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Review Article

The Morbidity and Mortality Review: A crucial tool for improving patient safety and quality

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Abstract:

Institutional mortality rates can be used to monitor the quality of hospital care. Morbidity and Mortality (M&M) review is crucial to the hospital's quality and patient safety initiatives.

A multi-disciplinary forum to discuss M&M better lends itself to the discussion that balances physician error and system failure. It is crucial to afford attendees opportunities for introspection/reflection while holding those responsible accountable without apportioning blame.

This review was undertaken at the M&M conference conducted by the Department of Surgery at The Aga Khan University Hospital Nairobi, a tertiary teaching and referral hospital. All surgical residents and faculty attend the M&M conference. A standard reporting format is used for every case discussed at the departmental level and shared at the institutional level.

Morbidities and Mortalities that are analyzed as being due to a system or administrative process failure or having potential medico-legal implications are subjected to a Root Cause Analysis.

Recommendations from individual cases focus on measures that can prevent similar outcomes or adverse incidents or improve the care processes provided to this group of patients. These recommendations should resist the temptation to apportion blame to individuals. The department needs to construct the meetings to integrate the system and administrative issues underlying unexpected outcomes and discuss technical/clinical-related issues.

Physicians who feel they work in a 'safe' environment are likelier to self-report events and offer them for discussion.

Key words: patient safety; quality improvement; morbidity & mortality review

Introduction

Institutional mortality rates can be used to monitor the quality of hospital care. [1, 2] The service must be safe and accountable enough to ensure that unexpected outcomes are unlikely to result from system failures.

Morbidity and Mortality (M&M) reviews are crucial tools in the Patient Safety First and Safer Patient Initiatives, which aim to reduce in-hospital mortality rates.

M&M reviews potentially provide accountability for the attending physicians and are an indispensable learning tool for faculty and residents. [3, 4] At Aga Khan University (AKU), this tool is embedded in the curriculum and is demonstrated in this patient safety seminar for residents and faculty.

Adverse outcomes are attributed to physician error (omission or commission) and process/system failures. [5] Understanding these sources of error could drive quality improvement and provide some assurance within the organization's governance processes. [6]

The balance between discussion of physician error and system failure is crucial in affording M&M attendees opportunities for learning and introspection/reflection.[5] Too much focus on individual errors leads to fear, embarrassment, and loss of reputation, creating a reluctance to discuss the mistakes and provoking defensive behaviour openly. [3] This contradicts the utility of the M&M as a quality improvement tool. [4] To be an effective tool in identifying and engaging physicians in system improvement, the conference needs to focus not on the actions of individuals but rather on the educational aspects and quality improvement. [7]

Physicians may also be apprehensive about litigation in the face of candid disclosure of errors of judgment.[7] However, caregivers have a responsibility to record, review, and learn from patients adverse outcomes or any compromise in the safety of patients subject to failure in the delivery of care or system of care.

A multidisciplinary forum to discuss M&M better lends itself to discussing system-based issues. [8,9] This would entail representation from multiple clinical and nursing units and hospital administrators. Indeed, increased staff awareness and an open discussion on the case presented can identify opportunities for systemic changes to improve patient care.

As an educational tool, the M&M is the 'golden hour' of surgical education. The nature of this session is intellectual, technically provocative, and, to some extent, showmanship.

Thus, the M&M discussion provides a unique opportunity for caregivers to improve the quality of care offered through case studies. It presents the healthcare team with an open forum for examining adverse events, complications, and errors that may have led to patients' illnesses or deaths. When the institution's leadership supports an organized structure and process implementation, the M&Ms better address the objectives related to learning and improving systems.(10, 11)

The Mortality and Morbidity Conference at the Aku

1.1 Defining surgical complication.

A surgical complication is any unexpected event that occurs within 30 days of the procedure and deviates from the anticipated uneventful recovery.[11,12]

If this occurs while the patient is still in the hospital, it is easily captured as the chief resident in surgery notes and records it.

Complications outside the hospital are only captured if the patient is re-admitted or is seen at the surgical clinic, and the attending physician reports them to the chief resident.

All reported complications are discussed at the AKU Department of Surgery regardless of academic merit.

1.2 The structure of the M&M.

The conference is a one-hour weekly meeting in which two cases are presented, allowing for a half-hour interrogation and discussion of each case. Currently, the same time frame is allocated for morbidity and mortality discussion, with no consideration given to the academic merit of the case. All cases are given equal importance.

