

The Surgical Morbidity and Mortality Meeting as an Educational Tool

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Summary

Purpose: This study aimed at evaluating the educational value of the morbidity mortality meeting and benefits obtained from it so as to implement changes that can improve it.

Methods: Surgeons (n=13) at a university hospital responded anonymously to a questionnaire which was structured to monitor the educational activity of the morbidity mortality meeting. They indicated their perceptions on a five-point scale (*very poor, poor, fair, good and very good*). Depending on the results of the first questionnaire, these changes were made: 1) Standardisation of the notice of the meeting 2) Organization of the meeting 3) Review of the literature on the specific problems encountered. The participants were not aware of the results of the first questionnaire. Nine weeks later, the same questionnaire was repeated (n=12). Mann-Whitney test was used to compare the ratings of the two questionnaires.

Results: The attributes which showed significant improvement between the first and second questionnaires were a) organization ($p=0.004$; (median (range) 3 (2-5) compared with 5 (3-5)) b) knowledge is up-to-date ($p<0.005$; (median (range) 3 (2-4) compared with 4 (3-5)), c) discussion related to the problem (0.01, (median (range) 3 (1-4) compared with 4 (3-5)) and d) notice of the meeting ($p < 0.026$; (median (range) 3 (2-4) compared with 4 (2-5)).

Conclusions: This study showed that specific actions can improve the educational quality of the morbidity mortality meeting.

Key Words: Feedback, Meeting, Morbidity, Mortality, Surgery

Introduction

Surgical practice should be audited regularly to assure its quality. Most hospitals use the morbidity and mortality (M & M) meetings to serve this function¹. Nevertheless quality assurance is much more extensive than the M & M meeting. Many of the complications in hospitalized patients are not

identified by the M & M meeting². Besides auditing, the M & M meeting has an important educational role. Residents have identified education as one of the main goals of the M & M meeting^{3,4}. Discussion takes place in the meeting so as to recognize causes of complications and ways to avoid them. Accepting responsibility and discussion of clinical mistakes promotes learning

and improves practice⁵. The intention of the M & M meeting should be educational, and not punitive. This will promote honesty and truthfulness in the meeting and its outcome⁶. The aim of this study was to evaluate the educational value of the morbidity mortality meeting and benefits obtained from it so as to implement changes that can improve it.

Materials and Methods

The M & M meeting is run everyweek at The Department of Surgery, Mubarak Al-Kabeer Teaching Hospital, Kuwait for a period of one hour. Mubarak Al-Kabeer Teaching Hospital has 400 beds including 70 general surgical beds divided between two units. There were 4 consultants, 3 senior registrars and 6 registrars and residents working in General Surgery when this study was performed. They were requested to attend the meeting and report on their morbidity and mortality cases on a weekly basis. The complications and methods to avoid them were discussed. The same senior registrar

moderated the meeting for a full year, which included the study period. Each case was presented as follows. The entire case history, which had been abstracted, was presented. Transparencies or slides were used to illustrate the cases. The radiologist, pathologist or anaesthesiologist was asked to present his/her relevant information if needed. The responsible surgeon was asked to make his/her comments and evaluation of his/her management.

Surgeons responded anonymously to a structured questionnaire on the morbidity mortality meeting (Table I). They indicated their perceptions on a five-point rating scale (*very poor, poor, fair, good and very good*). After this, some changes were made. These included 1). Notice of the meeting: the cases for discussion were registered three days before the meeting and no more cases were accepted after that. Cases were selected for their educational value. The selection was usually decided after discussion with the consultants involved and represented both surgical units. The cases were announced two days before the

Table I
Median (range) Ratings of the Attributes in the Two Questionnaires

Attribute	First response (n = 13)	Second response (n = 12)	P value (Mann-Whitney test)
Notice of the meeting	3 (2 - 4)	4 (2 - 5)	0.026
Time allocated for the meeting	4 (3 - 5)	4 (3 - 5)	0.77
Scheduling of the meeting	4 (2 - 5)	4 (2 - 5)	0.95
Organization	3 (2 - 5)	5 (3 - 5)	0.004
Case presentation	3 (2 - 4)	4 (2 - 5)	0.25
Whether cases were representative	4 (2 - 5)	4 (3 - 5)	0.2
Discussion related to the problem	3 (1 - 4)	4 (3 - 5)	0.01
Satisfactory answers given to questions	4 (2 - 5)	3 (3 - 5)	0.94
Knowledge is up-to-date	3 (2 - 4)	4 (3 - 5)	0.005
Conclusions of the meeting	3 (2 - 4)	3 (2 - 4)	0.76
Contribution to patient management	3 (2 - 5)	3.5 (2 - 4)	0.85
Whether initiated further reading	3 (1 - 4)	4 (2 - 5)	0.45
Overall rating of the meeting	4 (3 - 5)	4 (3 - 5)	0.41

meeting. 2). Organisation: four major cases were discussed and the others were only reported. The time allocated for each case was limited to 15 minutes; 5 minutes for case presentation, 5 minutes for discussion, and 5 minutes to review the literature on the specific problem encountered. This was a general guideline, which was usually respected. Nevertheless there was some flexibility in the time allocated especially when cases were complex and needed more time. 3). A recent review article on the specific problem was summarized and presented after the discussion of each case. A typed list of the reviewed articles, which were discussed, was distributed after the meeting.

