Morbidity and Mortality Conferences of the Philippine General Hospital Department of Surgery: A Survey on the Perception of Surgical Trainees to Improve Patient Safety

Ana Melissa Hilvano-Cabungcal, MD,[1*] Jojiemar S. De Pano, MD[1*] and Marie Carmela M. Lapitan, MD[1,2]

[1]*Division of Urology, Department of Surgery, College of Medicine and Philippine General Hospital, University of the Philippines Manila*
[2]*Institute of Clinical Epidemiology, National Institutes of Health, University of the Philippines Manila*

ABSTRACT

Background and Objective. Morbidity and mortality conferences (M&M) have been an important part of the hospital governance since the early 1900s. It has been shown to improve overall quality of care, minimize adverse occurrences and preventable fatalities, and provide chances for educational learning. However, medical trainees have different perceptions of M&M conferences which may affect its effectiveness in improving patient outcomes. The aim of this study is to determine the perception of surgical trainees towards M&M conferences.

Methods. The study is a questionnaire-based survey among surgical trainees of the Department of Surgery, Philippine General Hospital (PGH), for the training year of 2023. The survey consisted of 24 questions on their perception regarding the conduct of M&M. A Likert scale was used by the respondents to rate their perceptions (1 – negative, 10 – positive). Descriptive analysis and ANOVA were used to summarize the responses to the survey.

Results. A total of 64 surgical trainees from the Department of Surgery responded to the survey (response rate = 71.9%). Most respondents (68.8%) reported that the ideal frequency of M&M conferences is once a month. 78.1% were not aware of the inclusion criteria of the cases discussed in the departmental M&M conferences. Most reported (64.1%) that M&M conferences did not regularly include data on outpatient events. A mean rating of 5.2 was observed among surgical trainees on how judgmental they feel about the environment of M&M conferences. Surgical trainees were willing to talk openly about their complications (mean rating 7.1). They were fearful of criticism (mean rating 4.4) and the negative repercussions of their presentations (mean rating 4.1) during M&M conferences. The respondents perceive M&M conferences to be conducive for learning and service improvement with both having a mean rating of 7.8. Most felt that M&M conferences focused on the individual performance (mean rating 7.3) while participants were divided regarding the focus on systems and processes (mean rating of 5.6). In terms of dissemination, about half (45.3%) mentioned that they did not know how the discussions/outcomes were disseminated following an M&M conference. The mean rating of willingness to talk openly of complications were significantly higher among senior residents (7.7) compared to junior residents (6.3) (p=0.008).

Conclusion. This study observed variability in the perceptions of surgical trainees on M&M conferences. Surgical trainees tend to feel fear of criticism and negative repercussions during M&M conferences. There are opportunities for improving the format of M&M in terms of clarity of inclusion criteria and dissemination, and focusing on systems and processes rather than individual faults.

Keywords: clinical conference, training, survey

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Corresponding author: Ana Melissa Hilvano-Cabungcal, MD
Division of Urology
Department of Surgery
Philippine General Hospital
University of the Philippines Manila
Taft Avenue, Ermita, Manila 1000, Philippines
Email: afhilvanocabungcal@up.edu.ph
ORCiD: https://orcid.org/0000-0003-1363-0231

INTRODUCTION

The early 1990s marked the advent of morbidity and mortality conferences (M&M).[1] It has been used by different medical specialties with the goal of decreasing adverse outcomes and improving patient safety.[2] These conferences are usually performed by reviewing cases and identifying instances where management could be modified to avoid unfavorable outcomes.[3] Different ways to conduct an M&M conferences exist and a shift to a systems based approach on M&M conferences has been seen in the last 20 years.[4-6]

Mortality and morbidity conferences are utilized all around the world. Different institutions have endorsed its use on its constituents. The Accreditation Council for Graduate Medical Education (ACGME) have mandated residency programs in the United States to have regular M&M conference to supplement resident training[7] while surgeons in the United Kingdom are recommended to attend regular M&M conference as advised by the Royal College of Surgeons of England (RCS)[8].

