Pediatric and Infant Case Log and Outcomes.⁷⁻¹⁰

Recognizing the value of effective synergy between M&M and NSQIP, we have spent the last 4 years integrating the traditional voluntary reporting process of M&M with the sampling technique of NSQIP. Our intent is to provide the individual surgeon relevant, nonjudgmental data categorized by findings that reflect surgical team behavior, those that are related to patient comorbid conditions, and those that represent unplanned adverse outcomes related to one or both of the first 2 causal categories. This process has required multiple steps to assure meaningful amalgamation of these 2 critical quality assessment programs. First was determination of the scope and overlap of information regarding AEs provided by M&M and NSQIP. The findings of this assessment then required that elements of both systems use a common descriptor, termed a patient quality advocacy (PQA). The PQA linked M&M AE with NSQIP AE, thereby creating a list of items similar across both systems and items unique to one or the other. Finally, to categorize AE as issues of surgeon or surgical team behavior, causality codes reflecting provider intervention, comorbid conditions, or adverse results were assigned to each AE.

This report summarizes each of these 3 evolutionary steps and their cumulative impact in decreasing the overall incidence of perioperative surgical AEs over this 4-year interval.

Methods

At our hospital, M&M reporting is primarily resident-based, although any person in the department can report an event. AE to be reported are clearly defined (ie, unplanned procedure, surgical site infection, and so forth) and distributed on the M&M worksheet that is available to all residents and surgeons in the department. The most senior resident for each service is expected to report all AE for both inpatient and outpatient procedures that occur on a weekly basis as the events transpire. This may lead to a single patient who experiences multiple AE over time to be

discussed at several different M&M conferences. However, reporting remains a voluntary process, and therefore, AE that are considered minor, redundant, or not identified at all may not be discussed at M&M conference. NSQIP, on the other hand, uses an objective surgical clinical reviewer to identify AE, with reporting of events based on a randomized sampling technique.

Morbidity and Mortality conference vs National Surgical Quality Improvement Program: similar intent but different perspectives

Commonality of reported AE data was assessed to determine if M&M and NSQIP data identified similar quality issues, or if the focus on categories of AE differed between systems. Deidentified data from our institution's 2012 NSQIP and M&M registries were analyzed to determine type and incidence of problems related to general and vascular surgical care. The number of patients and incidence of specific AE reported in both systems was determined, as well as the proportion of patients common to both systems. Because the definition of AE varied across platforms, each AE in both systems was categorized into 1 of 17 PQA codes related to operative care, organ system dysfunction, readmission, or specific diagnoses. The M&M and NSQIP profiles of PQA reported in the cohort of patients common to both registries were analyzed by comparing the incidence of every PQA in each cohort using Chi square, accepting $P < .05$ as significant. To identify differences in the systems, a similar method assessed all patients to compare the volume and type of M&M PQA categories to those reported in NSQIP.

Causality codes for National Surgical Quality Improvement Program adverse events

In order for AE reported to and discussed in either system to be relevant to a surgeon, some linkage between the event and its likely cause must be apparent. Most especially, those AE that imply a relationship to surgeon or surgical team behavior are most likely to be embraced as essential opportunities for improvement. Although all AE are influenced by provider performance, many that reflect surgical team behavior can be easily recognized and will stimulate provider response when reported and discussed. Moreover, because multiple AE often occur to individual patients during the course of care, analysis of these by assessment of causality provides insight into the interactions of comorbidity and surgical team related AE to those that reflect unplanned adverse results. To develop this linkage, each AE in our M&M and NSQIP registry was categorized into 1 of 3 causal determinant groups: concomitant comorbidities (CCs), behavior related to direct provider interventions (PRs), and adverse or unplanned outcomes (ARs). CCs were events attributed to, or

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