1.3 Attendance.

The hospital by-laws mandate that all admitting physicians attend the weekly M&M conferences. The attending physician must attend when his/her case is being discussed.

All residents attend the conference as part of their curricular requirement, and the chief resident assigns one to prepare and present the case. Where feasible, the resident who managed the case made the presentation.

Other medical specialties are invited to attend on a need-to basis only when involved in the patient's direct care. This applies to the attendance of nursing and other allied health professions staff. Hospital administrative staff and other managerial unit heads need not attend the M&M conferences.

The rationale for this attendance criteria is to allow physicians to openly and candidly discuss medical errors in a protected/safe environment and only amongst peers. However, a significant disadvantage to this is that the group misses a multi-disciplinary perspective toward care and the crucial input of other health professionals in the holistic care of the patient, which significantly contributes to the outcome.

Another disadvantage is the absence of administrative staff at M&Ms. Without their participation, system issues tend to go largely unaddressed, and there is limited capacity to resolve them in this purely clinical/academic forum as it is currently constituted.

1.4 The format of the M&M:

The approach used by the department is outlined in **Table 1.**

Heading	Areas for inclusion
Situation	Statement of the problem, including: ● admitting diagnosis ● procedure or operation ● details of adverse outcome
Background	Clinical information pertinent to the adverse outcome, including: ● patient history ● indication for intervention ● laboratory and imaging studies ● procedural details ● hospital course – non-procedural events related to the outcome ● how and when the complication or event was recognized ● management of the complication or event

Assessment and **a**nalysis	Evaluation of what happened and why: • Describe the sequence of events leading to the adverse outcome • Why it occurred—describe contributory factors and how these interacted across the system. Prioritize as appropriate. Tools such as the PAcE analysis model * are currently NOT being used consistently, as discussions are mostly physician-based. • What could have been done differently?
Review of literature	Present the evidence base relevant to the complication.
Recommendations	● identify how the complication or event could have been prevented or better managed ●. Identify learning points from the case ● identify actions to prevent or minimize future reoccurrence.

*__The PAcE analysis model__ (**P**eople, **Ac**tivity and **E**nvironment analysis model) of the system approach to analyze patient safety incidents and problems in the health care setting (Appendix 1):

This model helps understand the interactions and relationships between the systems that contribute to adverse outcomes.

For each episode of patient care being discussed and analyzed, an attempt is made to understand the interactions and relationships between different elements of the care system and how these combine to contribute to the incident. Changes and improvements can hence be implemented by identifying, considering, and prioritizing these interactions.

1.5 Record and Reporting

Every case discussed at the departmental level is reported in a standard format and shared with the Chief of Staff (CoS) office. The CoS is the custodian of quality at the institution and serves as Associate Dean, Clinical Affairs.

Reviewing the M&M worksheet by the CoS and the head of surgery services identifies gaps in patient care that may require escalation to a root cause analysis or any other corrective action and interventions. In this case, a root cause analysis refers to a system/administrative-based investigation of causality rather than a technical/clinical perspective (see below, section 1.6).

This report and record of the M&M proceedings also serve as a feedback tool to the resident. A post-M&M debrief always occurs with the presenting resident, attending faculty who managed the case, and the departmental Program Director to ensure that learning has occurred and some 'take home' points have been recorded.

1.6 Root Cause Analysis (RCA)

Morbidities and Mortalities analyzed as being due to a system or administrative process failure or having potential medico-legal implications are subjected to an RCA. Under the quality department, the CoS would thus constitute a team that would examine the systemic and administrative events surrounding the adverse outcome, aiming to identify (and correct) gaps in the quality of care.

Flow charts detailing the sequence of the events are generated after interrogating the clinical records, and these are mapped against the ideal process flow and analysis of the points of deviation tabulated (see Table 2).

Opportunity for Improvement/Point of Deviation	Root Cause of Deviation	Process Improvement	Measures of Implementation Effectiveness	Responsibility	Timeframe

Table 2: Analysis of the Points of Deviation:

Discussion and Recommendations for the M&M meeting for the Department of Surgery Aku.

