A novel *Minute Feedback System* for medical students

David T. Hughes[*], Lisa Leininger, Rishindra M. Reddy, Gurjit Sandhu, Susan Ryszawa, Michael Englesbe

University of Michigan, Department of Surgery, USA

ARTICLE INFO

ABSTRACT

Background: Medical students often report a lack of timely, useful feedback during clerkship rotations. The purpose of this study was to develop a novel *Minute Feedback System* and determine whether it would generate frequent, high quality, documented feedback for students during the third year surgery clerkship.

Methods: The *Minute Feedback System* was created using the Qualtrics© survey software platform and piloted with surgery clerkship students. These students were surveyed about the frequency and quality of feedback and their overall rating of the surgery clerkship and compared to students who did not use the feedback system.

Results: The initial pilot of the *Minute Feedback System* involved 6/34 M3 surgery clerkship students and generated a total of 70 unique comments from faculty and residents over 3 weeks. When the 6 pilot students were compared to the 28 students without access to the *Minute Feedback System*, they respectively rated the frequency of feedback 4.50 vs 2.83 (p < 0.01); the quality of feedback 4.70 vs 3.33 (p < 0.01) and the overall rating of the surgery clerkship 4.67 vs 4.05 (p < 0.01) higher.

The system was then made available to all students on the M3 surgery clerkship (n = 31) over the subsequent 2 month rotation. 354 unique feedback comments were generated from 399 student requests (89% response rate). Students using the *Minute Feedback System* (n = 31) compared to students in the previous academic year without (n = 170) rated the quality of feedback (3.76 vs 3.4, p < 0.01), that feedback was provided during clerkship (100% vs 90%, p < 0.01) and the overall quality of the clerkship (3.94 vs 3.87, p = 0.2) higher.

Conclusion: The novel *Minute Feedback System* allows for frequent, timely, useful and documented feedback to medical students.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

Feedback is information about reactions to a person's performance of a task, provided with the intention that the person uses the information as a basis for improvement. For medical students in their third year clerkship, feedback from faculty and residents about their clinical care performance is a critical tool for learning. However, students often report receiving little feedback or poor quality feedback during clinical rotations.[1] Students may have difficulties soliciting feedback due to their own attitudes towards requesting feedback, such as their perceptions of faculty approachability and concerns about being perceived as "weak".[2]

Faculty and residents report they have little time to provide specific, structured feedback to medical students in the busy clinical care setting. Even when feedback is provided, the students may not recall specifics about the feedback even immediately after it was given.[3] The lack of quality feedback and the perception of lack of feedback is an area of clinical medical education where improvements will benefit medical students.

Putting feedback in writing, such as by having students give printed cards to residents or faculty on which to write feedback, can result in students perceiving an increase in feedback.[4] Furthermore, the Liaison Committee for Graduate Medical Education (LCGME) requires documentation of observation of medical students performing patient history and physical exam as well as feedback about the students' performance. The logistics of obtaining this documentation can be challenging for students and clerkship directors. The mini-Clinical Evaluation Exercise (CEX) has been used

to evaluate students' clinical skills but it is primarily an assessment tool to rate performance of history and physical exam skills and is not intended for feedback purposes.[5] We therefore recognized a gap in medical education in the ability of students to gather specific written feedback about their day-to-day performance in the clinical setting from supervising residents and faculty. The conceptual framework that led to the hypothesis of this study was that if students had the ability to request specific feedback about their performance on a continuum throughout their surgical clerkship from multiple residents and faculty and that the feedback provided was formative and of high quality, then the students' perception of the rotation's educational quality would improve incrementally. This concept relies on the assumption that students are motivated to improve their performance and that they rely on feedback from supervising residents and faculty in order to change their performance. It also relies on the assumption that supervising residents and faculty will have high response rates to students' request for feedback and that they will provide quality feedback which is specific, challenging and concrete as to its recommendations for improvement. The purpose of this study was to develop a novel *Minute Feedback System* which would generate frequent, timely, high-quality, documented feedback for students about their clinical care performance during the third year surgery clerkship.

