

Maximizing the educational potential of Morbidity and Mortality Conferences

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SUMMARY

Morbidity and Mortality Conferences (MMCs) are considered to be one of the most powerful education tools for clinicians; however, their current structure in many health care facilities focuses predominantly on quality and outcome improvement, and their retrospective approach limits their educational component. This article discusses how MMCs can be modified to enhance the educational outcomes and provide a valuable training session that adds to the quality control value.

The Morbidity and Mortality Conference (MMC) is one of the most important and dynamic activities conducted around clinical services. MMCs improve patient care, decrease mortality rates, and enhance clinician engagement in system improvements.¹ Hospitals and academic institutions' leadership give it a high level of attention as a signal of its immense educational value. MMCs are also considered to be one of the most powerful education tools for clinicians. They have been considered the “golden hour of surgical education.”² However, the current structure and practice of MMCs — as observed in many health care facilities — have a predominant focus on quality and outcome improvement, with a limited educational component included in a retrospective approach.

CURRENT PRACTICE

Different departments use their own guides and structures to conduct MMCs and have a common goal of improving patient safety. The usual structure involves presenting and discussing adverse events that have occurred during the management of a specific condition. Attendance is often multidisciplinary and includes faculty, residents, students, and other health care providers. Cases are presented in a sequential storytelling style from the start of the clinical problem until the end of management. Upon completion of the presentation, discussions with literature review follow and are often focused on identifying errors, deviations from standards, and alternative management options to improve the quality of outcomes and identify potential health system improvements. Although this approach is important for quality improvement, the educational value is often restricted by the retrospective nature of the discussion, which provides no opportunity to practise applying knowledge and decision making in management. In addition, learners' engagement is variable, and may be limited by participants' shyness or embarrassment. In addition, comments perceived as blame and criticism of the managing team may negatively affect the desired educational component of the MMC.

MAXIMIZING EDUCATION

The structure and focus of MMCs can be modified to enhance their educational outcomes and provide a valuable training session that adds to their quality control value. The educational potential of MMCs has been recognized by the Accreditation Council for Graduate Medical Education (ACGME) Core Competencies and by the Royal College of Physicians and Surgeons of Canada CanMEDs roles.³ Their potential for enhancing the educational quality and learning outcomes of MMCs is promising.⁴ However, we have not identified specific guidance on how this potential can be achieved, and questions continue to be raised on how to design effective educational experiences around the MMC.⁴

Educational activities are more effective when learners actively engage in them.⁵ Interactive engagement by practising decision making throughout the unfolding scenario promotes the active application of knowledge at a higher level of cognitive learning (Bloom's taxonomy). The passive transmission of knowledge (clinical outcomes) in traditional MMCs can be transformed to an active building of experience based on the constructivism learning theory: participants discuss and decide on their management approaches before knowing how the case under review has been managed. Through this exercise, learners practise managing clinical conditions under faculty supervision using scientific evidence with group discussion rather than passively acquiring more information. Practising clinical management and planning through unfolding clinical scenarios provides a valuable training exercise.⁵ Furthermore, educational technology can provide efficient tools to facilitate group participation in a relaxed learning environment.

PROPOSED TRANSFORMATION

Collaborative learning and problem-solving are key components to enhance active and interactive learning in MMCs. Clinical cases are presented (traditionally by residents) in a prospective, unfolding pattern, similar to how the events started and progressed in real life. At the decision-making stage of management (before the complication event), participants are invited to propose and discuss management opinions before proceeding to the next step. Participation is facilitated by polling using an audience response system (ARS) or the polling feature in the virtual meeting format. Anonymous polling eliminates the potential shyness or embarrassment from participation and allows the sharing of all opinions. It also provides an instant survey of all participants' opinions, which can be discussed depending on the discrepancy in opinions/options. Faculty can further enrich the discussion by elaborating on the rationales of various options. Literature review can be added at this stage as well

(rather than, or in addition to, at the end of case) to address specific points of controversy.

It is important to emphasize that using technology will facilitate group participation and discussion efficiently, but it is not by itself the educational tool. Hence, alternative approaches such as show of hands or individual participation can be used. Moderating skills are needed to facilitate the discussion. An expert moderator can also facilitate the selection of cases based on the current structure and leadership of MMCs.

Case presentation

The following is a hypothetical case presented in the prospective discussion format to illustrate the concept.