Its effectiveness in teaching medical students and resident trainees, and improving patient safety has been suggested in multiple studies.[9-11] These conferences are a unique avenue where healthcare professionals can examine adverse outcomes together to derive knowledge without contempt.[12] The best practice for M&Ms include a structured format with thorough analysis of error process, action points, and a system of follow-up. These engage clinicians in an open, collaborative, and transparent review process for system improvement that ultimately leads to improved patient safety.[11] However, negative perceptions towards M&M conferences were seen especially in residents in training.[12-14] Although residents typically view M&M conferences as a necessary tool for education and quality improvement, there is still fear to report adverse patient events due to fear of criticism and blame.[15]

The Department of Surgery of the Philippine General Hospital regularly conducts M&M conferences. The case presentations are done by the surgeon for operative adverse events while non operative ones are presented by a senior resident. No studies have been done to investigate the perceptions, whether positive or negative in certain aspects of surgical residents of the PGH towards M&M conferences. Hence, this study was conducted with the aim of describing the knowledge, attitudes, and perceptions towards M&M conferences of PGH Department of Surgery residents. Also, it aimed to determine if there is a difference in knowledge, attitudes, and perceptions between junior and senior residents as these may change as residents progress thru their 5 to 6 year training program.

METHODS

The study is a cross-sectional study that made use of a questionnaire survey among the surgical trainees of the Department of Surgery, Philippine General Hospital in November 2023 and is entirely self-funded.

After obtaining institutional ethics board approval and permission from the Chair of the Department of Surgery, an online survey using the modified questionnaire derived from the study of Sinitsky et al.[8] was sent to all the surgical trainees of the Department of Surgery. All were requested to answer the survey so as to eliminate potential bias that may be brought about by the level of experience and belonging to a specific specialty. Fifteen out of the 18 questions from the published survey by Sinitsky[8], which was directed towards surgical consultants, were adapted and nine questions were added. The added questions mostly focused on the trainee's time to prepare and mode of presentation during the conference. An informed consent was also sent together with the online survey. The survey was hosted and distributed via a Google Forms email under a password-protected account of the Division of Urology.

The survey consisted of 24 questions which utilized a combination of open and closed questions. Demographic data collected from the respondents included surgical training year level and specialty designation. No survey participant identifiers were collected throughout the study.

Surgical training level was classified as junior resident (i.e., 1st to 3rd year trainee) or senior resident (i.e., 4th year or higher trainee). Specialty designations were classified as: General Surgery, Urology, Plastic Surgery, Thoracic Surgery, Vascular Surgery, Cardiac surgery, Pediatric Surgery, Surgical Oncology, Head and Neck Surgery, Colorectal Surgery, Hepatobiliary Surgery, and Trauma Surgery.

The survey questionnaire consisted of seven parts. Two questions determined the level of involvement of the respondents in M&M conferences. Two questions determined the knowledge of the respondents regarding the inclusion criteria used in M&M conferences. Seven questions were on the respondents' perceived format of the M&M conferences. Two questions determined the respondents' opinion regarding preparation for M&M conferences. Four questions determined the respondents' perception of judgementalism, willingness to talk openly of complications, fear of criticism, and fear of repercussion during M&M conferences. Three questions determined the perception of respondents in terms of conduciveness of M&M conferences to learning and service improvement, and M&M focus on individual performance and systems/processes. The questions on perceptions used a Likert scale (1-10) with negative perceptions represented in the lower end of the scale while positive perceptions were represented in the higher end of the scale. Lastly, one question determined the respondents' perception on dissemination of information following an M&M conference. (Appendix)

All survey data were downloaded into an Excel spreadsheet for descriptive and analytical analysis. Categorical variables were summarized as counts and percentages. Unpaired T-test was used to compare the survey results of

both senior and junior residents. Results were considered statistically significant if $p < 0.05$.

