

status (graduate, resident, or applicant) and cross-tabulated to evaluate group interest in GH topics, prior GH exposure, and impact of GH training opportunities on program ranking. Frequency and chi square statistics were calculated using Stata v.13.1 (Stata, Inc., College Station, Texas);  $\alpha=0.05$  was considered statistically significant.

**Results:** Of the 180 individuals recruited for study participation, 147 (81.7%) voluntarily completed our questionnaire, including 34 (23.1%) graduates, 37 (25.2%) residents, and 76 (51.7%) applicants. An overwhelming majority (88.5%) expressed interest in GH topics and most (77.5%) reported that didactic GH training would improve the overall EM residency experience. Participants with prior GH exposure and participants that expressed interest in GH were more likely to rank EM residency programs with GH training opportunities higher than programs without GH training opportunities ( $\chi^2=27.0$ ,  $p<0.001$ ;  $\chi^2=12.3$ ,  $p=0.002$ ).

**Conclusion:** Findings support trends indicating growing interest in Global Health among EM physicians. Global Health interest and prior Global Health exposure significantly impact EM residency program ranking.

## 58 Resident Participation in Fresh-Tissue Lab Increases Confidence and Retention of Procedural and Anatomical Knowledge

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**Introduction / Background:** Duty hour restrictions and patient safety concerns have altered resident procedural instruction. Simulation models have largely replaced cadaver-based training. Residents receive little formal procedural instruction on realistic human models. The American College of Surgeons has addressed this by offering the ASSET cadaver course. Emergency medicine offers no such standardized curriculum.

**Educational Objectives:** We implemented a module of procedural instruction in a fresh-tissue cadaver lab. We expected the residents to gain and retain procedural knowledge, translating to improved confidence and operational skills.

**Curricular Design:** All residents first completed a survey and multiple-choice test. Videos and a PowerPoint presentation were then distributed.

Emergency medicine (EM)1 residents participated in the fresh-tissue lab while the EM2 residents did not. Lab sessions had a 3:1 resident to faculty ratio. Multiple procedures were performed, along with dissection and anatomy review. Lab participants completed a survey on the value of the session.

Three months later, all residents completed the original test. Six months later, all residents completed the original survey.

**Impact / Effectiveness:** This “innovation” is a return to an established but deemphasized teaching method. Lab participation improved confidence in performing and teaching

procedures. Survey data indicate a preference for the fresh-tissue method compared to simulation. Residents desire more formal instruction in procedures and anatomy.

The initial mean test score in the EM1s was lower than EM2s. Three months later, the mean score of the EM1s was higher than the EM2s, reaching statistical significance. This indicates an improved retention of knowledge due to our educational innovation. Interestingly, residents did not realize our effort to dispel the questioned dogma of “see one, do one, teach one”

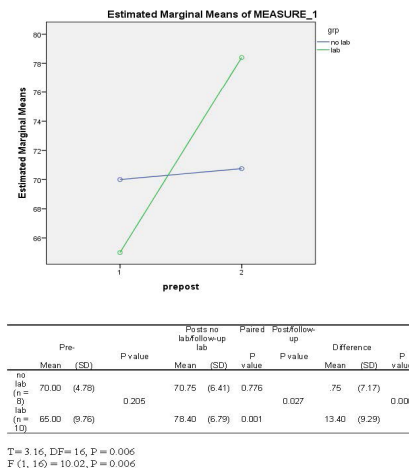


Figure 1.

## 59 Resident Performance and Charting of Key Elements of the History and Physical Exam

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**Background:** Emergency Medicine (EM) residents are infrequently directly observed during patient care in the emergency department (ED). Consequently, presentation and charting cannot be easily monitored for accuracy.

**Objective:** We sought to determine if EM residents obtain appropriate history and physical (H&P) exams and chart accordingly on a common ED complaint.

**Methods:** Using 5 standardized patients (SPs) trained on an asthma case, EM residents at our 3 year urban academic program were asked to perform an H&P, reassessments and charting using a test version of our electronic medical record. Using real time SP reporting and attending physician observation, data was collected on performance of key elements of the asthma H&P and reconciled with the chart. Key elements were based on establish departmental consensus.

**Results:** 24 of 36 (67%) of residents participated (postgraduate year-1 (PGY-1) n= 9, PGY2 n=7, PGY3 n=8). One encounter involved 2 residents resulting in 23 total SP encounters. Historical data obtained from SP’s include: asthma exacerbation triggers-13/23 (57%), history of intubation-19/23(83%), current smoking-6/23 (26%), last ED visit-13/23 (57%), recent steroid use-16/23 (70%), current

medication regimen-17/23 (74%). Physical exam maneuvers performed on the SP's included: cardiac exam "18/23 (78%), pulmonary exam "23/23 (100%), deep vein thrombosis (DVT) exam-10/23 (44%), pulse exam "5/23 (22%). 13/23 (57%) residents documented a DVT exam and 15/23 (65%) residents documents a pulse exam/no pulse deficit.

