

TREATMENT OF MEDICAL ERROR ISSUES AT SURGICAL M&M CONFERENCE

Prof. Alberto R. Ferreres, MD, FACS



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Medical Error

The failure of a planned action to be completed as intended (error of execution) or the use of a wrong plan to achieve an aim (error of planning)

I.O.M., "To Err is Human", 1999



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The first great error in Surgery is unnecessary operation, and the next is the undertaking of a major operation which the surgeon is not technically fitted to perform

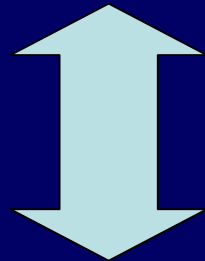
Thorek M, 1937



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Distinction between

Adverse Event



Medical Error



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Frequency of adverse events in Surgery

- **0.6%-33%**

Couch NP, Tilney NL, Rayner AA te al, N.Engl.J.Med., 1981

Rosen AK, Geraci JM, Ash AS et al. Med. Care, 1992

- **17% with complications**

Khuri S, Daley J, Henderson W et al; J.Am. Coll.Surg., 1995

- **Surgical admissions higher index than clinical ones**

Kable AK, Gibberd RW, Spigelman AD, Int. J. Qual.Health Care, 2002



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M & M Conference

- This “gold hour” is the most important hour in the surgical week
- The only time when one can dispassionately and scientifically dissect an error and learn how to avoid that error in the future



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**“...If the set bone festers, and the slave suffers,
the conclave of elders will convene and deliberate
lest the healer know not of his error”**

Edwin Smith Papyrus (case XVI)

**Breasted JH: The Edwin Smith Papyrus, University of
Chicago Press, IL, 1930**



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Historical Background

1910-1912: Cabot

1912: Codman_ end result system

1917: ACS_ standardized case report system

1935: Anesthesia Mortality Committee

1940: Anesthesia Study Commission

1983: ACGME_ mandated “weekly review of all complications and deaths”



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M&MC

- Peer review of surgical judgment
- Analysis of outcomes
- Statistical instrument
- Quality management tool



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M&MC

It is designed to identify medical errors and complications in order to learn from them to improve medical practice.

It is an institutional expression of our responsibility to face and profit from our mistakes, both as individuals and as a profession.

Orlander JD et al

Acad.Med., 2002; 77: 1001-06



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Guiding Principles of M&MC

- **Medicine is difficult and fallible**
- **Errors are inevitable, but they give us a tool to improve our skill as physicians**
- **The goal is not to criticize but to profit by sharing and examining our experience.**



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For decades the M&MC was state-of-the-art in error analysis and prevention, but it has fallen behind the current understanding of error analysis and prevention

There are 3 major reasons for this:



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- 1) Developed in an era of “one surgeon, one patient”
- 2) Fails to appropriately analyze or address the complex systems in which modern surgeons functions
- 3) There has been an explosion in the science of understanding, preventing and ameliorating human error

An understanding of these 3 factors must precede any discussion regarding strengths and weaknesses



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Surgeons have traditionally insisted on “a fierce ethic of personal responsibility”

*Gawande AA, Zinner MJ, Studdert DM et al,
Surgery, 2003; 133: 614-621*



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- **Cultivation of individual accountability is essential in training superb surgeons**
- **In 2006, a focus on individual accountability simply does not go far enough, often leading to a single cause (“error in surgical judgement”) when multiple causes contribute**
- **M&MCs do not focus on near misses**



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Principles of individual responsibility should not be translated to approaches that involve “naming, blaming and shaming” when errors occur

Casarett D, Helms C, Acad. Med., 1999; 74: 19-22



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Weaknesses

- Intense focus on individual responsibility
- No consideration of systems involved
- Non supportive environment o conducive to learning
- Near misses rarely discussed
- Error prevention are not adequately emphasized
- No systemic follow-up



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CONS

- Culture of surgical teams
- Hierarchical structure
- Constant drive to achieve excellence
- Emphasis on personal accountability
- Sharp focus on personal responsibility