RESULTS

A total of 64 out of a total 89 surgical trainees chose to participate in the study and answer the questionnaire (71.9% response rate). Fifty-six percent (56%) were senior residents while 44% were junior residents. The same percentage breakdown of 56% and 44% were observed for those who have presented and those who have not presented, respectively in an M&M conference. Nearly half (45.3%) of the respondents were general surgery trainees, the rest were in the subspecialties. Around 69% of the respondents have attended more than half of the scheduled M&M conference during the last 12 months.

In terms of knowledge regarding the inclusion criteria used in M&M conferences, majority (78.1%) were really not aware of the inclusion criteria for a case to be discussed at an M&M conference. In terms of the respondents' general perception about M&M conferences, most participants (68.8%) reported that the ideal frequency of M&M conferences should be once a month. More than half reported (64.1%) that M&M conferences did not regularly include data on outpatient events. All reported that surgical trainees and consultants should routinely attend the department's M&M conferences. More than half of the respondents opined that medical students (76.6%), nursing staff (56.3%), and staff from other clinical specialties (54.7%) should attend the M&M conferences. In terms of the respondents' perceived format for M&M conferences, half indicated that two hours or more were needed for M&M conferences and 45.3% suggested that four is the ideal number of cases to be discussed in one M&M conference. Fifty percent of the respondents preferred a face-to-face M&M conference while only 29.7% opted for a hybrid set-up. The respondents who preferred a face-to-face format cited better communication, less technical difficulties, and more interactive discussions as some of the reasons for their preference. In terms of the respondents' perception regarding preparation for M&M conferences, almost half (45.3%) reported that the presenters were only informed a week prior their scheduled M&M conference. Only 42.2% of the respondents noted that enough time was given to prepare for a scheduled M&M conference. In terms of dissemination, almost half (45.3%) mentioned that they did not know how the discussions/outcomes are disseminated following an M&M conference.

Table 1 shows the perceptions of residents on M&M conferences. Notable in the results is the general fear of criticism from peers (mean 4.4) and fear of negative repercussions resulting from completely open discussions of mortalities and morbidities (mean 4.1). Despite these, there was still generally a feeling of openness to talk about complications or mortalities with a mean rating of 7.1. Moreover, the trainees felt that the M&M conferences were highly conducive to both learning and service improvement, both with mean scores of 7.8. Notable as well was that trainees tend to view M&M conferences as being focused on evaluating individual physician performance (mean 7.3) rather than systems and processes (mean 5.6).

Table 1. Perceptions of Surgical Trainees on M&M Conferences

	Mean±SD
How judgmental is the environment within an M&M conference? (1 = very judgmental, 10 = non-judgmental)	5.2±2.1
How would you rate your own willingness or ability to talk openly about your complications/mortalities during the M&M conference? (1 = unwilling/unable, 10 = willing/able)	7.1±2.1
Please rate your fear of criticism from your peers during M&M conferences (1 = very fearful, 10 = fearless)	4.4±2.8
Please rate your fear of negative repercussions resulting from completely open discussion of your complications/ mortalities (1 = very fearful, 10 = fearless)	4.1±2.3
How conducive do you feel your M&M conferences are for learning? (1 = not at all, 10 = highly conducive)	7.8±1.7
How conducive do you feel your M&M conferences are for service improvement? (1 = not at all, 10 = highly conducive)	7.8±1.9
To what extent do you feel individual's performance (e.g., decision-making) receives the focus of M&M discussions? (1 = not at all, 10 = exclusively about individuals' performance)	7.3±1.4
To what extent do you feel systems and processes (e.g., equipment issues, staffing problems, pathway deficiencies) receive the focus of M&M discussions? (1 = not at all, 10 = exclusively about systems and processes)	5.6±1.9

As part of the study objectives, Table 2 shows no significant differences were observed between senior and junior residents in terms of judgmental environment ($p=0.561$), fear of criticism ($p=0.265$), fear of negative repercussions ($p=0.076$), conduciveness for learning ($p=0.251$), conduciveness for service improvement ($p=0.090$), focus on individuals' performance ($p=0.240$), and focus on systems and processes ($p=0.561$). However, junior residents were significantly less willing to talk openly of complications compared to senior residents ($p=0.008$).