**Conclusions:** Based on the assessment of a common ED complaint, residents frequently did not perform all key elements of the H&P. It appears a number of residents documented elements of the physical exam that they did not perform. A limitation of the study is that it is possible residents may have not felt it appropriate to perform all facets of the physical exam on a SP but instead documented what they would normally do. Continuing education should focus on teaching key elements of H&P and appropriate documentation.

## 60 Resident-Based Preceptorship Improves Student Clinical Skills in the Emergency Department

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**Background:** Resident as Teacher (RaT) programs have been shown to improve resident knowledge, skills, and attitudes towards teaching. However, little study has been devoted to the effect on student learning outcomes.

**Objectives:** To assess the effect of a RaT curriculum on clinical skill performance of medical students in an emergency medicine clerkship.

**Methods:** This prospective, randomized study performed at an urban community academic hospital investigated the effects of an RaT program on the clinical performance of 4th-year medical students in a 4-week clerkship. Students were randomized into two groups. In week 2, Group One (N=30) received an 8-hour shift devoted to one-to-one precepting by a senior resident without other clinical responsibilities. Group Two (N=25) was precepted in week 4. Both groups were given a standardized simulated encounter in weeks 1 and 3 - before and after Group One's precepted session. Two trained raters independently scored each student's performance on a Likert scale of 0 to 5. Groups One and Two were compared by observing improvement of student performance in 5 clinical skill categories. A p-value <0.10 was considered statistically significant based on previous educational research.

**Results:** Median difference of performance for Groups One and Two were, respectively: data gathering 1.00 (Range: -0.50 to 2.50) vs. 0.50 (Range: -1.00 to 2.50) (p=0.057); emergency management 1.00 (Range: -0.50 to 3.50) vs. 0.50 (Range: -2.00 to 2.50) (p=0.026); professionalism 1.00 (Range: -1.00 to 3.00) vs. 0.50 (Range: -1.00 to 2.50) (p=0.424); communication 1.00 (Range: -1.00 to 3.00) vs. 0.50 (Range: -1.00 to 1.50) (p=0.123); medical knowledge

1.00 (Range: -1.00 to 3.00) vs. 1.00 (Range: -1.50 to 3.50) (p=0.635); and total score 6.75 (Range: -2.00 to 11.50) vs. 4.50 (Range: -4.00 to 11.00) (p=0.018).

**Conclusion:** The RaT preceptor program helps improve student performance of data gathering, emergency management and total clinical score in a standardized patient setting.

## 61 Resident-Driven Ultrasound-Guided Peripheral Intravenous (USGPIV) Nursing Education Program Reduces Attempts and Time to IV Access

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**Background:** Obtaining peripheral intravenous (PIV) access in the emergency department (ED) can be difficult for nurses. A resident-driven ultrasound-guided peripheral intravenous (USGPIV) access nursing training program was initiated as an interprofessional quality project.

**Objective:** To compare venous access times in difficult-to-access patients requiring more than 2 attempts using the traditional manner against those in whom USGPIV placement was utilized. Secondary outcomes were to identify specific patient criteria that may predict difficult intravenous access.

**Method:** Nurses were trained with a 2 hour course and 20 successful USGPIV cannulations. ED patients were defined as "difficult access" after 2 traditional PIV attempts by one nurse were unsuccessful. Cohort 1 consisted of all patient encounters with >2 access attempts by the traditional technique. Cohort 2 consisted of all patient encounters when USGPIV was employed after 2 unsuccessful attempts. Cohort data included the recorded time, number of attempts, and barriers to successful cannulation recorded in the electronic medical record (EMR.) Data from the EMR was retrospectively analyzed to determine which characteristics were most frequently encountered when a nurse was unable to place PIV access. Results: Successful cannulation attempts differed between blind and ultrasound guided technique (3.75 vs. 1.16.) USGPIV was 2.7 times faster (19.7 min vs. 8.36 min) than traditional access placement. Characteristics most commonly recorded for difficult access included chronic illnesses, cannot adequately visualize, and skin color (33%; 71%, 15% respectively).

**Conclusion:** A resident-driven nursing USGPIV training program decreased the delay and number of attempts to establish PIV access in difficult access patients. Particular characteristics are more prevalent when encountering difficult access, but further study to prospectively evaluate predictive value is required.

## 62 Senior Medical Students Perception of the Final Year of Medical School, the Impact of Faculty Advice