To strengthen the utility of the M&M forum as a tool to improve the quality of care at the institution, the focus should highlight systems and processes of care and not merely focus on individual performance. (11, 12)
Recommendations from individual cases should focus on measures that can prevent similar outcomes or adverse incidents or improve the care processes provided to this group of patients. These recommendations should resist the temptation to apportion blame to individuals. It is the responsibility of the meeting chair to steer the discussion appropriately.(13),(14)

Actions to implement the recommendations should be initiated, and the department chair is responsible for overseeing progress in their implementation.

As a tool for learning, reflection, and reference, the outcomes and decisions of these meetings should be documented in a brief meeting report.

Even though this is done under the RCA process, the department should also construct the meetings to integrate the system and administrative issues underlying unexpected outcomes. As such, having a multidisciplinary attendance, including clinicians from nursing, medical and allied health, and hospital administration, would address recurring system issues that may cause adverse events.

M&Ms should screen all adverse outcomes and select specific cases for maximum benefit for in-depth discussions. Thus, M&Ms should be used to analyse the circumstances surrounding care outcomes critically. These outcomes should include selected deaths, such as "on table" deaths, unexpected deaths of a recovering patient, serious morbidity, such as unexpected sepsis, unexpected functional limitation post-procedure, and significant deviations from accepted clinical practice.

These review meetings and processes are powerful drivers of the safety culture. They increase motivation, resulting in improvements in harm minimization practices and improved promotion of organizational learning.

Promoting the institutional culture of safety would enhance the reporting and capture of morbidities that occur outside the hospital, which currently rely solely on physician self-reporting. Physicians who feel they work in a 'safe container' environment are likelier to self-report events and offer them up for discussion. This culture of safety is critical in instilling the message that the purpose of the debate is not to assign blame for an error but to improve patient safety.

Conclusion

The M&M conference is essential to improving the quality of care in hospital clinical departments and ensuring patient safety. Multidisciplinary attendance incorporating relevant administrative attendance enhances the review process's ability to discuss system and process issues that affect clinical outcomes. Hospitals must provide an enabling environment for the conference forum of introspection and learning while appropriately addressing systemic problems.

What is known?

- The morbidity and mortality conference is an essential tool for reflection, learning, quality improvement, and promoting patient safety.

What is not known?

Our region has no published documentation on utilizing the M&M conference in hospitals. Therefore, this raises awareness and documents our practice as a teaching institution.

Limitation of the Study

This is a departmental perspective of a single institution's morbidity and mortality review process. It would be recommended that the M&M conference have a qualitative impact on clinical outcomes and resident learning.

Conflict of Interest

The authors declare no competing interests.

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Appendix 1.

The PAcE analysis model:

Appendix 2. The Morbidity and Mortality worksheet

The Aga Khan University Hospital, Nairobi

Morbidity and Mortality Worksheet

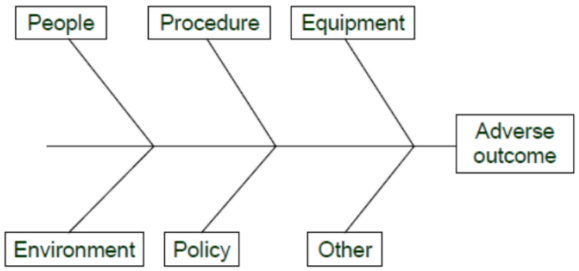
Date of M&M Presentation:	
Resident Presenting (Initials):	**Attending Physician (Initials):**
Department:	**Reg. No:**

Brief Overview of Case
• **Rationale for selection** • **Diagnosis** **Complication(s)**

Outline the Timeline of Events

Identify all potential causes of the complication(s)

(perform root cause analysis and fishbone diagram to help)



Describe how the complications could or should have been prevented, lessened, or managed.

What does the Evidence-Based Literature Review Tell Us?

Did the issue occur as a problem related to:
(Mark as applicable)

Problem Area	Yes	No	Describe
Patient Assessment			
Diagnosis			
Communication between caregivers			
Documentation			
Physician Care provided or not provided			
Nursing Care provided or not provided.			
Care from other healthcare professionals			
Application or not of system-based practice, policy, protocol			
Patient and family			

Identify the knowledge gaps.

1. **What is known?**
2. **What is not known?**

Describe in detail the issue(s) you have identified and the critical take-home points you will make regarding that issue.

Explain what can be done to change clinical or system practice so that this situation does not reoccur.

What will be the Take Home Points?

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