

Envisioning the Future Morbidity and Mortality Conference: A Vehicle for Systems Change

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The traditional morbidity and mortality conference (MMC) was originally pioneered in the early 20th century as a way to evaluate the clinical practice¹ and was adopted for hospitals by the American College of Surgeons in 1916. Throughout the years, it has provided education to trainees² and served as a forum to discuss challenging cases for attending physicians. However, traditional MMCs frequently involved assignments of blame, “Monday morning quarterbacking,” and did not address systemic issues. Furthermore, they frequently excluded nurses and allied medical staff, thus losing valuable insight.³

Recently, with the advent of the patient safety movement, the traditional MMC has been revisited and refined as a *systems-based* MMC to serve as a patient safety strategy, both for surfacing adverse events and serving as a mechanism to understand causation, and perhaps most importantly, institute timely interventions.^{4,5}

THE IDEAL MMC FOR PATIENT SAFETY

Early explorations of the systems-based MMC in surgery and internal medicine^{6,7} were followed closely by pediatrics.⁸ Deis et al⁴ published their landmark interventional study on transforming the MMC for system-wide improvement in a large children’s hospital. This seminal work was included in the 2007 Agency for Healthcare Research and Quality’s “Advances in Patient Safety: New Directions and Alternative Approaches.” Subsequently, interventional studies implementing revamped systems-

oriented MMCs in general pediatrics and multiple pediatric subspecialties followed suit.^{9–13} These studies trace the evolution of the MMC in pediatrics from its roots primarily as an educational venue for medical trainees to playing an active role in improving patient safety.¹⁴

The fully developed systems-based MMC can become an ideal patient safety tool by utilizing a standard, consistent approach to case review and adverse event analysis. This provides a means to understand causative factors, formulate solutions, and track the impact of interventions.⁵ To perform these beneficial functions, the systems-based MMC must conform to known effective medical incident analysis models including (1) eliciting input from all staff involved, (2) using a structured framework to investigate underlying contributing factors to adverse events, and (3) assigning responsibility for follow-up on implemented improvements.^{15,16}

So how do we currently measure up in pediatrics and across children’s hospitals? Up to a few years ago, descriptive studies of MMCs describe a lack of clarity in goals, wide variability in structure and process, heterogeneity in focus, absence of standard mechanisms to identify and address errors, and lack of adequate and timely follow-up. Untrained moderators, poor physician attendance, inadequate documentation of conclusions and actions, and limited results sharing were found in many MMCs studied.^{8,16,17} Slow and uneven implementation of the ideal systems-based MMC in pediatrics frames the challenge going forward if the MMC is to realize its full potential to improve patient safety across all children’s hospitals.

BENEFITS OF THE MMC

As an adverse event surveillance tool, the systems-based MMC is more effective than traditional incident reporting in uncovering diagnostic errors, communication problems, and workflow issues.^{9,11,18} The multidisciplinary approach ensures that stakeholders at the frontlines of care are involved in the improvement process.¹⁹ Because most conferences occur at the unit level, involved frontline providers who discuss and analyze cases are also well positioned to determine and implement solutions.¹⁹ Because such solutions will directly impact their work,



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there is incentive to follow through on change. With traditional MMCs, the burden of improvement was placed on each attendee, with each individual being responsible for taking what was learned and putting it into practice. With a systems-oriented format and accountability, mechanisms now exist to work with individuals to carry out action items.¹² True to its educational roots, the systems-based MMC can also become a venue to increase trainees' competency in systems-based practice, thus fulfilling Accreditation Council for Graduate Medical Education requirements for developing general competencies for practice-based learning.^{20,21}

Although not explicitly studied, systems-based MMCs are also thought to foster culture change by enabling open discussion of adverse events with less stigma or individual blame.²² The MMC also contributes to reflective practice. Donald Schon, a philosopher who has significantly contributed to theories of organizational learning, noted that "reflection in action" is what helps healthcare professionals learn and develop resilience²³—an important potential benefit of the systems-based MMC not found in other patient safety strategies and warrants further study.