When asked about the factors that hindered a trainee's openness in discussion of complications during an M&M meeting, various reasons were cited. These include inadequacy to answer questions, possible effect on relationship with peers and consultants, and losing the trust of the medical team (Table 3).

DISCUSSION

As part of the hospital governance system, morbidity and mortality conferences (M&M) can serve three purposes: enhance patient safety by lowering adverse events and avoidable fatalities; enhance overall quality of care; and serve as instructive learning opportunities.[16] Results of this study show that surgery trainees perceive that M&M conferences done within the department are conducive to both learning

Table 2. Comparison on Mean Perception Scores on Morbidity and Mortality Conferences between Senior and Junior Residents, (0 – negative perception, 10 – positive perception)

	1st-3rd year, n=28	4th-6th year and above, n=36	*p*-value
How judgmental is the environment within an M&M conference?	5.4±2.3	5.1±1.9	0.561
How would you rate your own willingness or ability to talk openly about your complications/mortalities during the M&M conference?	6.3±2.1	7.7±1.8	0.008
Please rate your fear of criticism from your peers during M&M conferences	4.0±2.6	4.7±2.9	0.265
Please rate your fear of negative repercussions resulting from completely open discussion of your complications/mortalities	3.6±2.2	4.6±2.3	0.076
How conducive do you feel your M&M conferences are for learning?	8.0±1.4	7.5±1.9	0.251
How conducive do you feel your M&M conferences are for service improvement?	8.3±1.4	7.4±2.1	0.090
To what extent do you feel individual's performance (e.g., decision-making) receives the focus of M&M discussions?	7.6±1.3	7.2±1.4	0.240
To what extent do you feel systems and processes (e.g., equipment issues, staffing problems, pathway deficiencies) receive the focus of M&M discussions?	5.8±2.0	5.5±1.9	0.561

Table 3. Frequency and Distribution of Trainee's Identified Factors that Hindered Openness to Discuss Complications during M&M Meetings

	Inadequacy to answer questions	Relationship effect with peers and/or consultants	Losing the trust of the medical team	No answer
1st-3rd year n=28	3	10	2	13
4th-6th year and above n=36	2	11	1	22

and service improvement with both having a mean rating of 7.8. This rating may indicate that surgical trainees positively affirm that the objectives of M&M conferences are met.

Different studies have reported that M&M conferences vary widely in format and attendance from different institutions.[16,17] This study showed preponderance of most surgical trainees to monthly, 2-hour M&M conferences with four cases, and conducted face-to-face. Although there is variation in preference of surgical trainees for frequency and duration of M&M conferences, all of the participants feel that M&M conferences should be attended by both surgical trainees and consultants while about half also agreed that other clinical specialties and nursing staff should also be present. Cases presented in M&M conferences are often complicated and have prolonged courses with multiple clinical specialties, as well as the nursing staff, heavily involved in the care of the patient, and so their presence could enhance the learning experience of the team, identify gaps in systems and processes, and subsequently improve patient outcomes. The Philippine General Hospital, being an academic center and the National University Hospital for the Health Sciences, medical students and interns in their clinical rotations are part of the team managing patients. About three-fourths of survey respondents mentioned that medical students should also be present in M&M conferences. This may serve as a good venue for exposure to a wider variety of diseases, management of difficult cases, and collaborative approach to patient care.

A study by de Vos et al. in 2018 demonstrated that there are unmet expectations in M&M conferences. Their study utilized a mixed methods approach among 135 surgeons, residents, physician assistants, and medical students from two teaching hospitals. They observed that expectations were comparable with more than 80% of participants anticipating that M&M conferences would be blame-free, mandatory for surgical trainees and consultants alike, education and quality focused, and that it would influence changes in clinical practice. A few participants in their study observed mandated faculty attendance, quality assurance focus, and changes to practice in comparison to expectations. They also noted that the participants were more enthusiastic about having a quality assurance focus and changes to practice.[17]

In this study, the respondents' perception suggest a blameful M&M environment since their mean rating suggested a feeling of being judged or criticized during M&M conferences. While there is willingness or capability to talk openly during M&M conferences, the participants in this study still showed fear of criticism and negative repercussions. Moreover, there is a general perception that the main focus of the M&M conference is on evaluating individual trainee performance rather than systems and processes. A conscious shift in the focus from individual performance to evaluation and subsequent institutionalization of improvements in systems and processes may shift the general feeling of fear and criticism, and negative repercussions to one of enthusiasm about being part of a quality assurance process that ultimately leads to better patient safety.