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Surgical Errors vs. Errors in the Aviation Industry



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The “system” of surgical care

Any trauma patient in an academic medical center will be cared by:

- A host of physicians and surgeons
- Nurses
- Respiratory therapists
- Pharmacists
- Other providers
- Several hundred pieces of equipment, computers, software and complex machinery support



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High Reliability Organization (HRO)

- 1) Constantly concerned about failure and insist on learning from failure
- 2) Explore contributing factors, go beyond simple explanations
- 3) Intensely focused on front-line operations
- 4) Develop safety nets
- 5) Rely on expertise regardless of hierarchy

Weick K, Sutcliffe K, 2001



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In order to assess the extent to which M&MC promotes development of shared mental models, there is a need to measure the extent to which conference participants acquire consistent knowledge of error and injury prevention strategies and reach agreement with respect to the analysis of cases presented during the meeting.



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The development of shared or compatible mental models is highly effective in improving both individual and team performance

Gaba DM:

Human error in dynamic medical domains, 1994



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M&MC MATRIX

- Length
- Specific recommendations for case selection
- Preparation
- Moderation
- Presentation content and format
- Communication
- Discussion



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M&MC EVALUATION (I)

1) In your opinion, was this complication avoidable?

Yes

No

Not sure

2) In your opinion, was consensus reached?

Yes

No

Not sure

3) Which of the following factors was the primary cause?

Diagnostic error/s

Error/s in judgement

Technical error/s

Nature of the disease

Others



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M&MC EVALUATION (II)

4) When, during the admission, did the primary cause occur?

Pre-op

Intra-op

Post-op

5) Which of the following actions could prevent similar problems in the future?

Modified patient selection

Surgical timing

Improved communication

Improved surgical technique

Improved post-op care: diligence knowledge judgement

Improved access to lab & diagnostic tests

Alternative surgical decisions

Improved preop. preparation of surgical team

improved intraop. judgement

Improved communication care team

Altered level of postop. control



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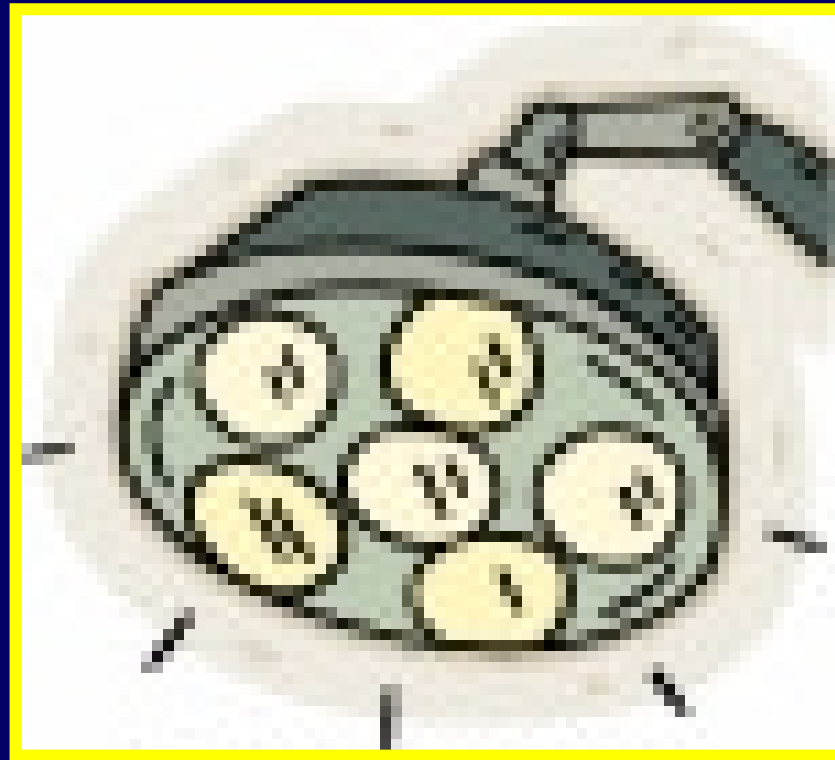
M&MC for the 21st. Century

