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Not the Last Word

Not the Last Word: Morbidity and Mortality Conference: Theater of Education

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One essential feature of Morbidity and Mortality (M&M) conferences is the admission of error. In that spirit, I must concede that some of the opinions I have previously shared in this space were wrong. For example, my criticisms of core competencies for residents [3] were off target. All three commentators on that essay made the same point: The system may not be perfect, but it is better than what came before. They are correct.

Another essential function of M&M conferences is to prevent the repetition of error. And in that spirit, I will try to avoid making my previous mistake. So while I come now (a bit more humbled) to criticize the modern M&M conference, I admit right up front that the contemporary approach to studying medical error represents a vast improvement over the not-so-distant past [18], when mistakes were buried, in both senses of the word. Indeed, Codman's innovative attention on assessing treatment outcome (the forerunner of the M&M conference) stands next to antibiotics and anesthesia as one of the greatest medical advances in the last century.

Nonetheless, as a method of uncovering error, the M&M conference is flawed; and as a means of analyzing the causes of error, the M&M approach leaves a lot to be desired.

The first issue is that M&M uses the lowest form of medical evidence—the case report [12]. Case reports can be instructive, of course, yet isolated occurrences rarely articulate larger truths. In the realm of M&M, a single case will not speak to trends and patterns, and therefore can teach both too much and too little.

For example, a postoperative dislocation of a hip replacement might be the result of a technical error (implanting the device with inadequate soft-tissue tension or incorrect cup position, for example) but dislocation could also be seen after a perfectly-performed procedure as well. A talented surgeon will periodically have a patient dislocate, just as a talented baseball shortstop will, every now and then, throw the ball over the first baseman's head. The occurrence of a dislocation or a single errant throw is not cause for alarm; a series of blunders, however, very well may be. Needless to say, discussion of a single case will fail to discern the difference.

It must be noted, too, that isolated cases can create incorrect impressions because of recall bias. For example, if a surgeon presents a rare complication with a specific device, those listening to the presentation may inappropriately avoid using that device, deeming the risk of complication to be higher than it truly is.

Another problem with M&M is how cases are selected: Namely, a complication must take place. Thus, an orthopaedic surgeon who does not

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administer postoperative deep vein thrombosis (DVT) prophylaxis will not get flagged in M&M unless and until his patient suffers a DVT. The error itself is not enough to trigger review. Indeed, the error could be repeated many times before a complication occurs.

Morbidity and Mortality conferences also will fail to include those errors whose problems are not immediate. For instance, pin penetration into the hip joint during surgical treatment of a slipped epiphysis may lead to chondrolysis [14]—but perhaps years later, outside the purview of the M&M conference.

Unfortunately, this lack of sensitivity is not necessarily offset by high specificity either. It is known that a DVT or chondrolysis may occur despite perfect care.

Within the conference itself, M&M is poorly structured for analysis. Typically, the first comments are offered by the senior surgeons; and owing to their experience, that is a good thing. Still, one strong comment either way, defending the treatment or criticizing it, can frame (or indeed, end) the discussion. When the department chair dismisses an error by saying "this happens to the best of us," it is hard for a junior faculty member, to say nothing of a student or resident, to present a dissenting view. By contrast, the collective wisdom of the entire audience could be harnessed by anonymous audience response technology [15] that collects and integrates the individual responses of every person attending the conference, before the audience had its thoughts anchored by an assertive opinion.

Morbidity and Mortality conferences can, however, accomplish things beyond the reach of any other forum or medium. For one thing, these conferences are a platform for storytelling [10], and teaching in the context of stories is particularly effective. Instruction on the detection and management of complications will be more vivid and enduring (and provoke introspection, to boot) when it is presented in the context of a real case, tackled by known colleagues, in familiar surroundings. It is neither feasible nor desirable for residents to see every possible complication themselves; some second-hand learning is inevitable. And if a resident is not going to personally encounter a given complication, hearing about it in M&M conference might be the best alternative.

These conferences also serve a critical social function: Teaching the audience that it is not only permissible but healthful and necessary to admit one's mistakes. Just as children cannot develop in full if they do not hear their parents say "I was wrong," residents must see their teachers concede error when they commit one. Residents will reach their highest potential only if they engage in continued self-improvement [8]. To this end, they must admit their mistakes (at least, at first, to themselves). The example of respected mentors doing this can liberate this otherwise stifled step.

Morbidity and Mortality conferences must be seen for what they really are: Ritualized performances that serve to educate the audience. For true quality improvement and error reduction, a health system needs safety monitoring boards, peer-review committees and other, more refined methods. Morbidity and Mortality conferences cannot and should not supplant these efforts. Rather, M&M conferences exist specifically for the edification of students and residents. Indeed, a hospital without trainees won't lose much were it to forgo the conference and stick to more effective procedures. The theater of the M&M conference is best reserved for its distinct audience.

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Dr. Bernstein begins his piece on the utility of the M&M conference as a tool for improving patient safety with two observations that highlight why

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reducing harm to patients is such a challenging task. First, not all procedures that surgeons perform imperfectly result in harm to patients. Second, some procedures that are done flawlessly, nonetheless, have adverse outcomes.

