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Pediatric Workplace Learning Opportunities for Medical Students: Is Scribing a Win-win?

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Keywords

medical scribes; workplace learning; medical education

Background

The use of electronic health records (EHRs) in the United States has continued to increase since 2009 due to financial incentives.¹ For many physicians, it is daunting to effectively communicate with patients and families while simultaneously entering data into a computer.² The added time burden of inefficient computer workflows can adversely impact job satisfaction and decrease clinical productivity.^{3–5} Medical scribes offer a potential solution, as they can reduce documentation burden and increase patient satisfaction.^{6,7}

While there is an increasing trend for pre-medical students to serve as scribes,⁸ the potential educational benefits of pre-clerkship medical students scribing have not been well studied.⁹ Value-added medical education involves powerful experiential learning experiences that promote learner competency while simultaneously enhancing the capacity of our health care delivery system to improve patient care.¹⁰ Many medical schools have combined education and patient care in creative ways, such as through health coaching, but have not explored scribing.^{11,12} The aim of this project was to evaluate medical students' and attending physicians' perspectives on a pre-clerkship student scribing experience in pediatrics.

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Educational Approach and Innovation

Needs Assessment:

To gauge interests, needs, and feasibility, we surveyed students, attending physicians, and patients and families, respectively, before initiating the intervention. Survey content topics were identified based on literature review and input from students and clinicians. The surveys were pilot tested and refined, and all final surveys were administered electronically via Qualtrics. In 2014, a survey was emailed to three complete cohorts of pre-clerkship students (n = 48) in the UC Berkeley-UCSF Joint Medical Program (JMP) to solicit input about workplace learning activity preferences. Almost all students stated that scribing would be educational for them and beneficial to physicians. Surveys were also emailed to attending physicians (n = 78) at UCSF Benioff Children's Hospital Oakland to assess interest in having medical student scribes. The vast majority agreed that the EHR is contributing to burnout and were interested in having a scribe. In 2015, a convenience sample of patients and caregivers at Children's Adolescent Clinic (n = 123) and Pediatric Clinic (n = 56) were surveyed regarding attitudes about medical students scribing. The majority reported that they would be comfortable having a scribe present during the encounter and felt they could still be open with their doctors.

Since the needs assessment showed that students and physicians were very interested in scribing, we assembled a multi-disciplinary team that created Children's scribe policy, approved December 12, 2014 available in the online appendix. The Children's Institutional Review Board deemed this study exempt.

Intervention:

The JMP clinical skills course faculty integrated a unique and mandatory scribing experience at Children's for second-year medical students in Spring of 2016. The full cohort received 16 hours of tailored training on medical terminology, abbreviations, clinical documentation, and EHR navigation. The students completed didactic sessions with chart examples for patient cases and then engaged in simulated scribing experiences with videotaped case vignettes. To promote active learning, each student reviewed the scribed note of a peer and gave feedback. A faculty member then reviewed and gave input on the revised note.

Roles and responsibilities were reviewed with students and the clinical sites. Students then completed 3–4 four-hour scribing shifts with clinicians at Children's, working in the Emergency Department, Adolescent Clinic, or the Pediatric Clinic. Exclusion criteria for scribes participating included if the patient was medically unstable or the patient/caregiver declined.

In Spring of 2017, the new cohort of students was given the option to scribe, and the students who opted in completed the same program as the prior cohort.

Post-Intervention:

The students who had scribed and the clinicians who had worked with them were emailed anonymous surveys within 2 months of completion to gather feedback. Both surveys were twenty questions and included 5-point Likert scales, from strongly agree to strongly disagree, to assess attitudes and free responses to describe experiences. Results were analyzed descriptively.

Results**Student perspectives:**

Twenty of 32 students participated in the pediatric scribing pilot and 19 of 20 (95%) completed the post-education survey. The majority reported that their scribing experience improved their clinical and note-taking skills. Fewer students reported that they were able to be helpful to the clinicians (Table 1). All students agreed the scribing experience should be offered to future students.

Physician perspectives:

Sixteen of 20 (80%) of physicians who worked with a medical student scribe completed the survey. Almost all agreed that scribing was educational for the students, and the majority reported that having a scribe improved patient-physician communication (Table 1).

Discussion and Next Steps

Medical students who participated in scribing reported increased comfort with clinical documentation, EHR navigation, and pediatric clinical encounters, and the majority of physicians reported enhanced communication with patients. Our intervention combined didactic curriculum with hands-on EHR experiences to teach students best practices for charting. It leveraged real world pediatric exposure for students, while allowing them to contribute to the care team and receive specific feedback on notes. The most important principles to successfully integrate a structured scribing program into preclerkship medical education include clear guidance around roles and responsibilities, adequate training, continuity between students and attendings, and opportunities for reflection on feedback. Students can learn a lot from meaningful, interactive experiences with EHRs⁹ in a pediatric setting before clinical rotations.

This study involved a relatively small number of participants from one institution with limited participation of 25% from the second cohort of students which impacts generalizability. The students' limited continuity with each attending physician may have decreased reported benefits to the physician. Future studies could implement a more longitudinal model with greater continuity between physicians and scribes, as well as evaluate patients' experience of having a scribe participate.

Scribing warrants further study to determine its impact on medical education.⁹ Pediatric scribing experiences for medical students could be a win-win by reducing EHR documentation burnout among physicians of today while educating doctors of tomorrow.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1:

Survey Responses from Medical Students, and Physicians

Phase	Study Participants	Question Topic *	Agree n (%)	Neutral n (%)	Disagree n (%)
Post-Scribing Intervention	Medical Students who Completed the Scribe Pilot ¹ (n = 18/19) Response Rate 95%	Increased understanding of how to approach a pediatric clinical encounter.	15 (83%)	2 (11%)	1 (6%)
		More familiarity with using Epic EHR system.	16 (89%)	2 (11%)	0 (0%)
		Participation was helpful to the doctors.	7 (39%)	5 (28%)	6 (33%)
		Participation was welcomed by patients and their families.	9 (50%)	9 (50%)	0 (0%)
		Learn best in a clinical setting with an active role rather than shadowing	17 (94%)	1 (5%)	0 (0%)
	Physicians who Worked with Student Scribes (n = 16/20) Response rate 80%	Scribing was educational for the medical student.	15 (94%)	0 (0%)	1 (6%)
		With the scribe present, it was possible to have more natural communication and better eye contact with patients.	11 (69%)	1 (6%)	4 (25%)
		Student scribe was overall helpful.	10 (63%)	2 (13%)	4 (25%)

* Percentages for some question topics do not add up to 100% due to rounding. Surveys had a 5-point Likert scale, but for this table, we combined strongly agree/agree and strongly disagree/disagree.

¹In Spring of 2016, 16 second year medical students scribed at Children's as a mandatory part of their clinical skills course. In Spring of 2017, 4 second year medical students opted to scribe at Children's as a selective integrated into their clinical skills course.