- **Error Analysis**
 - **Root cause analysis**
 - **HFMEA (Health mode and effect analysis)**
- **Commitment to developing systems approaches to preventing, catching and ameliorating error**



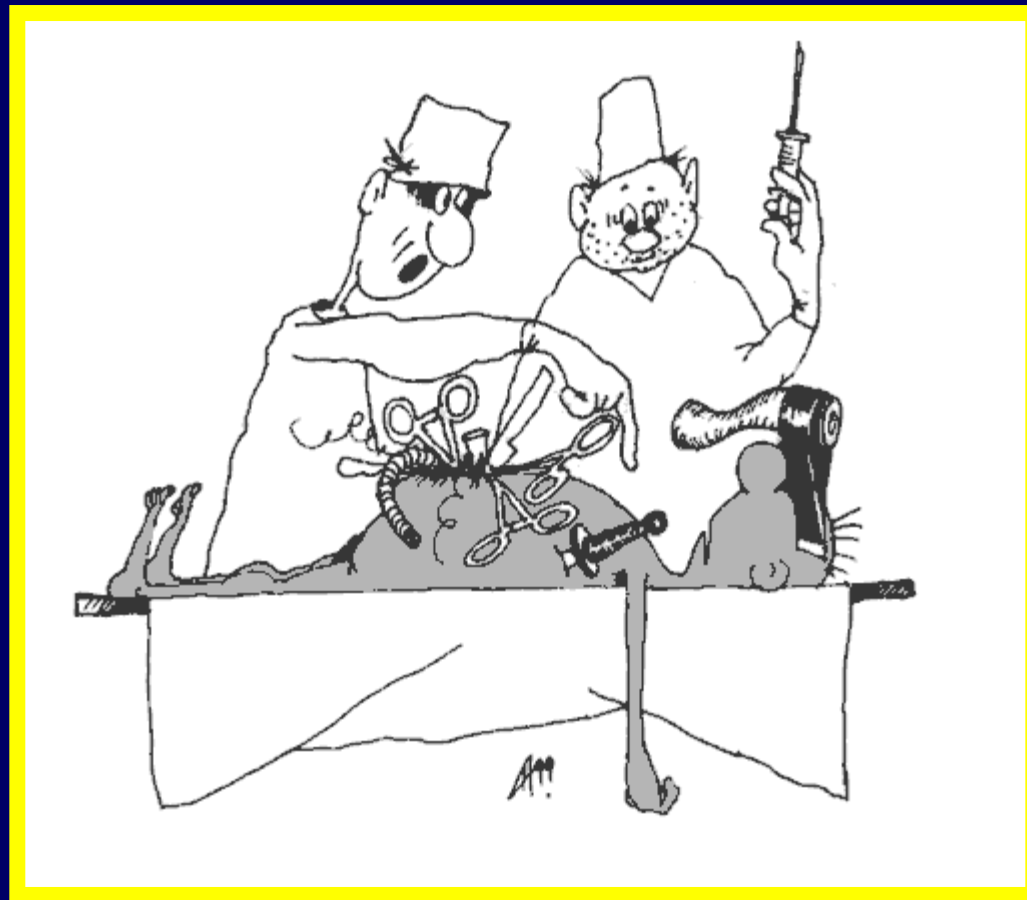
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Errors in the OR



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Foreign Bodies



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Wrong site surgery

- Wrong site
- Wrong side
- Wrong body part
- Wrong patient
- Wrong procedure
- Wrong level (spinal surgery)



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- **Accountability**
- **Excellence**
- **Honesty**
- **Integrity**
- **Mutual respect**

Adverse events, errors and near misses should be considered learning opportunities

