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Association for Academic Surgery

House staff–led interdisciplinary morbidity and mortality conference promotes systematic improvement



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ARTICLE INFO

Article history:

Received 1 December 2016

Received in revised form

18 January 2017

Accepted 24 February 2017

Available online 6 March 2017

Keywords:

Morbidity and mortality

Interdisciplinary

M&M

Quality Improvement

Systems Improvement

ABSTRACT

Background: Improvements in patient safety are critical to improving clinical outcomes. We present a resident-led interdisciplinary morbidity and mortality (M&M) conference utilizing postconference task forces to identify unique system issues, classify key contributors to interdisciplinary complications, and implement systems solutions. The conference also served to facilitate resident involvement in quality improvement projects.

Materials and methods: Members of the UNC Housestaff Council designed and implemented a hospital-wide M&M conference. Cases involving two or more service lines and resulting from systematic failures were selected for presentation by an interdisciplinary group of residents involved in the patient's care. Postconference task forces addressed problems and developed initiatives to improve care.

Results: Of the 15 cases presented, 60% were attributable to an error in judgment, 26% to an error in diagnosis, and 13% to an error in technique. Communication (67%), coordination/care utilization (47%), poor process/workflow (40%), and inadequate training (33%) were the main associated contributing factors. Poor communication contributed to all complications resulting from an error in judgment. Inadequate training and poor workflow were the most common contributing factors with an error in technique. Poor utilization of care and inadequate processes were most common with an error in diagnosis. Postconference task forces identified system-based improvement projects in 73% (11 of 15) of cases with 82% (9 of 11) of projects successfully implemented or in process.

Conclusions: House staff–led interdisciplinary M&M conference utilizing postconference task forces is an ideal setting to identify unique system issues and implement system-based improvement strategies.

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<http://dx.doi.org/10.1016/j.jss.2017.02.065>

Introduction

Improvements in patient safety are critical to improving clinical outcomes. Quality improvement (QI) projects have been shown to improve outcomes across all fields of medicine.^{1–3} As an initiative to drive change, morbidity and mortality (M&M) conferences provide a unique opportunity to discuss adverse outcomes and identify system issues for improvement. M&M conferences have been part of the backbone of medical education since the Flexner report in 1910.⁴ As a result, Ernest Armory Codman, an early 20th century surgeon, is regarded as one of the initial pioneers of establishing QI through his writings in *A Study in Hospital Efficiency*.⁵ Unfortunately, this early model for improvement through M&M conferences has strayed. Typically during these conferences, difficult-to-diagnose cases or cases with medical error are presented for public discussion. Most conference time is spent in analyzing the patient's diagnosis or clinical course with a focus on resident education lacking a formal analysis into processes that can prevent the adverse outcome.^{6,7}

In the past decade, there has been more emphasis in medicine on QI and patient safety. As a result of changes in the Accreditation Council for Graduate Medical Education (ACGME) core competencies for residents, QI and patient safety measures are now an essential part of resident training.⁸ We believe an interdisciplinary M&M conference is the ideal setting to engage residents in QI and to improve patient outcomes. Examples of involvement leading to change in a pediatric hospital and rheumatology division have been documented in the literature; however, fully integrative, interdisciplinary M&Ms are less abundant.^{9,10} The few models that do exist have been documented at a Veterans Affairs health care system in New Mexico, Vanderbilt, and the Mayo Clinic.^{11–13} In the Vanderbilt model, residents and attendings had a shared role. Interdisciplinary pediatric adverse events discussed at the M&M conference resulted in the generation of 33 action items for improvement, of which 70% were completed. Although the Mayo Clinic's multidisciplinary mortality review system model did not specify house staff involvement, they obtained a significant reduction in mortality over a 10-y period. In this example, the conventional M&M format was supplemented with a deidentified presentation of patient care and focused on system-wide improvement and preventable causes of mortality.¹⁴ In the Veterans Affairs model, an interdisciplinary quality improvement conference steering committee selected cases for presentation that were focused on underlying systems in the clinical care environment (i.e., communication, staffing, physical environment, architecture, human factor issues, policies, work processes, information systems, equipment, and safety mechanisms) with the intent of addressing issues and implementing action items for systemic change.¹³

In this study, we asked if the development of an interdisciplinary M&M conference at UNC Hospitals utilizing post-conference task forces could identify unique system issues, classify the key contributors to interdisciplinary complications, and implement novel systems solutions to improve the quality of care delivered and engage house staff in QI.

Materials and methods

Conference creation

At the time of our intervention, all M&M conferences held at the University of North Carolina (UNC) Hospital were department specific and did not facilitate interdisciplinary discussion or evaluation of system-wide processes. Furthermore, each department held M&M conference at a different regularity. The most robust departmental model had weekly divisional and departmental M&Ms of all complications, deaths, and readmissions compared with the least frequent departmental model, which had monthly conference to review electively submitted educational cases, morbidities, and mortalities. We also identified that departments had different presentation standards. In the most robust model, the resident directly managing the patient presented the complication as they were most intimately involved with the case allowing for full transparency and accountability. In other departmental models, a third party was assigned to present the case. Essentially, all departmental models lacked any formalized improvement processes for cases deemed preventable, with the exception of cases which were also labeled as root causes or sentinel events.

In light of the above variability in M&M practice and ubiquitous lack of formalized improvement processes members of the UNC Housestaff Council elected to implement a monthly, hospital-wide M&M conference in conjunction with support from the hospital administration and the patient safety council.

The initial conference organizer was a senior resident who served as the housestaff council president at the time of the conference creation. He identified and met with multiple stakeholders during the planning process to develop a house staff executive team to oversee the creation of this conference. Over the course of 3 mo, the house staff executive team met with senior leaders in the surgery department, UNC Health Care's Legal Department, Division of Risk Management, and Patient Safety Officer to establish what types of cases were deemed appropriate for presentation from a legal/risk perspective and develop guidelines for maintaining patient privacy and confidentiality. Approval was obtained from hospital administration and the legal department, and a commitment was obtained from the chair of surgery to use a monthly grand round slot for the conference. The team then met with program directors and chief residents in their respective departments and related subspecialty programs to obtain broad support for the conference. This included multiple presentations at Graduate Medical Education committee meetings, which included all hospital program directors, and a presentation at the quarterly house staff council meeting to all chief residents. After broad approval was obtained case submission was opened in April of 2014, and the first conference was held in May of 2014 supporting an attendance of over 200 members.

The conference logistics evolved over time. Initially, the organizers envisioned presenting a surgical case and medical case at each hour-long conference in an effort to ensure at least one case would be relevant for all attendees. However,

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