

a video on cricothyrotomy. Residents with prior clinical cricothyrotomy experience were excluded. All enrolled residents performed a cricothyrotomy on a simulation model. Primary outcomes included time to completion and number of mistakes which were recorded by a blinded surveyor. Secondary outcomes, rated on a Likert scale, included comfort level and preparation level. Outcomes were compared by paired t-test.

**Results:** Of the 31 of residents enrolled, 27 met inclusion criteria, 15 received visual instruction and 12 received written instruction. Both comfort level of cricothyrotomy and average time to completion were significantly better for visual instruction compared to written instruction. Level of preparation and number of mistakes was not significant between groups. Year of training did not influence results.

**Conclusion:** Visual instruction improved the time to completion and resident level of comfort when compared to written instruction for residents performing a cricothyrotomy on a simulation model. With limited time and resources for rare procedural training during residency, visual instruction from FOAM prior to procedural training may help improve resident competency.

## 26 Ethical Issues Confronting Beginning Medical Students During a Clerkship in Emergency Medicine

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**Background:** Little is known about the ethical issues confronting medical students during their first exposure to emergency medicine (EM).

**Objectives:** The aim of this study was to review student narratives for insight into ethical situations and the impact they might have on our students as they adapt to the clinical world.

**Methods:** This was a prospective observational study of first and second-year medical students, completing an EM clerkship at three university-affiliated hospitals between 2014-2017. During the study period, medical students were asked to write a short narrative description of three cases that had the greatest impact on them. Each narrative essay was deidentified and independently analyzed by three EM investigators using a national classification scheme. Descriptive and kappa statistics were used to summarize the data.

**Results:** During the four-year study period, 292 consecutive student essays were evaluated from 103 medical students. A total of 194 specific incidents were coded across 20 categories of ethical standards. Common categories were incidents related to: access to and equity in healthcare (16.5%); consent (10.8%); miscommunication (9.3%); death and dying (8.8%); and the right to refuse treatment (8.8%). Overall, 74.2% (144/194) were depictions of exemplary

instances of ethical issues, 13.9% (27/194) were considered normal interactions, and 11.9% (23/194) were categorized as unethical behavior. While students were impressed by their observations of EM physicians and staff, their eyes were opened to the improper treatment of acutely ill patients, be it poor pain management, discrimination, inadequate education, or a perceived lack of empathy.

**Conclusions:** Student narratives provide insight into learning not easily measured by traditional evaluation. Analysis of these cases reveals that many interactions are intimately tied to the student's role on the medical health care team, and how that role can lead to ethical compromise.

## 27 Evaluating Evaluations: Can Emergency Medicine Residents Reliably Evaluate Medical Students

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**Background:** Evaluation of learners is a critical task in medical education. The standardized letter of evaluation (SLOE) is the most important factor in determining which applicants to interview. At most programs, residents evaluate students on shift and these evaluations contribute to the SLOE. To date, there is limited published data evaluating the ability of residents to evaluate medical students.

**Objectives:** The hypothesis of this study is that the scores that residents give to rotating medical students do not follow a normal distribution. This study aims to better characterize the way residents evaluate medical students.

- Discuss methods for student evaluation by residents.
- Describe the skewed distribution that residents assign to students.

**Methods:** We conducted a retrospective cross-sectional study. We obtained evaluations performed by residents for all students that rotated with the University of Oklahoma Department of Emergency Medicine between July 2019 and October 2019. Evaluators are asked to assign each student to a tertile based on the clinical areas outlined in the SLOE. We used chi-squared testing to determine significance.

**Results:** Between July and October 2019, 35 fourth year medical students rotated through our emergency department. We collected 283 on-shift evaluations from the residents. When asked the question, "How does this student compare overall to peers?" 20% of students were assigned "Top 10%," 47% of students fell in the "Top 1/3," 30% of students in the "Middle 1/3" and 3% of students in the "Lower 1/3" ( $p < 0.0001$ ). Distribution was also statistically significant for all other questions on the shift evaluation form.

**Conclusions:** Residents are hesitant to assign a "lower 1/3" designation to medical students. Letter writers are required to redistribute students for the SLOE and eventual rank list. Future interventions and training to more accurately

evaluate medical students may result in improved evaluation of medical students by residents.

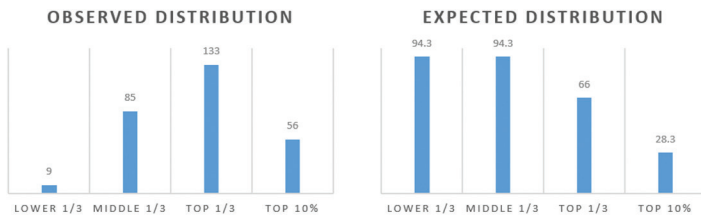


Figure 1.