THE SYSTEMS-BASED MMC VERSUS ROOT CAUSE ANALYSIS

Root cause analysis (RCA) is a structured method used to analyze serious adverse events. It is widely deployed as an error analysis tool in healthcare.²⁴ Although similarities exist between the RCA and the systems-based MMC in their approach to error analysis, the systems-based MMC has distinct advantages over RCAs. First, because of the time commitment involved, RCAs are usually only performed for errors with devastating consequences such as serious safety events. This narrow focus often excludes more minor errors, especially if they did not alter patient outcomes. Conversely, these "less severe" issues can be fully discussed at the systems-based MMC, leading to illumination of significant system problems. Second, RCAs, because of their greater complexity, have a long lag time between the adverse event and review outcome. In fact, regulatory agencies that oversee healthcare permit 45 to 60 days for completion of RCAs, stretching the memory of those involved for detail and potentially missing opportunities to intervene before significant harm reoccurs.^{10,13} In contrast, systems-based MMCs take less time to complete, shortening the time between events and error analysis. Finally, RCAs are often conducted at the institution or hospital level with little feedback from or to the frontlines.²⁵ They can occur far removed from unit staff who have more intimate knowledge of potential causative factors and possible solutions in their area. On the other hand, a systems-based MMC is intimately tied to a healthcare area or unit and is attended by invested frontline staff.

CHALLENGES AND FUTURE RESEARCH

The systems-based MMC comes with particular challenges that must be addressed to maximize its effectiveness. One challenge is responding to the concern for potential loss of educational value to trainees.¹² This is likely unfounded as even systems-oriented MMCs still provide significant education not only on patient pathophysiology but also on systems-based practice as mandated by the Accreditation Council for Graduate Medical Education.²¹

A second challenge is finding time and resources to organize and coordinate the conference.¹⁰ The systems-based MMC relies on a substantial amount of preparation involving interviews with staff, preconference error analysis, and preconference determination of possible solutions to maximize the meeting time.¹⁰ Although less time consuming than a typical RCA, it is nonetheless an important commitment.

A third challenge is case selection. Methods for choosing cases for MMC presentation vary, often reflecting specialty or departmental values. Although a nonstandard approach is frequently used (direct referral of cases from house staff or input from the institutional incident reporting system),^{10,21} it is important for MMC organizers to deliberately choose and be consistent with their case selection method, so that trends in adverse events can be interpreted accurately. This requires awareness of biases that may be inherent in the case selection method used.

Moderating a systems-oriented MMC is also no small task. Diplomatic but firm moderators are needed to maintain the systems-based MMC's focus on improving care. Moderators should be prepared not only to rephrase or counteract comments that are unsupportive or unsympathetic in tone but also to address potentially controversial issues.^{3,11}

A structured feedback loop is important, so that stakeholders are informed of implemented interventions and their potential effectiveness to improve care. Although many interventional studies incorporate such feedback mechanisms in their revamped systems-based MMC (mostly by reviewing previous cases and improvement outcomes at the start of each MMC), there are no studies isolating specific effects of this practice on stakeholder and patient outcomes.^{4,9,21} Only 1 study in a pediatric department noted that this was positively received by attendees.⁹ At best, it can be surmised that consistent feedback can foster transparency, provide an opportunity for constant evaluation, and continually encourage stakeholders to participate in the MMC process.²¹

Finally, long-term trends uncovered by the systems-based MMC must be documented and followed closely. An aggregated form of analysis and case-to-case discussions should be done, thereby identifying common themes and potentially similar underlying system problems across apparently disparate adverse events. This may also allow prioritization of interventions to prevent unwarranted commitment of resources to address rare events rather than common underlying problems.

From a research perspective, the greatest challenge is demonstrating actual improvements in patient outcome as a result of the systems-based MMC process. At this time, there are little data on the effect of MMCs on patients, with most published studies reporting surrogate measures such as numbers of implemented quality improvement interventions.^{10,11,13} Another area that requires further study is the feasibility and importance of involving patients and their families in the systems-based MMC process. Early investigations into patient engagement in other patient safety initiatives have generally been met with success, warranting research into applicability to the MMC.

CONCLUSIONS

In summary, the systems-based MMC has great potential to improve care delivery and patient safety not only in pediatrics but also in a wide variety of settings and specialties. It is imperative that we strive to implement known principles of a systems-oriented MMC, so we may reap its potential benefits while preserving its traditional educational value. Future work should focus on studying and removing barriers to implementation with rigorous evaluation of the systems-based MMC's effects on patient safety metrics, morbidity, and mortality.

DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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