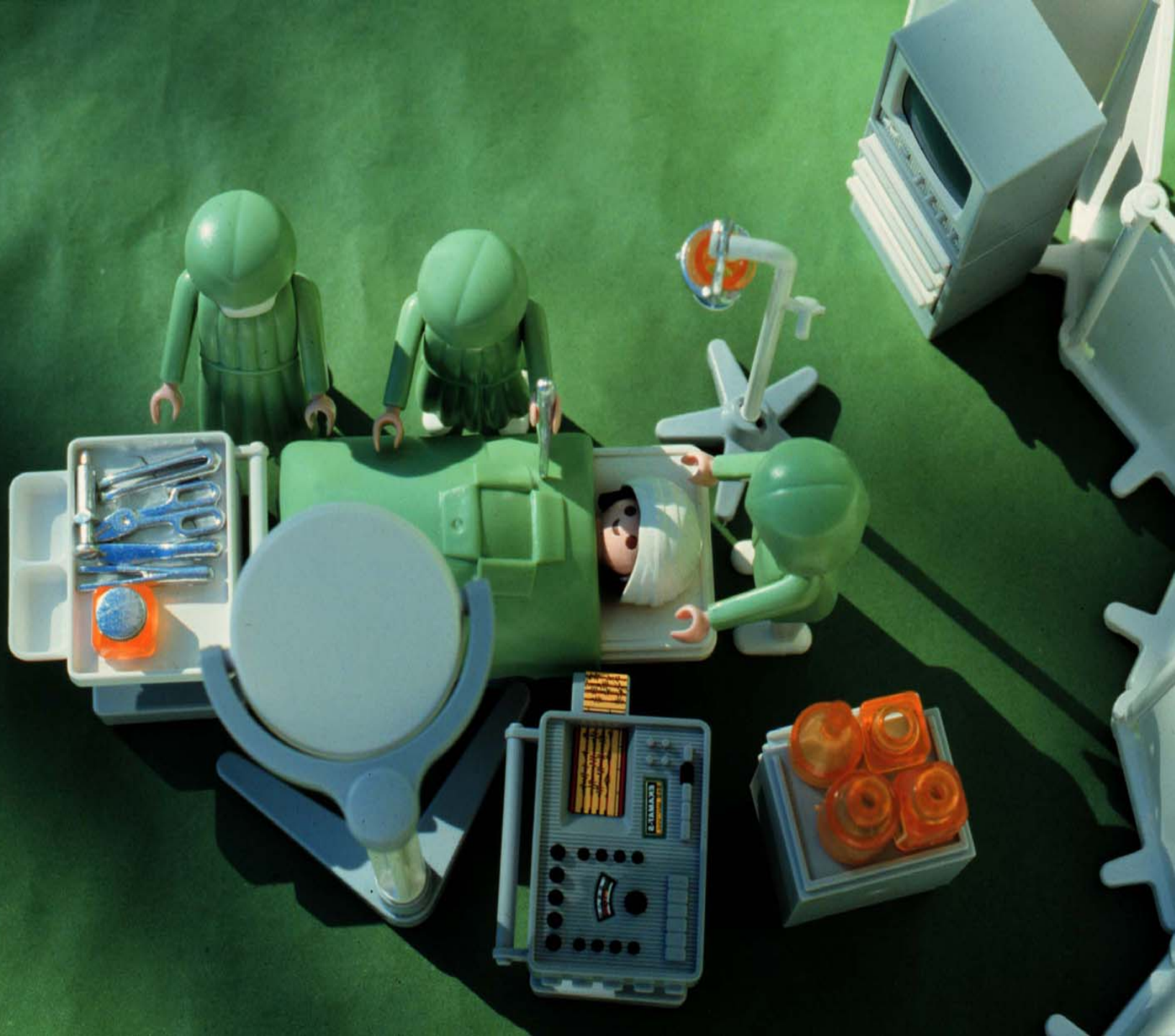


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Strategies to enhance the value of M&M

- Better preparation for the conference
- Use of evidence-based information
- Focussed discussion of cases
- Discussion of error within systems' context
- Greater participation and involvement of faculty
- Maintenance of records
- Development of educational framework
- Routine discussion of near misses







Thank you for your attention!