

the topics is as follows: diagnostic errors/misdiagnosis 83% (95%CI 74-90), QA 88% (95% CI 81-95), malpractice and risk management 78% (95% CI 68-87), resident requirement to participate on departmental QA committee 90% (95% CI 84-96). There was no statistical difference in prevalence of formal education by program length. 52% (95% CI 42-63) of programs offer less than four hours per year of QA education. 62% (95% CI 51-72) of programs offer less than four hours per year of education on risk management. Of programs that offer a formal curriculum on diagnostic errors, the following modalities of teaching were reported: morbidity and mortality conference 94% (95% CI 88-99), lecture 74% (95% CI 62-84), small group discussions 44% (95% CI 32-56), simulation 41% (95% CI 28-54) and web-based modules 22% (95% CI 12-32).

**Conclusions:** The majority of programs include formal didactics on diagnostic errors, QA, and malpractice but there are few dedicated hours for these specific topics. A limitation of this study is the response rate. Given the growing focus on error reduction and QA in the clinical setting, an expanded and standardized approach to education on these topics may be beneficial in EM training programs.

## 48 Resident Reactions to Unannounced Standardized Patients in the ED

*Brazg J, Chung A, Retino C, Marshall J, Saloum D / Maimonides Medical Center, Brooklyn, NY*

**Background:** Communication and professionalism has a significant impact on patient outcomes and satisfaction and are also two of six ACGME defined core competencies, but evaluation in medical education is a challenge. The USMLE Step 2 CS is necessary for graduation in LCME accredited medical schools and uses standardized patients to evaluate these core competencies in medical students, but is limited by artificial environments and the Hawthorne effect. In the business world, these confounders are eliminated by the use of “mystery shoppers.” The equivalent in medical education is the unannounced standardized patient (USP). In our residency program, videotaped USP encounters are currently used to assess empathy and interpersonal communication skills of EM1s. However, ethical considerations and resident reaction to the use of USPs in resident education is unknown.

**Objectives:** To determine overall resident reaction regarding the use of USP encounters in medical education.

**Methods:** This was a cross sectional survey of EM residents (N=46) at an urban community academic center with 120,000 patient visits per year. Residents signed consent to participate in a study using USPs. After initiation of the program, residents were asked to fill out an anonymous survey containing twelve questions regarding the use of USPs in the ED.

**Results:** A total of 39/46 (85%) EM residents completed the survey (23 males, 16 females; 14 EM1s, 10 EM2s, and 15 EM3s). Almost half (43%) of EM1s admitted to feeling

pressured by peers and/or faculty to participate in the training. In addition, 8 (21%) of all residents surveyed were concerned that USP interactions in the ED would affect their reputation within the residency. The survey also revealed that 17 (44%) residents felt there was educational value to a USP encounters, 17 (44%) were indifferent, and 5 (12%) saw no educational value. Only 5 (12%) residents surveyed did not believe compassion and/or empathy could be taught to EM residents.

**Conclusions:** While many residents believed there was educational value in the use of USPs, some were concerned that their reputations within the residency would be affected. Clearly defining educational goals may help mitigate ethical concerns such as how the data will be used.

## 49 Retrospective Study to Explore the Potential Benefit of an ECMO Protocol in Our Emergency Department

*Frew C, Sproles L, Schiller J / Maimonides Medical Center, Brooklyn, NY*

**Background:** Cardiac arrest is common condition treated in the Emergency Department (ED). Treatment options for this condition remain limited with poor survival rates despite multiple revisions made to advanced algorithms at our disposal. Most cardiac arrest patients are initially treated outside of a hospital setting, yet survival rates for these patients have remained at 8% for the past 30 years. However reports of survival to discharge after initiation of Extracorporeal Membrane Oxygenation (ECMO) range from 21-34%. Thus ECMO may have a role in improving survival rates for this patient population if initiated in the ED.

**Objectives:** Our institution sees a substantial number of cardiac arrests, as a result, we sought to explore the need for ECMO as a useful modality in cardiovascular rescue. The goal of this investigation was to establish a rationale for initiating a protocol for emergent provision of ECMO in our ED.

**Methods:** Three investigators conducted a retrospective cohort study of ED patients who had expired in the ED between January, 2003 and December, 2013. Electronic ED records were selected using a query of inclusion criteria consisting of patients ages 15 - 65, a diagnosis of cardiac arrest, and a disposition of “expired”. The data were analyzed to determine the number of eligible patients by then using exclusion criteria comprised of signs of prolonged down time, severely impaired functional status or chronic illness, initial presentation of asystole, total arrest time over 60 minutes, and traumatic arrest.

