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Research Article

Implementing a Supervised Mortality Review Program in an Internal Medicine Residency Training Program to Improve Review Compliance in a Community-based Hospital in Brooklyn, NY

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Introduction

Evaluating inpatient hospital mortality is an important activity for hospitals as a quality metric. Hospital mortality rates are one of the metrics reported by the Centers for Medicare & Medicaid Services (CMS) along with the hospitals of the US nation as a measure of their performance, safety, and quality of care [1]. The evaluation of in-hospital deaths is an essential component of good clinical practice. It helps to unmask potential medical errors and provides feedback on the care rendered by the hospital [2]. Many approaches have been developed to evaluate mortality in the inpatient setting, but most fail to recognize that patients who die are part of a heterogeneous group. Several standardized measures have been created to better reflect preventable deaths that may have deviated from the standard of care. These interventions serve to identify preventable medical errors, improve patient safety and quality of care, and improve outcomes in hospitalized patients.

Several studies have shown that reviewing medical records is a valuable tool to detect adverse events and system issues in hospitals [3]. The review of hospital mortality causes has been used to identify gaps in the quality of care that are particular to the institution carrying out the review. One review showed that a medical record review done to detect adverse events in the hospital is reproducible [4]. A Harvard review of hospital medical records for adverse events concluded that although many adverse events require further medical to prevent, there is still a considerable amount of them that could have been prevented without it [5]. Dying patients experience significantly more adverse events than other patients. Consequently, reviewing mortality cases provides further value, as they are a high adverse event population, thus providing more data for adverse events [6]. Conducting mortality reviews in the Department of Medicine has been challenging during 2020 and 2021. The COVID-19 pandemic and the disruption in our EMR system have caused delays in several of our processes,

including mortality reviews. To improve mortality reviews in the Department of Medicine, we proposed a team approach composed of faculty and residents from the Residency Training Program, supervised systematically by Faculty members.

Methods

To review mortality cases in the Department of Medicine of Wyckoff hospital, we created a team of two faculty members and 14 (7 PGY-1s and 7 PGY-2s) residents. The team met to discuss the project, learn more about the scope of the problem and ways to address it. The seven junior residents were paired with the seven senior residents to form seven sub-teams. One senior resident was selected as the leader of the residents. We used a standardized form provided by the Quality Management and Regulatory Department to conduct the review similar to the one presented in Form 1 (See Appendix A). The faculty members met with the residents and in-serviced them on how to conduct a mortality review. The faculty team also described the content of the form, analysing each of the questions and anticipating some of the most common questions residents have. Residents were encouraged to actively participate in the review process, ask questions and discuss alternative views and express their doubts.

The review was conducted from January 2021 to May 2021. Every month, the faculty members assigned mortality cases to the team leader, who distributed them to the seven sub-teams (paired senior and senior residents). Residents were given 2 to 3 weeks to meet with the faculty to discuss the cases, complete the forms and return them to the team leader. When all the forms were returned, other cases were assigned for review. To assess the impact and value of this performance improvement project on the resident's education, an anonymous questionnaire with ten questions was provided to the residents (Figure 1).

