

## Letters to the Editor

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Editor, Letters to the Editor Section

*Editor's Note:* Send letters to the editor to [jscherger@ucsd.edu](mailto:jscherger@ucsd.edu). 858-232-8858. Fax: 858-565-4091. We publish Letters to the Editor under three categories: "In Response" (letters in response to recently published articles), "New Research" (letters reporting original research), or "Comment" (comments from readers).

### New Research

#### First-year Medical Students Document More Pain Characteristics When Using an Electronic Health Record

##### To the Editor:

Tomorrow's physicians will practice in a paperless clinical environment, and future medical students may learn clinical documentation solely using electronic health records (EHRs). Practicing physicians and their patients have benefitted from EHR use.<sup>1-3</sup> However, there are concerns that the EHR may adversely affect medical students' clinical learning by encouraging rule-based care provision in the absence of critical thinking. Few studies have investigated how using an EHR affects medical students' learning.<sup>4,5</sup>

##### Methods

In academic year 2004–2005, we retrospectively compared the number of pain characteristics recorded by Clinical Skills 1 (first year) students who entered a patient history into an EHR versus those who typed into a blank Word document. We conducted the study after the conclusion of the course. Our human subjects committee granted the study exempt status.

After a lecture outlining a standard medical history format and

structured practice with standardized patients, first-year students interviewed a patient and submitted a medical history from the chief complaint through the review of systems. Students could choose to submit a typed assignment starting with a blank Word document or use PowerChart, a Cerner product. PowerChart is a structured clinical documentation tool that provides context-sensitive lists of choices based on presenting complaint(s) or problem(s). For problems involving pain, the tool provides prompts that allow users to document (by mouse clicks) from lists of the most common characteristics of pain. All prompts are optional.

Two physicians read all the typed and EHR histories, independently selected those that focused on pain, and then resolved differences by consensus. We then independently determined whether each pain characteristic was present or absent, compared ratings, and resolved discrepancies by discussion. Each document received a score between 0 and 7 based on the number of documented pain characteristics.

We used a non-paired *t* test to compare scores between students typing the history assignment and students using the EHR. We chose one more documented pain characteristic to represent clinical significance and designed the study with a power of 0.80 to detect a 1-point difference at the 0.05 sig-

nificance level. As such, we needed 29 samples in each group.

##### Results

A total of 171 students completed the assignment; 73 used the EHR and 98 typed. Thirty-two of 73 EHR histories (44%) and 55 of 98 typed histories (56%) had a chief complaint of pain and were included in the study. Students documenting in the EHR documented significantly more pain characteristics than those who typed the assignment (5.9 versus 4.0,  $P=0.000001$ ). Students using the EHR were more likely to document frequency ( $X^2=18.11$ ,  $P<0.01$ ) and associated symptoms ( $X^2=24.36$ ,  $P<0.01$ ).

##### Discussion

Students who chose the EHR documented more characteristics of pain than their classmates who typed the history in a Word document. Students did not use the EHR while actually interviewing the patient. Therefore, this study reflects students' abilities to record a history from recall and represents improved documentation but not necessarily improved interviewing skills. One next step is to determine if using an EHR during a patient interview improves information acquisition. Our study is limited to students in one institution using one type of EHR. Also, our retrospective design used self-selected control and intervention groups, and

better students could have selected to use the EHR. However, it seems unlikely that self-selection could account for a difference of almost 2 points between groups.

### Conclusions

Students who chose the EHR to record a patient's history documented more pain characteristics than those who did not. In this study, using the EHR was associated with improved performance on a clinical assignment. Further studies should confirm whether and how using the EHR contributes to students' learning and clinical performance.

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## Feedback on Medical Students' Performance Valued

### To the Editor:

Medical students want and value feedback on their clinical performance, yet they report the quality and quantity of feedback they receive as low.<sup>1,2</sup> Our clerkship director historically solicited faculty feedback on students' performance by a mid-rotation mass e-mail. However, comments generated in this manner were sparse and nonspecific, and students on our family medicine clerkship rated our feedback as poor.

On reviewing the literature, we noted that in one study of pediatric clerkship students, written feedback cards or notes improved learner perceptions of feedback timeliness and constructiveness.<sup>3</sup> To increase the quantity of mid-clerkship feedback for our learners, we used similar methods and introduced feedback cards in our family medicine clerkship.

### Methods

#### Setting and Subjects

The University of Texas Southwestern Medical Center at Dallas is a 4-year state institution with 240 students per year. We use eight clerkship sites for 12 student rotations per year in our 4-week required third-year clerkship. Our study subjects were 44 third-year students in 12 clerkship rotations at our home clinic site during academic year 2007–2008.

#### The Educational Intervention

We used a historical control group design to compare the quantity of feedback obtained by e-mail solicitation versus student-distributed feedback cards. For rotations 1–3 (10 students), we solicited faculty feedback by mass e-mail. For rotations 4–12 (34 students), we solicited faculty feedback via the feedback cards. We then compared the number of feedback comments by both methods.

Feedback cards recorded the student and faculty members' names and the encounter date. The card prompted the faculty member to list one or two areas where the student performed well and one or two areas for improvement. At the start of rotations 4–12 (our intervention group), we gave 10 feedback cards to each student. Students were encouraged to hand a feedback card to their faculty member after every clinical session. We asked faculty members to complete the cards in a timely manner, share their comments with students, then deposit the cards in a designated locked box in the clinic. Participation by students and faculty was encouraged but not required. There was no penalty for nonparticipation.

Before the mid-clerkship feedback session, the site director collected all feedback cards from the locked box. He collated and summarized the comments, then relayed them to students during their mid-clerkship feedback session. We compared the number of feedback comments obtained by the two collection methods (e-mail solicitation versus student-distributed cards).

### Results

A total of 365 comments were generated over 12 rotations. The historical control group (three rotations, 10 students) received 41 comments (13.6 per rotation), with a mean of 4.1 comments per student (range 1–8). The feedback note group (nine rotations, 34 students) received 324 comments (36 per rotation), with a mean of 9.5 comments per student (range 1–19).

### Discussion

In our setting, this simple intervention of student-distributed feedback cards more than doubled the number of feedback comments delivered to students during their mid-clerkship evaluation. The system was well received by students and faculty, and students' informal comments regarding the feedback notes were uniformly positive.