**Results:** Our query identified 467 total patients in the specified time period that met inclusion criteria. A patient was considered eligible for ECMO if no exclusion criteria were met. A total of 80 patients out of the 467 (17.1%) were found to be eligible for ECMO. Patients meeting one or more

exclusion criteria totaled 342 (73.2%), and 45 charts (9.6%) were missing documentation and thus deemed ineligible.

**Conclusions:** ED-initiated ECMO is a promising intervention as salvage therapy for a subset of cardiac arrest patients. Given that this technology comes with significant expense and logistical challenges, ECMO must be reserved for patients meeting strict criteria. The results of this chart review suggest an existing patient population at our institution that may benefit from an ECMO protocol.

## 50 Revisions to National EM M4 Examinations Improve Item Performance

Miller E, Heitz C, Beeson M / Harvard Medical School, Massachusetts General Hospital, Boston, MA; Virginia Tech Carilion School of Medicine, Roanoke, VA; Akron General Medical Center, Akron, OH

**Background:** Two forms of the National Emergency Medicine (EM) Fourth-year (M4) Examination became available in 2011 and 2012 for assessment of students at the end of EM clerkships. The 50-item examinations assess knowledge in a published EM4 curriculum and contain items written according to published item writing guidelines. Examination performance statistics are assessed annually with a goal of revising examination items as needed to maintain average examination score of around 80% with items of varying degrees of difficulty.

**Objectives:** To identify items with undesirable difficulty (too high or too low), replace them with new items, and reassess performance of replaced items.

**Methods:** Item performance data, including difficulty score (pDiff, the percentage of students answering an item correctly), were collected using test administration software, LXRTTests, from July 2014 to March 2015. Six items on V1 with pDiff > 0.95 and four items on V2 with pDiff < 0.4 were replaced by new items covering the same topics. Item performance data was collected following replacement of items from July to October 2015.

**Results:** 1790 students completed V1 in the initial time period, during which time the average pDiff of the six items on V1 selected for replacement was 0.97 (SD 0.01). Following replacement of these six items, 1012 students completed the revised V1 and average pDiff of the revised items decreased to 0.59 (SD 0.29). Two of the six new items were noted to be particularly difficult, with pDiff of 0.14 and 0.25. When these two items were removed from analysis, the pDiff of remaining four new items was 0.78 (SD 0.12). The average V1 examination score decreased from 81.5% (SD 3.7) pre-revision to 78.2% (SD 4.2) post revision. 471 students completed V2 in the initial time period, during which time the average pDiff of the four items on V1 selected for replacement was 0.30 (SD 0.08). 384 students completed V2 following replacement of these four

items, and the average pDiff of the four items increased to 0.76 (SD 0.05). The average V2 examination score increased from 78.4 (SD 4.4) to 83.1 (SD 5.1).

**Conclusions:** Replacement of very easy and very hard items on the National EM M4 Examinations resulted in improved performance in eight of ten replaced items. Ongoing revisions are planned to continue refining performance of the examinations.

## 51 SLOE Lower Third Ranking: Is it the Kiss of Death?

Pelletier-Bui A, Rimple D, Pasirstein M, Van Meter M / Cooper Medical School of Rowan University, Philadelphia, PA; University of New Mexico, Albuquerque, NM; Drexel University College of Medicine, Philadelphia, PA; The University of Texas Health Science Center at Houston, Houston, TX

**Background:** The Standardized Letter of Evaluation (SLOE) was implemented to help better understand an applicant's strengths and weaknesses, and better compare them with their peers. The questions are stratified into top 10%, top third, middle third and lower third. Many authors of SLOE's are concerned that a global assessment of an applicant in the lower third is the "kiss of death."

**Objectives:** Capture adherence to SLOE ranking guidelines and assess whether a ranking in the lower third adversely impacts a student's ability to match in Emergency Medicine.

**Methods:** : In 2015, an IRB approved survey was sent to the Council of Residency Directors' listserv regarding medical student advisement. Respondents were asked if their program adhered strictly, loosely, or not at all to the recommendation to equally distribute students within the thirds. They were asked about their interview practices and match characteristics for students in the top, middle and lower third on their global assessments.

**Results:** See Table 1

In a separate question, sixty nine percent of respondents felt that applicants that they rated in the lower third were well suited to become respectable EM physicians.

**Conclusions:** Less than half of EM programs reportedly adhere to SLOE ranking guidelines strictly but most programs reportedly adhere at least loosely. Most programs interview students ranked in the lower third. Programs adhering strictly to ranking guidelines were more likely to interview students in the lower third than those adhering loosely or not at all. Given one third of respondents did not know if they matched an applicant ranked in the lower third, it is difficult to assess how many of these students actually matched. At least 28% of programs did match applicants ranked in the lower third, and programs adhering loosely to guidelines were more likely to match students from the lower third. Lastly, the majority