are even more pronounced, as well as other departments of family medicine across the country.

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New Ideas

Morbidity, Mortality, and Improvement—Moving Ideas Into Action

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Setting and Problem

The morbidity and mortality conference has a long-standing tradition in internal medicine training. Cases are typically dissected in an open forum with instructions that the discussion must not leave the room. Unfortunately, it is quite common to encounter the same type of cases repeatedly through the years. In these instances neither the discussion nor an actionable plan for improvement likely has left the room. Without a driving force connecting academic discussions to improvement, the traditional morbidity and mortality conference format may not prevent errors from recurring.

Intervention

At the University of Cincinnati Internal Medicine residency, we have rebranded the traditional format into a focus on Morbidity, Mortality, and Improvement (MMI). Residents rotate at the University of Cincinnati Medical Center and Veterans Affairs Medical Center, and chief residents hold MMI conferences at both sites. After each conference, the chief residents gather residents, faculty members, quality improvement/patient safety experts, and other interprofessional team members to determine an action plan to improve the problem discovered during the conference. The chief residents emphasize improvement concepts throughout the MMI case discussion, and share initial plans for improvement after the case is reviewed. At the subsequent MMI conference the following month, chief residents share

their work and the initial improvement results. Many projects take longer than a month to complete, and the chief residents typically provide updates of multiple projects at each MMI conference.

Outcomes to Date

The MMI process has led to multiple improvement projects (TABLE). In 1 example, the problem consisted of a code blue situation that was conducted suboptimally with regard to advanced cardiac life support protocol use, poor communication used by the senior resident leading the code, and poor overall team interaction. In response, we designed and implemented the Emergency Response Rapid Review Course (ERRRC). After analysis of the MMI case, it was felt that although each interprofessional team member knew his or her role, the team functioned poorly because they had not actually practiced together as a team, a common problem for code teams in teaching hospitals. The ERRRC was created to rectify this. On the first day of every month, the chief residents gather resident ward team members, nurses, respiratory therapists, and ancillary staff in the simulation lab to navigate a code/rapid patient simulation and practice together as a team. The chief residents also conduct mock codes on the floor that include residents and other members of the interprofessional team.

In another example, the MMI conference reviewed medication order errors made by resident teams. After review, it was felt these errors could have been prevented had there been a daily standardized review of patient medications by providers. In response, the improvement team implemented a “Medication Review is the 5th Vital Sign” program that uses a checklist technique to assist team members in reviewing a patient’s

TABLE IDEAS INTO ACTION: PROJECTS STEMMING FROM THE MMI CONFERENCE

MMI Conference Issues Identified	Interventions
Suboptimal code blue situation with targeted improvements: <ul style="list-style-type: none"> ■ ACLS protocol use ■ Team leader communication ■ Overall team interaction 	Emergency Response Rapid Review Course (ERRRC): <ul style="list-style-type: none"> ■ Monthly course ■ Topics covered: ACLS review, crisis management, team debriefing ■ Code simulation with ward teams ■ Monthly mock code with floor staff
Medication order errors not identified for over 24 hours	"Medication Review as the 5th Vital Sign": <ul style="list-style-type: none"> ■ Medication review program ■ Twice daily review of medications by residents and students
Delay of diagnosis and treatment of patients on medicine teams with surgical issues	Educational document created: <ul style="list-style-type: none"> ■ Reference document for internal medicine residents reviewing acute surgical emergencies ■ Reviewed with teams each month
Communication delays between providers and nursing staff: <ul style="list-style-type: none"> ■ Led to delay of treatment and possible deterioration of patient's condition 	Incorporate and teach the concept of closed-loop communication: <ul style="list-style-type: none"> ■ Implemented in the ERRRC each month for wards teams
Inappropriate initial workup of hyponatremia on presentation to the emergency department	Develop a protocol with nephrology: <ul style="list-style-type: none"> ■ Plan to implement for all patients presenting to the emergency department with hyponatremia

Abbreviations: MMI, Morbidity, Mortality, and Improvement; ACLS, advanced cardiac life support.

medication list prior to rounds, at the bedside, and before discharge.

The effects of these interventions and those listed in the TABLE are currently under study. True to improvement science, if the initial intervention fails to produce improvement, the teams will test other approaches until improvement is achieved. The ongoing work is reviewed at each MMI conference. We feel the MMI process has the potential of turning academic discussions into high-value improvement actions that are integrated into the larger health systems. In addition, residents who work on these projects are given credit as part of their scholarly and quality improvement project requirement.

Our approach shows that the morbidity and mortality conference can be more than a forum for discussion. Rebranding it as Morbidity, Mortality, and Improvement creates a highly visible potential tool for improvement.

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