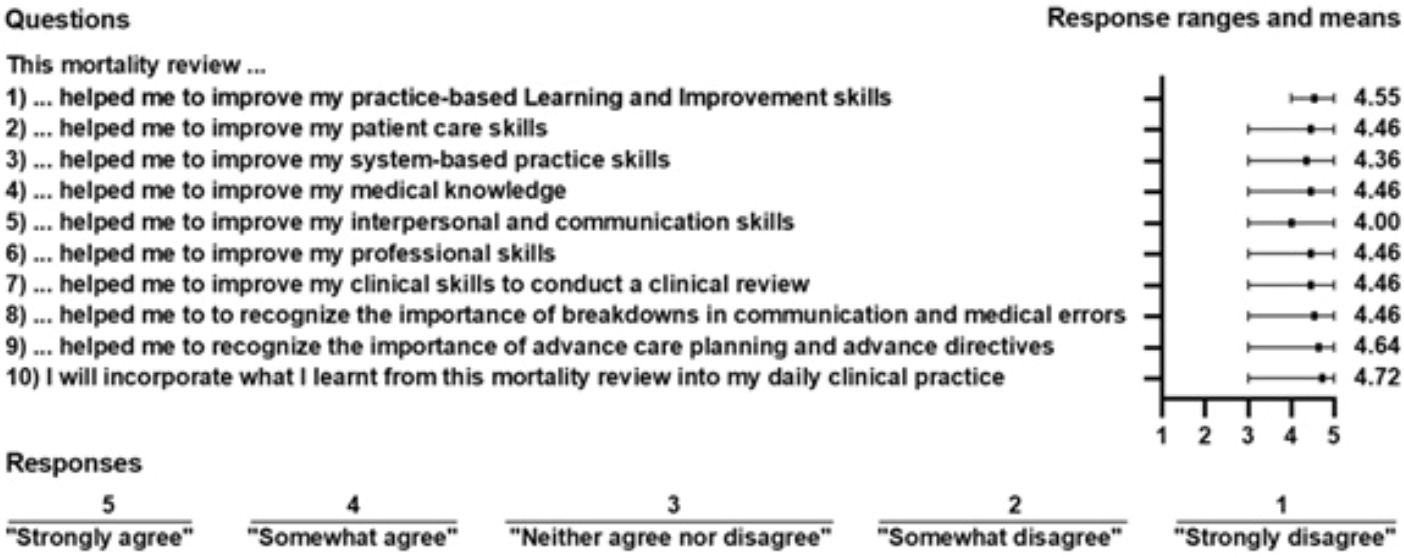

Figure 1: Questionnaire**.**

Results

Between January and May 2021, a total of 176 mortality review cases were conducted as described in the methods. Of this total, 7 cases were sent for a second review to clarify further questions. All residents felt confident while conducting the reviews and discussing the cases with the faculty members. 11 of the 14 residents provided feedback through the questionnaire, resulting in a 78.6% response rate (See table 1). Most residents agreed that the mortality reviews had a positive effect on their medical training. To analyze the aggregated data of the questionnaire, the responses were given a numeric value from 1 to 5, corresponding to "Strongly agree" (5), "Somewhat agree" (4), "Neither agree nor disagree" (3), "Somewhat disagree" (2), and "Strongly disagree" (1). To report the data of the questionnaire, the mean of each question was calculated and plotted into a graph for better visualization (Figure 1).

Number of reviews conducted	176
Number of residents	14
Number of Faculty	2
Number of cases for a second review	7
Number of residents completing the questionnaire	11
Response rate to the questionnaire	78.6%
Lowest response in the questionnaire (Based on the mean) Question 5	4
Highest response in the questionnaire (Based on the mean) Question 10	4.73

Table 1: Feedback through the questionnaire.

Discussion

This project involving 176 cases of mortality reviews is part of our ongoing effort to improve mortality reviews in the Department of Medicine. The newly introduced participation of resident teams consisting of a senior resident team leader and seven sub-teams, each consisting of a senior and a junior resident, helped mitigate workloads and open the review process to a broader panel of individuals with different perspectives and at varying levels of medical expertise. This approach also allowed faculty and residents to interact and maintain the medical trainees' supervision while critically reviewing adverse events as part of their medical education. As per the questionnaire, most residents agreed that the mortality reviews had a positive impact on their training and contributed positively to the core competency of the program. While only minor differences in the agreement were observed throughout the entire questionnaire, with means in the range of 4 and 5, the highest mean was observed for question 10 (I will incorporate what I learned from this mortality review into my daily clinical practice), at 4.73. The lowest mean was observed for question 5 (This mortality review helped me to improve my interpersonal and communication skills) at 4.00.

Conclusion

Implementing a structured approach involving a team of residents in the process of reviewing mortality cases, a) allowed comprehensive and critical reviews of adverse effects by a broad panel of medical staff, b) had solid educational value for the trainees in a medical residency training program [7,8], and c) helped to mitigate the workload, while not impacting the total number of case numbers, compared to earlier years.

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Appendix A

MORTALITY REVIEW

Wyckoff Heights Medical Center - Department of Regulatory Services

Division

Patient Name MR# Age Sex ☐ M ☐ F

Date Admitted Transfer from outside hospita ☐ Yes ☐ No

Death: Date Service Attending , **MD**

Patient was: DNR Yes No DNI Yes No Autopsy Yes No

Primary Diagnosis:_____

_____

Secondary Diagnosis: _____

_____

The events surrounding the patient's death were reviewed at a Division meeting on _____ (Date), paying particular attention to any possible actions or omissions that could have contributed to an untimely death of the patient. We conclude:

___ Death was expected and timely.

___ Death was unexpected but not preventable or modifiable in any important way by any reasonable actions by the UNCH care team.

___ Possibly preventable actions, complications, or omissions may have contributed to the death. Explain (briefly):_____

Based on this case, the following:

___ Was done:_____ (continue on back)

___ Will be instituted:_____ (continue on back)

___ A second review is recommended:_____(continue on back)

We recommend the following topic(s) for departmental educational program(s):

___ This case for CPC

___ Other:_____

Completed By:_____ Pager:_____ Date:_____