## 28 Evaluating the Effect of Resident Physicians in a Supervisory Role on Clinical Efficiency in a University-Affiliated Community Emergency Department

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**Introduction:** While patient throughput and emergency department (ED) length of stay (LOS) are recognized as important metrics in the delivery of efficient care, they must be balanced with the educational mission of academic centers. Prior studies have examined the impact of learners on ED throughput and LOS when staffing directly with attending physicians and have yielded mixed results. Herein we sought to examine the impact of a staffing model involving a supervisory resident “pre-attending” (PAT) on ED throughput and LOS, as this model offers a valuable educational experience for residents, but may do so at the expense of operational efficiency. **Methods:** 26,702 unique patient encounters at a university-affiliated community ED between 7/1/2017 and 1/1/2019 were retrospectively analyzed (Table 1). The experimental group was comprised of patients seen primarily by midlevel providers (APP), who staffed with a PAT, who, in turn, staffed with an attending physician. The control group was comprised of patients seen by an APP and staffed directly with attendings without a PAT (Figure 1). A parametric hazard model was used to analyze the effect of the presence of a PAT on service time, controlling for potential confounders including timing of presentation and patient demographics.

**Objective:** To determine the effect of a supervisory resident “pre-attending” physician (PAT) on the clinical efficiency of a university-affiliated emergency department (ED).

**Results:** The presence of a PAT is associated with a statistically significant increase in service time of 5 minutes ( $p = 0.006$ ). Holding other variables equal, predicted service time in the experimental group was 173 min (95%CI 171-176), while that for controls was 168 min (95%CI 165-171).

**Conclusion:** The presence of a PAT is associated with a statistically significant increase in service time, but the magnitude (5 minutes) is likely operationally insignificant.

The negligible increase in service time is offset by the benefit to residents’ training. The results of this study may be helpful for residency programs considering a PAT shift structure for their training program.

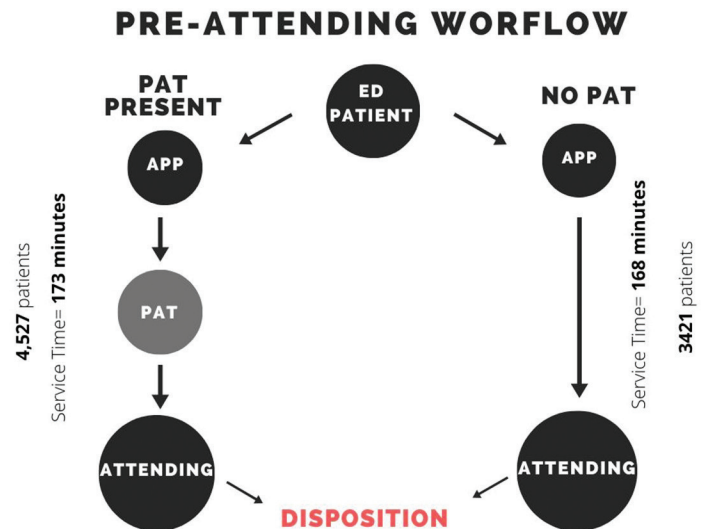


Figure 1. Workflow for ED patients seen by PAT vs ED patients not seen by PAT with associated adjusted mean service times.

Figure 1.

Table 1. Patient demographics for control and experimental groups.

	Pre-attending Encounters (N = 4527)	Non Pre-attending Encounters (N=3421)
Age	47.7(47.1-48.4)	45.8(45.0-46.5)
Female Gender	57.8(56.3-59.2)	54.4(52.7-56.0)
Proportion Discharged	78.4(77.2-79.5)	80.5(79.1-81.8)

## 29 Evaluation of a Blended Curriculum on Medical Student Outcomes in an Emergency Medicine Clerkship

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**Background:** Educational programs have adapted to incorporate instructional strategies that better align with how adults learn. In response to a needs analysis of the Emergency Medicine (EM) clerkship at the Sidney Kimmel Medical College at Thomas Jefferson University, the clerkship was changed to a blended format consisting of internet-based, asynchronous learning, flipped-classroom, and in-person sessions. The goal of the study was to compare the effectiveness of the new format compared to the traditional lecture series.

**Objective:** The goal of the study was to compare the effectiveness of a blended curriculum consisting of internet-based, asynchronous learning, flipped-classroom, and in-person sessions compared to a traditional lecture series.