The analysis of the perception of senior and junior residents showed a significant difference between the two groups in their willingness to talk openly about their morbidities and mortalities. This may be due to a feeling of lack of clinical experience or theoretical knowledge that the junior residents may have during their first few years in training compared to their more experienced senior colleagues.

Other notable findings in the study that can be addressed by the department include the following: most participants were not aware of the exact inclusion criteria for a case to be included in an M&M conference, lack of data on outpatient events, and most participants were not aware of how to obtain the discussions or outcomes following an M&M conference. These are opportunities for improving the format and conduct of M&M conferences in the department to be able to maximize its potential in teaching its surgical trainees.

A review of the department's M&M conference guidelines by the surgical trainees, with emphasis on the inclusion criteria, would be beneficial in setting the expectations of the trainees. Regular inclusion of outpatient events during M&M conferences will supplement the discussions and widen the variety of cases and scenarios discussed thus providing more learning opportunities. Including the nursing staff and staff from other clinical departments in M&M conferences can assist the entire medical team in addressing complications, offering additional insight on cases, and promoting a comprehensive, team approach to medical care. Choosing cases for M&M conferences earlier allows for ample preparation and study time for surgical trainees, potentially reducing fear and anxiety during the conferences, and fostering more effective discussions. Standardizing the dissemination of discussions after M&M conferences ensures that surgical trainees, as well as all other members of the surgical team, have a structured way to review past complications. The outcomes of these discussions, particularly those that have identified shortcomings in systems and processes, must be documented and further analyzed, and changes must be institutionalized for better training of resident physicians, and more importantly to enhance patient safety and improve patient outcomes.

In summary, surgical trainees in the Department of Surgery view M&M conferences with a negative perception. Although there is overall willingness to openly talk about their complications, there is still room for improvement with regard to the judgmental and blameful M & M environment that currently exists. Focus on systems and processes during M&M conferences can be increased to highlight solutions that are often overlooked in usual M&M setting. A review of the existing department guidelines for M&M conferences by both the surgical residents and consultant staff can be done to ensure objectives are met and accomplished. The surgical trainees still view M&M conferences as an important tool for learning and service improvement. Continuing its practice ensures regular review of complications and errors which contributes to the enhancement of healthcare quality. It provides opportunities for healthcare professionals to analyze outcomes, thus fostering a culture of continuous improvement. These conferences can be viewed as educational forums where the experience of senior healthcare professionals are imparted to surgical trainees, equipping them with knowledge that prioritizes patient safety and outcomes. Training institutions should also consider M&M conferences as a way to "humanize" the practice of surgery since they foster collaboration, professional growth, and teamwork among medical providers and other healthcare staff.

The limitation of this study is its small study population. It was only conducted in one surgical training department which limits its ability to generalize a bigger population. This study also does not show the perceptions of the consultant staff which comprises the other half of M&M conferences. Understanding their perceptions may help in addressing the negative perceptions of surgical trainees in M&M conferences.

It is recommended that studies be done in other training departments, including the perceptions of the consultants, medical students, and other allied healthcare staff. It is also important to explore the obstacles encountered during M&M conferences, as it may shed light on some factors not usually discussed during department conferences. Given the regular use of M&M conferences for learning and service improvement, understanding its barriers may lead to increased resident competency and better outcomes.

