

Conclusions: We developed a hybrid obese cricothyrotomy task trainer. This is a unique and valuable task trainer as the need to be facile with this procedure in this population is paramount. In future iterations, modification of the thickness of the subcutaneous layer can vary the difficulty of the task trainer highlighting its potential for health professional education.

17 Do Attending EPs Change Their Head CT Ordering Practices After Reviewing Their Head CT Utilization Data?

Miller D, Moubarek M, Vakkalanka P, Mohr N/University of Iowa Hospitals and Clinics, Iowa City, IA

Background: CMS proposed OP-15 as an efficiency measure of whether head CT (HCT) scans ordered in the ED were indicated. We instituted a modified OP-15 as a quality assurance (QA) effort.

Objectives: Did HCT ordering decrease after Emergency Physicians (EPs) reviewed data on their imaging practice, and was any observed change correlated with a change in the rate of missed diagnosis or death?

Methods: This was an observational retrospective study conducted at a tertiary referral center comparing attending EP's rates of HCT during pre-intervention (PI) (April-Aug 2012), post-education (PE) (Dec 2013-March 2014), and post-review periods (PR) (April -Aug 2014). For each phase of the study we collected the most recent ten headache visits seen by each EP. In April 2013 we educated EP's on appropriate HCT ordering through a series of lectures, discussions and emails. Over Jan-Feb 2014 all EPs individually reviewed their HCT ordering metrics during annual performance reviews. In the summer of 2016 we queried the EMR for all patients sampled during the QA effort and reviewed all notes from ED, Primary Care, Neurology, Neurosurgery, and Radiology for the 21.5 month periods following each index ED visit to determine whether significant intracranial conditions not known during the initial visit were later diagnosed or if death from any cause occurred. We excluded transfer patients and those with a history of ventriculoperitoneal shunt.

Results: We reviewed a total of 598 medical records and observed a head CT rate of 36% in both the PI and PE periods vs 26% in the PR period ($p = 0.036$). We observed a total of 12 deaths (3 in PI, 5 in PE, and 4 in PR) and 29 intracranial conditions diagnosed after the index ED visit. An attending EP reviewed each of these charts and found that only six of the subsequently diagnosed intracranial conditions may have been diagnosable at the index visit (2 in PI, 3 in PE and 1 in PR). No deaths appeared related to missed diagnoses. There were no statistically significant differences in death or missed diagnosis between periods.

Conclusions: We did not observe a difference in physician head CT ordering practices after educational intervention, but after all physicians reviewed their individual performance data we observed a decrease in head CT utilization of 10%. This was not associated with a change in rate of missed diagnosis or death.

Table 1. Outcome rates by epoch.

Epoch (number of patients)	Pre-intervention (183)	Post-education (215)	Post-review (200)
CT ordering rate percentage	36%	36%	26%
Death after ED visit (%)	3 (1.6%)	5 (2.3%)	4 (2.0%)
Missed diagnosis (%)	2 (1.1%)	3 (1.4%)	1 (<0.5%)

18 Does USMLE Step 1 & 2 Scores Predict Success On ITE and ABEM Qualifying Exam - A Review of an Emergency Medicine Residency Program from its Inception.

Nelson M, Calandrella C /North Shore University, New York, NY

Background: Over the years, Emergency Medicine has become a very competitive specialty with regards to the match process. This has led to program directors viewing more and more applications for the same limited residency positions. Given this daunting task of reviewing hundreds of applicants in order to select only the best fit for the program, many in residency administration have used applicant's standardized scores as a screening process to choose which applicants they will interview. The belief is that if an applicant is successful on these standardized exams they should be successful on exams during their residency (Inservice Training Exam), as well as their post-graduate exams (ABEM Qualifying exam). Minimal literature has suggested only mild to moderate correlation¹.

Objectives: Our goal was to see if this accepted preconceived notion was based in any truth. We attempted to do this by looking at USMLE scores, ITE scores and success on ABEM Qualifying Exam in an Emergency Medicine Residency over a 20 year span of time. The qualifying examination is a criterion-referenced examination. Therefore, anyone scoring 75 or higher passes the examination. This score was determined by ABEM by looking at the relationship between the ABEM ITE scores from the final year of residency and the ABEM Qualifying examination performance².

