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Preparing Emergency Medicine Residents as Teachers: Clinical Teaching Scenarios

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Abstract

Introduction: Preparing residents for supervision of medical students in the clinical setting is important to provide high-quality education for the next generation of physicians and is mandated by the Liaison Committee on Medical Education as well as the Accreditation Council for Graduate Medical Education. This requirement is met in variable ways depending on the specialty, school, and setting where teaching takes place. This educational intervention was designed to allow residents to practice techniques useful while supervising medical students in simulated encounters in the emergency department and increase their comfort level with providing feedback to students. **Methods:** The four role-playing scenarios described here were developed for second-year residents in emergency medicine at the Indiana University School of Medicine. Residents participated in the scenarios prior to serving as a supervisor for fourth-year medical students rotating on the emergency medicine clerkship. For each scenario, a faculty member observed the simulated interaction between the resident and the simulated student. The residents were surveyed before and after participating in the scenarios to determine the effectiveness of the instruction. **Results:** Residents reported that they were more comfortable supervising students, evaluating their performance, and giving feedback after participating in the scenarios. **Discussion:** Participation in these clinical teaching scenarios was effective at making residents more comfortable with their role as supervisors of fourth-year students taking an emergency medicine clerkship. These scenarios may be useful as part of a resident-as-teacher curriculum for emergency medicine residents.

Keywords

Emergency Medicine, Resident as Teachers

Appendices

A. Teaching Scenario Instructors Guide.docx
B. Teaching Scenario Settings .docx
C. Teaching Scenario Student Characters.docx
D. Presurvey.pdf
E. Postsurvey.pdf

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of the session, learners will be able to:

1. Describe strategies to apply when supervising learners in several commonly encountered or difficult teaching scenarios.
2. Increase their comfort level with supervising, evaluating, and providing feedback to medical students.

Introduction

The Liaison Committee on Medical Education and the Accreditation Council for Graduate Medical Education have both identified preparing residents for their role as educators as a mandatory portion of the educational curriculum.[1,2] A 2017 survey by Al Achkar, Hanauer, Morrison, Davies, and Oh indicated that 80% of programs offer a resident-as-teacher (RAT) curriculum, a 25% increase from 2006, and that 90% include lectures and about half include role-playing with directed feedback.[3] A recent review by Bree indicated that many reported curricula do not include adequate details to fully reproduce the learning experiences in other institutions or settings.[4] A 2008 review of RAT curricula identified the regression in

measures included in the literature.[5] The one-minute preceptor is based on five discrete teaching behaviors: getting a commitment, probing the learner for supporting evidence, teaching general rules, reinforcing what was done right, and correcting mistakes.[6] However, no studies have evaluated the one-

minute preceptor as a teaching modality in the emergency department.[5,7] The constant and at times simultaneous nature of patient arrivals and the critical nature of some presentations are challenges to implementing the one-minute preceptor in a busy emergency department.[8] A search of *MedEdPORTAL* revealed a number of resources addressing RAT curricular topics, including ones on inpatient teaching,[9] giving feedback,[10] and other general topics,[11-13] but none focusing on teaching in a busy emergency department. The scenarios included in this educational session were designed as a formative exercise to promote emergency medicine residents' development as clinical teachers. The scenarios add to the available RAT resources by focusing on the challenges encountered while supervising learners in a busy emergency department. The goal of the scenarios is to allow residents to practice strategies useful in supervising medical students and to develop increased comfort in doing so.

Methods

The Indiana University School of Medicine (IUSM) Emergency Medicine Residency Program conducts four simulated teaching scenarios for its second-year residents in preparation for their role as supervisors of fourth-year medical students taking the mandatory emergency medicine clerkship at IUSM. Residents receive training on general feedback techniques through IUSM during their residency orientation. The four scenarios were developed by the residency program leadership in order to expose residents to teaching situations commonly encountered in the emergency department as well as to less common but more challenging situations. Each scenario was chosen and developed based on the experiences of the authors with medical students in the past.

Each clinical teaching scenario required one faculty facilitator, one resident to function as the teaching resident, and another individual to serve as the simulated student. In theory, one could employ a professional standardized patient, but due to cost constraints, we used volunteer medical students as our simulated students. Another alternative would be to have another resident from the group play the role of the simulated student. The simulated student is provided with a brief description of the role in addition to a written description of the presentation. The resources necessary to implement the scenarios depend somewhat on the number of learners. Ideally, there are four or fewer residents per group so everyone gets to serve as the simulated teaching resident at least once. If fewer than four faculty are available, faculty could run multiple scenarios with each group. Each scenario takes 20 minutes to complete, with 10 minutes for scenario role-playing and 10 for debriefing. Four groups can participate in all four scenarios in about 90 minutes. To run the scenarios, four rooms close enough to allow easy switching between them are needed, or else one room large enough to hold four separate groups.

The faculty preceptor can rotate between the groups and observe the same scenario with each of the four groups; however, this requires four faculty to participate. If volunteer medical students are being used as the simulated learner, they should rotate with the faculty as well so that each plays the same character multiple times.

Faculty preceptors are provided with the Instructors Guide (Appendix A), which includes the setting, character, and a debriefing guide that can be used to prepare to observe and provide feedback on the scenarios. The Instructors Guide should be distributed early enough to allow the faculty to review the scenarios prior to the session. The teaching scenario settings (Appendix B) for the residents give a quick overview of the situation in which the resident is going to be supervising the student. The teaching scenario characters (Appendix C) for the simulated students provide an overview of the characters being played in the scenarios.