CONCLUSION

This study observed variability in the practice and perceptions of surgical trainees on M&M conferences. The surgery trainees tend to feel fear of criticism, being judged, and negative repercussions during M&M conferences. There are opportunities for improving the format of M&M in terms of clarity of inclusion criteria and dissemination, and focusing on systems and processes rather than individual faults to enhance the learning experience of the entire surgical team, including consultants, nurses, medical students, and especially surgical trainees.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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APPENDIX

Survey Questionnaire

Surgical year level: 1st / 2nd / 3rd / 4th / 5th / 6th and above

Specialty designation (resident/fellow): General Surgery / Urology / Plastic Surgery / Thoracic, Vascular and Cardiac surgery / Pediatric Surgery / Surgical Oncology, Head and Neck Surgery / Colorectal Surgery, Hepatobiliary Surgery / Trauma Surgery

1. **Have you presented in a morbidity and mortality (M&M) conference?**
   Yes / No

2. **In your opinion, what should be the ideal number of M&M conferences done in one academic year?**
   ≥2x per month / Every month / Every 2 months / Every 3 months / Every 4–6 months / 2x per year / 1x per year / <1x per year / Never / I don't know / Other _____

3. **Are you aware of the inclusion criteria for a case to be discussed at your departmental M&M conference?**
   Yes / No (Moves to Q5 if the answer is No)

4. **What are these inclusion criteria? (Open question)**

5. **Does your M&M conference regularly include data on outpatient events? This refers to morbidity/mortality that occurs or is identified in the outpatient setting.**
   Yes / No / I don't know

6. **Please estimate the proportion of scheduled M&M conferences that you have attended in the last 12 months.**
   None / Rarely / Less than a quarter / Less than half / Around half / More than half / Almost all / All

7. **Which of the following should routinely attend your department's M&M conferences? Select all that apply.**
   Medical students / Surgical trainees from the Department of Surgery / Consultants from the Department of Surgery / Other clinical specialties / Nursing staff (at least one) / Managerial staff (at least one) / Other (please state)

8. **How early are the presenters informed of their scheduled M&M conference?**
   1 month or more / 2 weeks / 1 week / less than a week

9. **Are the presenters of the M&M conference given enough time to prepare?**
   Yes / No / I don't know

10. **How judgmental is the environment within an M&M conference? (1 = very judgmental, 10 = non-judgmental)**

11. **How would you rate your own willingness or ability to talk openly about your complications/mortalities during the M&M conference? (1 = unwilling/unable, 10 = willing/able)**

12. **Please rate your fear of criticism from your peers during M&M conferences (1 = very fearful, 10 = fearless)**

13. **Please rate your fear of negative repercussions resulting from completely open discussion of your complications/ mortalities (1 = very fearful, 10 = fearless)**

14. **Are there any other factors that hinder your openness in the discussion of your complications during an M&M conference? (Open question)**

15. **How much time should be allotted for M&M conferences?**
    2 hours or more / 1 hour / 30 minutes / less than 30 minutes /I don't know (Moves to Q18 if the answer is I don't know)

16. **What is the ideal number of cases to be discussed during M&M conferences?**
    More than 4 / 4 / 3 / 2 / 1

17. **Why do you think that your answer in Q16 is the ideal number of cases to be discussed? (Open question)**

18. **Which M&M setting do you prefer?**
    Face-to-face / Hybrid / Online / Any (Moves to Q20 if the answer is Any)

19. **What is the advantage of your setting of choice over the others? (Open question)**

20. **How conducive do you feel your M&M conferences are for learning? (1 = not at all, 10 = highly conducive)**

21. **How conducive do you feel your M&M conferences are for service improvement? (1 = not at all, 10 = highly conducive)**

22. **To what extent do you feel individual's performance (e.g., decision-making) receives the focus of M&M discussions? (1 = not at all, 10 = exclusively about individual's performance)**

23. **To what extent do you feel systems and processes (e.g., equipment issues, staffing problems, pathway deficiencies) receive the focus of M&M discussions? (1 = not at all, 10 = exclusively about systems and processes)**

24. **How are the discussions/outcomes disseminated following an M&M conference?**
    I don't know / M&M conference records are not available / They are given or sent to me in paper format / They are emailed to me / They are accessible but I do not know how to obtain them / They are accessible and I know how to obtain them / Other (please state)