Methods: We collected scores of USMLE Step1 & 2, ITE score from the PGY -3 yr and whether or not the resident successfully passed the ABEM Certification Exam on the 1st attempt from our archives of all residents who have graduated from our three year EM residency over the last 20 years. We compared the mean scores of each of the groups based on whether or not they passed the ABEM Qualifying exam, as well as whether or not they scored above a 75 on their graduating year ITE. We compared the two groups using the t-test to assess for significance

Results: There is a significant difference between mean USMLE step 1 and step 2 scores, respectively for residents who passed the qualifying exam (220.4) and residents who failed the qualifying exam (step 1 - 220.4/207.9, $p < 0.05$ and step 2 - 228.8/208.9, $p < 0.05$). There is also significant difference between mean USMLE step 1 scores for residents who scored greater than or equal to 75 on ITE (220.0) and residents who scored below 75 on the ITE (209.0), $p < 0.05$. However there is not a significant difference between mean USMLE step 2 scores for residents who scored greater than or equal to 75 on the ITE (227.2) and residents who scored below 75 on the ITE (218.7), $p > 0.05$.

Conclusions: Our results seem to validate that higher scores on USMLE step 1 and 2 both seem to correlate with a higher rate of success in passing the ABEM Qualifying Exam. It also supports that higher Step 1 scores seem to correlate with success on the ITE. Surprisingly, we did not see a significant difference in USMLE step 2 scores with relation to ITE. These results represent the information from the entire breadth of a residency program over 20 years. With an increase in the competitiveness of the Emergency Medicine Residency Match, there continues to be an increase in the overall USMLE scores, and thus the statistical significance may need to be reexamined.

19 Early Clinical Experience in Emergency Department Yields Higher Scores on Standardized Clinical Assessments

Royan R, Wu C, Theyyanni N, Montas S, House J, Lukela M, Santen S/University of Michigan Medical School, Ann Arbor, MI

Background: The Clinical Reasoning Elective (CRE) is a student-led program which provides pre-clinical students exposure to real patients and the opportunity to practice building differential diagnoses. The program, now entering its fifth year, has been a supplement to the pre-2016 University of Michigan Medical School (UMMS) curriculum. Each year, the CRE has received overwhelming positive feedback from students, however little is known about the objective benefit of the CRE with respect to students' clinical skills.

Objectives: Assess the influence of participation in the CRE on students' clinical skills.

Methods: In the 2015-2016 academic year, 120 pre-clinical students were matched with 55 physician-mentors at the UMMS and Veteran's Administration Health System. Students completed histories and physical exams on patients who presented to the ED, with an emphasis on the organ systems they were currently studying. Students were expected to formulate a differential diagnosis, which they

presented and discussed with their faculty member who would provide feedback on their history and exam.

Self-reported participation in the CRE was compared with students' individual scores on the M2 Comprehensive Clinical Assessment (CCA). This exam covers 12 domains of physical exam skills, history taking, verbal presentation, and patient communication. All students who took this exam in 2016 (N=171) were included in the analysis.

Results: 107 out of 120 CRE participants completed an average of 10 sessions over the course of the program (range=1-20). Students who participated in CRE performed better on the clinical skills examination. Participation in the CRE as a continuous measure was significantly correlated with 5 domains of the M2 CCA including: abdominal history ($r=.23$), pulmonary physical exam ($r=.169$), communication ($r=.159$), and overall scores for physical exam ($r=.159$), and history taking ($r=.209$).

Conclusions: There is a measurable improvement in clinical skills performance for UMMS students who participated in the Clinical Reasoning Elective. In addition to the popularity of the CRE and the desire to make it an accessible experience for all students, expanding pre-clinical learning within the emergency department also proved to be a successful tool to teach communication, history, and physical exam skills on real patients.

20 Educational Needs of Non-EM Residents Rotating in the Emergency Department

Veronese C/UNC Hospital, Chapel Hill, NC

Background: Most academic institutions in the US have non-EM residents (NEMR) providing patient care in the Emergency Department (ED). Despite this, little is known about their learning goals or most valuable educational resources. These residents have diverse backgrounds based on their specialty which include Medicine, PM&R, Orthopedics, Surgery, ENT, Neurology, Psychiatry, Pediatrics, and ObGYN. Given this diversity, we aimed to assess their learning goals and needs in order to assist in the development of a more robust curriculum.

Objectives:

- To determine their educational goals for the rotation.
- To gauge the level of comfort of NEMR on basic EM medical knowledge and procedures pre and post rotation.
- To identify the most useful resources in their education.

Methods: A total of 40 NEMR rotating through UNC Hospital ED between January and November 2016 were surveyed anonymously pre and post rotation. IRB approval was obtained.