The teaching scenario characters can be given to the simulated learners just prior to their scenarios, and a brief conversation with each simulated learner is helpful to answer any questions. The teaching scenario setting information is given to the resident just prior to starting the simulated encounter. Paper copies of these documents are used, but electronic copies could be utilized if desired.

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The debriefing sessions include self-evaluation, peer evaluation, simulated learner evaluation of the supervisor, and faculty evaluation. Faculty are encouraged to ensure the learning points in the debriefing guide are covered but are also free to facilitate as the discussion warrants.

As part of a larger RAT educational retreat, our residents completed an online presurvey (Appendix D) related to their prior experiences and comfort level with teaching and supervision. The postsurvey (Appendix E) was administered 2 weeks after participating in the scenarios to assess changes in the residents' comfort level with teaching and supervision. The survey was administered electronically using a REDCap survey and database. The questions relevant to the topics covered by these scenarios included rating residents' comfort with clinical supervision, teaching, providing feedback, and assessment of students. Several additional questions were included in the pre- and postsurveys to help frame the discussion surrounding the importance of RATs and to increase engagement of the residents. As these data were not analyzed, they are not included in this report.

Results

In April 2016, 21 second-year emergency medicine residents participated in a session that included the four role-playing scenarios in this publication. Four current medical students volunteered to participate as the simulated students, which increased the authenticity of the scenarios. Four physician faculty members served as facilitators and observed one of the four scenarios with each of the four groups. In order to evaluate the impact of the session on resident comfort with supervising, assessing, and providing feedback to medical students, the participating residents received the pre- and postsurveys to fill out. The results from the survey are shown in the Table. When asked to rate their comfort with clinical supervision, teaching, assessment, and providing feedback, the residents responded on average that they were more comfortable after participating in the clinical teaching scenarios. The differences ranged from 25.6 for being comfortable assessing the student's performance to 9.2 for the amount of impact residents thought their feedback would have. All results were found to be statistically significant using a two-tailed t test.

Table. Resident Pre- and Postsurvey Results, Mean Difference, and Two-Tailed t Test (Equal Variances Not Assumed)

Question	Presurvey		Postsurvey		t	p	Mean Difference (SE)
	N	M (SD)	N	M (SD)			
Please rate your comfort with clinical supervision and teaching of medical students and residents in the emergency department. (0 = *none/scared to death,* 100 = *confident/excited*)	21	43.7 (18.8)	21	67.6 (13.2)	−4.75	.000	23.9 (5.0)
How comfortable are you assessing the performance of medical students and residents in the emergency department? (0 = *have no clue how to do this,* 100 = *comfortable that my assessment will be accurate*)	20	39.2 (14.7)	21	64.8 (12.4)	−6.02	.000	25.6 (4.3)
How comfortable are you in giving face-to-face feedback to learners? (0 = *not comfortable at all,* 100 = *very comfortable*)	20	47.3 (21.8)	21	62.8 (14.8)	−2.65	.012	15.5 (5.9)
How much impact do you think your face-to-face feedback to learners will have? (0 = *doubt I'll make a difference/impact,* 100 = *confident I'll change behavior on every shift*)	20	55.2 (14.2)	21	64.4 (14.8)	−2.04	.049	9.2 (4.5)

Discussion

We developed a series of teaching case scenarios designed to improve the comfort level of emergency medicine residents supervising medical students in a busy emergency department. The teaching scenarios presented here have been useful in preparing our residents to supervise medical students in the emergency department. Each interaction brought up a number of items for discussion for even the best resident teachers. The discussions were very robust and allowed residents to receive real-time, concrete feedback on their supervision of the simulated students. Residents felt more comfortable with the role of supervising medical students in the emergency department after participating in these mock teaching scenarios. In reviewing the results of the surveys, it is clear that the residents who participated in the scenarios felt more comfortable with clinical supervision, teaching, assessment, and providing feedback to medical students. The largest change was seen in the comfort level for providing supervision and assessing student performance. While there was a statistically significant difference for giving feedback, the impact was smaller. This may have been due to the nature of the scenarios. Because the

scenarios focus on difficult encounters, the feedback the resident must provide can be difficult for the learner. The open-ended question responses identified a number of items related to excellent teachers, including being enthusiastic, approachable, and knowledgeable and providing clear and concise feedback. Items related to ineffective teachers included being difficult to approach, being unavailable, lacking knowledge, and not providing feedback.

This resource has many limitations. First and foremost, regarding the outcomes measured in the study, comfort with the supervisor role is primarily an indirect measure and does not necessarily indicate skill acquisition. Future work should include a measure of teaching competence perhaps using an observation of teaching in the emergency department. Another limitation is that this resource has been implemented at only one institution in one specialty with a small number of participants, although many of the issues raised in the scenarios are encountered in many places throughout medical education. With minimal tweaking, the setting could be changed to other institutions or even an inpatient setting in order to adapt the scenarios to other specialties. Another limitation is that if the crux of a case is not brought up on its own, it may be necessary to direct either the simulated learner or the resident teacher to ensure that the particular issue is raised. For example, in the dishonest student scenario, if the resident does not ask the simulated learner about the rectal exam, the dishonesty issue does not come up. Faculty may prompt the resident about this by having the nurse come in and ask if they are planning on doing a rectal exam. The resident can then query the student about this, and the student can answer in the affirmative. Having faculty supervise the same case multiple times is helpful at adjusting on the fly.

Future directions for this resource should include a more rigorous evaluation of the impact of the scenarios on teaching behaviors observed in residents teaching in the emergency department. This resource is a successful adaptation of an ambulatory teaching framework to the busy emergency department environment, which should encourage exploration of adapting well-established clinical teaching techniques to the emergency department.

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