- Title: "Abdominal pain after polypectomy." The title should be generalized to avoid revealing the complication at the beginning and narrowing participants' engagement in critical thinking and decision making. Generally, the title should refer to the main problem plus the presenting symptom or sign of the complication.
- Initial scenario: "A 51-year-old male presented with right lower quadrant (RLQ) abdominal pain after a colonoscopy procedure performed earlier that day. The initial assessment revealed normal vital signs, normal leukocyte count, and mild RLQ localized tenderness. Computed tomography (CT) reveals mild stranding around the cecum without free air or fluid. The colonoscopy note reveals sessile cecal polyp resection."

Prospective case discussion

At this decision-making stage of the initial scenario, a question can be directed to participants (using the ARS or polling) about how to proceed. Management options, such as diagnostic laparoscopy, contrast enema, observation or discharge home, can be offered as choices. Controversies in opinions initiate an active discussion that may include supporting evidence from the literature.

The case can then be continued with an evolving scenario that involves worsening of the patient's clinical condition and a new finding of free air and fluid on CT. The audience is then polled about the management options. Another round of discussion is facilitated, with different learning points depending on the management options proposed.

The case may continue stepwise, with discussions facilitated when appropriate. Generally, 2–3 discussion steps about the critical management options, knowledge updates, or unusual presentations are recommended to maintain the participants' interest and avoid repetition or lengthy case presentations.

IMPLICATIONS

Our proposed approach transforms a predominantly quality-improvement and outcome-focused activity into a prospective, interactive educational activity without altering the quality-improvement role of the MMC. With this approach, participants learn and practise critical-thinking and decision-making skills under broad faculty supervision. The approach advances learning from understanding to applying knowledge in Bloom's taxonomy. It also minimizes the traditional blame and criticism on the presenter and promotes relaxed attention and participation using the ARS or polling educational technology tool.

In our experience, the added questions take an additional 2–4 minutes per case. The format does not usually lengthen the discussion, but rather distributes it throughout the presentation. It directs discussions into a practical decision-making exercise and allows for comparison with the management of the case in real life. The original MMC goals of identifying errors and improving outcomes and future performance are maintained and perhaps emphasized further by deeper analysis and engagement in judgment.

CHALLENGES

Coordinating MMCs or modifying the existing structure can be challenging because of the diverse nature and complexity of the events. Potential challenges include compliance of the presenters, choosing appropriate discussion points, preparing appropriate questions, technology troubleshooting, and facilitating effective discussions, especially given the diversity of the audience. However, the ultimate educational value and outcomes of MMCs in this format are worth considering. User-friendly technology can make polling and interaction easier. Most virtual meeting platforms have easy polling and input features. Program coordinators can play a key role in setting up the presentation with polling questions; however, it is recommended that all presenters learn the setup. Notably, such skills have become more widespread after the extensive use of virtual platforms during the pandemic. Prior preparation and review of the presentation with the corresponding faculty to select the questions and points of discussion will facilitate a productive interaction. As with all change implementation, collaborative work among all participants and departments is required.

It should be noted that this approach should not de-emphasize the quality-improvement role of MMCs; rather, this role should be maintained and emphasized. In many institutions, a variety of allied health care providers as well as providers in different specialties, with varying levels of expertise, participate in the same MMC sessions. It is prudent to include teaching points directed to those participants, especially when case management could be altered by changing these points. All the elements of improving care

and involving different specialties and other allied health professionals should be maintained in the MMC. In fact, the quality-improvement role can also be enhanced with active engagement in analysis and judgment. Identification of errors and recommending measures for improvement should be well emphasized.

EVALUATION

Evaluating this proposed approach to MMCs is challenging and must be undertaken cautiously. Evaluation can be in the form of participant surveys or interviews, and parameters that can be measured to evaluate the approach include participants' knowledge gain and decision-making skills, their level of engagement and participation, and the quality of the discussion. As many people may be resistant to change, it is recommended evaluation take place 6–12 months after the new format for MMCs has been implemented. Regular feedback and appraisal may enhance further development. Future studies will be needed to assess the value and effects systematically.

CONCLUSION

The new approach to conducting MMCs in a prospective, case-based and problem-solving style can transform the traditional MMC into a highly interactive and engaging educational activity with practical measures. Evaluating the new approach is necessary; however, evaluating long-term and higher cognitive learning might be challenging, as most evaluation tools rely on memorization and learner satisfaction.

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