From this starting point, Dr. Bernstein arrives at two conclusions; one of which is uncontestable, while the other invites vigorous disagreement. On the one hand, Dr. Bernstein is surely correct in arguing that any approach to quality improvement aimed at reducing harm to patients needs to be multipronged and include elements that are more systematic than M&M conferences alone. On the other, while Dr. Bernstein identifies the social function of morbidity and mortality as a forum for storytelling, he is too dismissive of how important this "occupational ritual" is for communicating professional norms to students and residents and for reinforcing those norms among colleagues [5, 6].

In part, Dr. Bernstein's critique of M&M conferences stems from the flaws that are inherent to the conference itself. Case reports are seen as the least-reliable source of evidence for drawing general conclusions [12]. Discussions can be unproductive. Recall bias may create a distorted view of specific devices. The only purpose that mortality and morbidity serves is describing for students and residents complications that they may not have the opportunity to observe and showing those same students and residents that it is "healthful to admit mistakes."

Dr. Bernstein acknowledges that this modeling is important; however, he does not seem to appreciate how critical this modeling truly is. These conferences differ from all the other more-systematic modes for uncovering latent system defects in one critical respect—M&M conferences alone involve colleagues, in face-to-relationships, discussing adverse events in context, shortly after they occurred.

This is critical for two reasons. First, unless there is a place where errors are discussed openly, then students, residents, and colleagues learn the lesson that errors are better left as a private matter. When errors are dealt with as a private matter, the professional community of physician colleagues abandon their fiduciary obligation to the larger community to regulate itself. That errors are better treated under a veil of silence is a terrible lesson for senior physicians to pass on to their students and residents.

Second, M&M conferences are one of the few arenas in which colleagues observe how seriously their peers think about adverse events. As such, performances in the "educational theater" of M&M conferences are one place for assessing the character, integrity, and trustworthiness of one's peers.

For a variety of reasons, from increased production pressures on surgeons to increasing use of digital technologies for communication, the amount of face-to-face communication among peers and between teaching faculty with their students and residents has been reduced. Trust is built through face-to-face relationships. It is my contention that anything that erodes trust erodes patient safety. Because it is one avenue for sustaining face-to-face relationships, mortality and morbidity serve the goals of safety in ways that outweigh whatever imperfections inhere in their structure. Ritual processes are necessary for reinforcing and reanimating group norms. The role that M&M conferences play in communicating how seriously professionals ought to examine their adverse outcomes is not enough to enhance safety on its own, but without these conferences the possibility of improvement is greatly reduced.

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Dr. Bernstein's impassioned commentary on the nonutility of the M&M conference as an avenue for discovery

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and analysis of medical error is interesting, but not supported by current research. Numerous studies have been published in the past few years documenting the benefit of a systems-oriented M&M conference in many settings, both medical and surgical [2, 9]. Although it is true that the M&M conference is not a perfect quality improvement tool, this is also the case for established systems of error detection and investigation [20]. At this point, there is no ideal process, since specific adverse event surveillance systems work better for some, but not other types of error [13, 17].

As an error-detection system, the M&M conference does suffer from case selection bias, but other mechanisms that rely on voluntary reports such as incident reporting and root-cause analysis have the same bias as well. The M&M conference works best within a clinical microsystem [16] with a highly developed safety culture [4] in wh ich participants are encouraged to report mistakes without fear of personal judgment. This promotes the ability to capture a wide variety of events, both near-misses (such as the lack of DVT prophylaxis) and those that actually resulted in harm (like the occurrence of a DVT). The M&M conference fosters discussion at the frontlines, especially when a multidisciplinary group participates. This strengthens safety culture, which in turn enhances M&M conference error reporting [7]. Another approach is to discuss all cases that fulfill certain qualities (deaths, readmissions, or reoperations occurring within a prespecified period of time), which serve as red flags for possible undiscovered errors.

As an error-analysis system, the M&M conference is underutilized. Recent work has shown that the use of a structured tool for error analysis within the context of the M&M conference results in better understanding of causative factors, which translates to more quality improvement interventions implemented [2, 7]. Unfortunately, most M&M conferences do not take advantage of such tools [1]. Dr. Bernstein lamented that the M&M conference traffics only in case reports, and worries that isolated occurrences would not reflect larger trends. This is true. If analyzed well, however, one error discussed can uncover wide-reaching system problems that if corrected can improve many outcomes. Dr. Bernstein also touched on the possibility of error despite "perfect care," alluding to issues of ascertaining preventability. Again, using a structured tool for analysis can help in this regard. Just because an event is a known complication of a procedure should not preclude its scrutiny. After all, a short decade ago it was common to accept central line-associated bloodstream infections as unpreventable when today we know this is untrue [19].

In summary, the M&M conference is not perfect, but it has distinct value in improving patient care. It is but one of many in the growing arsenal of quality improvement interventions we can employ to prevent harm and improve outcomes. If "every system is perfectly designed to achieve the results that it gets" [11], then why be content with ritualized performances and theater when we can redesign it to serve our cause?

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