2. Materials and methods

The authors created a *Minute Feedback System* using the commercially available Qualtrics© survey software platform. The feedback system was designed to allow medical students to initiate a request for feedback about their performance from surgery faculty and residents during their third year surgery clerkship. Through an emailed web survey link students select a faculty or resident with whom they worked during the day, how long they worked with the individual (few hours, ½ day or full day), the location of the interaction (floor/ED, clinic or operating room) and what clinical skill they would like feedback about (physical exam, patient history, oral presentation, technical skills or general performance) (Fig. 1). Immediately after the student completes the initial survey, a link to the feedback survey is automatically emailed to the selected faculty or resident evaluator (Fig. 2). The feedback survey identifies the student, the length of interaction, the location of the interaction and the subject of the feedback request. The faculty/resident enters a rating and feedback comments about the student into a free-text box either by typing or dictating if using a mobile phone. The time required to complete the feedback survey is intended to be less than 1 min. Immediately after the feedback survey is completed by the faculty/resident, an email is automatically sent to the requesting student with the feedback comments entered by the faculty/resident (Fig. 3). Completed feedback data are also collected in a secure database which is accessible by the clerkship directors (Fig. 4). The stored feedback comments are also available to the faculty rotation facilitator to use for mid-clerkship formative feedback sessions one month into the two month surgery clerkship rotation.

Once the *Minute Feedback System* was created, its use with students was studied and compared to standard feedback mechanisms. The *Minute Feedback System* was initiated in 2015 as a pilot during the second month of the academic year. Six students rotating on the authors' (DH and RR) clinical service during the surgery clerkship were given access to the feedback system while the remaining 28 students rotating on other surgical services did not have access to the feedback system. Students using the system could request feedback from any of the 12 faculty and 9 residents/fellows on these services. Students in each group were surveyed about the frequency and quality of feedback and their overall rating of the surgery clerkship on a 5 point Likert scale at the end of this pilot period.

After the initial one month pilot, the feedback system was made available as a trial for 31 students on the surgery clerkship over the following 2 month period. Students could request feedback from any of the 70 surgical faculty members and 57 residents/fellows on their surgery clerkship rotations. These 31 students were surveyed about the frequency and quality of feedback and their overall rating of the surgery clerkship on a 5 point Likert scale. Results of this survey were compared to student evaluations of the surgery clerkship from the prior academic year with respect to their rating of feedback received during the surgery clerkship, whether they received feedback during the rotation, and their overall rating of the surgery clerkship. The number of student requests for feedback, the faculty/resident completion response rates and the recorded feedback comments were also analyzed.

3. Results

The initial one month pilot of the *Minute Feedback System* involved 6 M3 surgery clerkship students and generated a total of 70 unique comments from faculty and residents over 3 weeks. When the 6 pilot students were compared to the 28 students without access to the *Minute Feedback System*, they respectively rated the frequency of feedback 4.50 vs 2.83(SD $\pm$ 0.93; p < 0.02); the quality of feedback 4.70 vs 3.33(SD $\pm$ 0.82; p < 0.02) and the overall rating of the surgery clerkship 4.67 vs 4.05(SD $\pm$ 0.61; p < 0.02) better with the feedback system (Fig. 5a).

Based on these initial data the *Minute Feedback System* was made available as a trial to all students on the M3 surgery clerkship (n = 31) over the subsequent 2 month clerkship rotation. Faculty and residents provided 405 unique feedback comments over the 2 month period from 588 student requests, for a response rate of 68.9%. Students using the system received a median of 11 comments over the 2 month rotation (range 3–28); the number of comments received was directly correlated to the number of requests for feedback [median number of student requests was 16 (range 5–59)]. Students using the *Minute Feedback System* (n = 31) compared to students in the previous academic year without the system (n = 170) rated the quality of feedback (3.76 vs 3.4, SD $\pm$ 0.31, p < 0.02), that feedback was provided during clerkship (100% vs 90%, p < 0.02) and the overall quality of the clerkship (3.94 vs 3.87, SD $\pm$ 0.09, p = 0.02) higher (Fig. 5b).

The specific comments entered by faculty and residents varied widely in terms of content and usefulness to the student. High quality feedback contained specific comments about good performance as well as areas to improve: *"Did well trying out suturing techniques. Try to concentrate on exact needle placement in the appropriate level of the skin flap and other tissue."* Low quality feedback was non-specific and did not provide suggestions on areas to improve: *"Pleasant to work with."* Individuals seemed to have differing capabilities to provide feedback, regardless of faculty or resident status, as high and low quality of feedback was recorded from both groups.

4. Discussion

The *Minute Feedback System* is a simple tool that allows medical students to request feedback about their clinical performance from faculty and residents during surgery clerkship. It is intended to be used shortly after an interaction, when the performance of the student is fresh in the mind of the resident/faculty, as a supplement, rather than a replacement, to face-to-face feedback. The success of the system seems to rely on the promptness of the request for feedback and the minimal amount of time required to