Nine weeks after these changes were made, the same questionnaire was repeated. This period was chosen because we thought that the participants will be able to remember the quality of the meeting before the changes were made and that the 9-week period will be enough to have an impact on the meeting. The participants were not aware of the results of the first questionnaire.

Statistics

Mann-Whitney test was used to compare the ordinal data of the two questionnaires. A *P* value of less than 0.05 was accepted as significant. Nonparametric methods were used because of the small number of observations⁷.

Results

All participants responded to the first questionnaire. One participant was absent when the second questionnaire was distributed. Table I shows the attributes and the median (range) rating of each attribute of both questionnaires.

The attributes which showed significant improvement in order were a) organization ($p = 0.004$), b) knowledge is up-to-date ($p=0.005$), c) discussion related to the problem ($p=0.01$) and d)

notice of the meeting ($p=0.026$). The conclusions of the meeting, the contribution to patient management and whether the meeting initiated further readings continued to have low ratings.

Discussion

The M & M meeting has a central role in recognizing the reasons for complications and ways to avoid them. Surgical residents value the morbidity mortality meeting as a very important tool for surgical training³. We aimed in this study to improve the educational value of this important meeting by recognizing its weakness and working on it. Educational audit is useful to identify the deficiencies and to take action so as to improve the quality of teaching⁸. The questionnaire covered mainly three areas: structure and organisation of the meeting, running the meeting, and the effect of the meeting on further reading and patient management.

We have structured the M & M meeting in accordance with recommendations from the literature^{4,9,10}. This meeting is advised to be held on an obligatory weekly basis within working hours and should last for one hour. Other specialist should be invited when needed. We tried to select cases depending on their teaching value¹¹ but we cannot rule out selection bias. Junior staff usually presented those cases and senior staff helped in the preparation of the cases¹⁰. Fifteen minutes were allocated for each case. This short format was preferred to focus the debate, to prevent sterile speculations, to reduce emotional stress and to keep the audience alert¹⁰. Presentation of a brief theoretical review after each case proved a good way to avoid focusing on "errors" or blame, a potential danger when reviewing morbidity¹⁰. Regular schedule, selection of cases and review of the literature were important characteristics of the M & M meeting¹⁰. It is clear that these areas had high ratings and encountered significant improvements in the areas of notice of the meeting, organization, and knowledge being up-to-date.

There was also a significant improvement in the discussion ($p=0.01$, Mann-Whitney test). The M & M meeting provides incomparable teaching opportunity because sharing experiences multiplies individual exposure¹⁰. It is the group discussion that gets the best of this meeting¹¹. Facilitation of the group discussion plays a central role in its success. The same senior registrar ran the meetings during the study period. It could have been better if the meeting was run by a senior consultant⁹. Surgical consultants have more interactive, stimulating, evidence based, problem-oriented and patient-centred approaches than registrars¹². The facilitator should be able to monitor participation of group members, maintain focus on discussion, ask guide questions and provide information when needed¹³.

Discussion can be improved by being focused, relevant, and to be characterised by noncompetitive, nonjudgmental interactions among the participants¹³. Residents recognized a strong feeling of defensiveness and more frequently suggested the meeting would be improved if it were less blameful⁴. Interestingly, surgeons were reported to be often absent when their cases were discussed on voluntary meetings². This was not the case in our study. Possibly because of the scheduling of this obligatory meeting which had an educational nature. Furthermore food was supplied before the meeting, which may have encouraged attendance. There should have been one or two major learning points stressed as closing marks at the end of each case which may strengthen the conclusions.

We hoped that discussion at the meeting and presenting the review of the literature would stimulate surgeons to go back and read about their mistakes instead of trying to forget, deny, or

look for justification¹⁰. We hypothesized that this in turn will change the management of patients. Most of our surgeons, felt that the meeting did not initiate further reading neither improved patient management. Vis versa reading more was thought not to improve the M & M meeting⁴. In contrast others found that the journal club improved clinical practice¹⁴. We have to appreciate that change depends mainly on the intrinsic desire of the residents to implement what they have learned and not on extrinsic institutional pressures¹⁵. It may need a longer period of time for change to occur. Nevertheless the participants appreciated that the knowledge presented was up to date.

Finally this study demonstrates that feedback is very useful at evaluating different aspects of educational activity^{16,17}. The number of participants in this study was small. Nevertheless, this does not jeopardize its findings. Clinicians are consistent in their opinion and their ratings can be highly reliable¹⁶. The same participants evaluated the same meeting that was run by the same moderator. This is possibly why the present study could accurately detect all the changes introduced in the M & M meeting despite the small number of the participants and the use of an exact nonparametric method for detecting the statistical significance. This demonstrates that questionnaires are accurate tools that can detect changes in postgraduate educational activities and should be used within departments even with few staff members.

In summary this study has shown that specific actions can improve the educational quality of the morbidity mortality meeting. More work is needed to improve the way the meeting is being run hoping to have long term useful effects.

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