

UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

Developing Grading Guidelines for The NBME® Emergency Medicine Advanced Clinical Examination

Permalink

<https://escholarship.org/uc/item/73m194rd>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 18(5.1)

ISSN

1936-900X

Authors

Ross, L
Wald, D
Miller, E
et al.

Publication Date

2017

Copyright Information

Copyright 2017 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Results: The 2 groups of students used a Likert scale from 1-10 to rate their satisfaction on multiple aspects of the rotation. There was no statistical difference in satisfaction scores when the rotation format was changed to a DA. The p-values and confidence intervals are included in Table 2.

Conclusions: In this small cohort of students there was no difference in student’s preference or satisfaction from our traditional rotation to DA.

Table 1.

Questions	Pre- median (25%, 75%)	Post- (median, 25%, 75%)	p-Value
Satisfaction with Schedule	9.0 (7.25, 9.0)	8.0 (7.0, 9.0)	0.44
Navigation Through ED	9.0 (7.0, 9.0)	9.0 (7.0, 9.0)	0.73
Level of Responsibility	8.0 (7.0, 9.0)	7.0 (5.75, 8.25)	0.36
Overall Learning Experience	9.0 (8.0, 10.0)	8.5 (7.0, 10.0)	0.49
Part of the Team	8.5 (7.0, 10.0)	9.0 (7.75, 10.0)	0.94
Overall Experience	9.0 (8.0, 9.25)	9.0 (8.5, 10.)	0.39

Table 2.

Questions	Pre- median (25%, 75%)	Post- (median, 25%, 75%)	p-Value
Satisfaction with Schedule	9.0 (7.25, 9.0)	8.0 (7.0, 9.0)	0.44
Navigation Through ED	9.0 (7.0, 9.0)	9.0 (7.0, 9.0)	0.73
Level of Responsibility	8.0 (7.0, 9.0)	7.0 (5.75, 8.25)	0.36
Overall Learning Experience	9.0 (8.0, 10.0)	8.5 (7.0, 10.0)	0.49
Part of the Team	8.5 (7.0, 10.0)	9.0 (7.75, 10.0)	0.94
Overall Experience	9.0 (8.0, 9.25)	9.0 (8.5, 10.)	0.39

using traditional (books, journals, question banks) and non-traditional resources (free open access medical education), hours of didactic lecture attended, number of textbook chapters read, study questions completed, and weekly study sessions. We present descriptive data of the resident cohort.

Results: Sixty-three of 77 participants (82%) completed an average of 5.4 (range 1-22) weekly surveys from a maximum of 33 weeks. Participation varied from 1-32 residents/week. On average, individual residents attended 3.3 (0-5) hours of weekly conference lecture and spent 2.6 (0-12) and 1.2 (0-6) hours/week studying traditional and non-traditional resources, respectively. Residents read 0.3 (0-3.1) textbook chapters, completed 22 (0-200) study questions, and studied at an average frequency of 2.7 (0-7.9) times weekly.

Conclusions: Initial trends indicate that EM residents use weekly conference lectures as their primary source of learning, followed by traditional, then non-traditional resources. Data collection is limited by recall bias and highly variable participation rates. For further study, we plan to report study habit trends of top ITE scorers, as defined by a projected >90% likelihood to pass the QE, after the February 2017 ITE exam.

14 Describing the Study Habits of Emergency Medicine Residents, A Preliminary Analysis

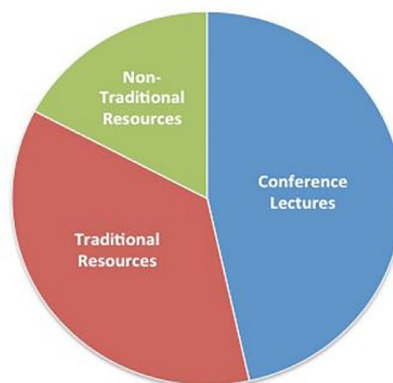
Murphy A, Conley R, Ng V/Banner- University of Arizona, Tucson, Tucson, AZ

Background: Physicians must be independent learners to mature into responsible practitioners. As the variety of available resources expands, physicians must identify effective study strategies. We sought to describe the learning habits of EM residents, specifically the type and quantity of methods utilized, leading up to the 2017 EM In-Training Exam (ITE). As the ITE is predictive of first pass success on the ABEM Qualifying Exam (QE), we aim in the future to provide residents effective strategies that may lead to QE success by analyzing the habits of top ITE scorers.

Objectives: The purpose of this preliminary study is to describe resident study habits, which will allow us to know areas of study that can be improved upon.

Methods: University of Arizona EM residents provided consent for participation and are de-identified by study number assignment. Each resident received a weekly survey on which they reported their study practices from the prior week. Data was collected from February through October 2016 and included the number of hours spent

Proportion of Resource Utilization EM Residents



15 Developing Grading Guidelines for The NBME® Emergency Medicine Advanced Clinical Examination

Ross L, Wald D, Miller E, Askew K, Franzen D, Lawson L, Fletcher E/National Board of Medical Examiners, Philadelphia, PA; Lewis Katz School of Medicine at Temple University, Philadelphia, PA; Harvard Medical School, Boston, MA; Wake Forest School of Medicine, Winston-Salem, NC; University of Washington School of Medicine, Seattle, WA; East Carolina University, Greenville, NC

Background: The National Board of Medical Examiners (NBME®) provides guidelines to medical schools that

administer the clinical science subject exams to assist clerkship directors in determining grading standards for their students. In 2013, the NBME introduced the Emergency Medicine (EM) Advanced Clinical Examination (ACE) as an end-of-clerkship assessment for fourth-year medical students. The EM ACE was developed by an NBME task force of EM medical student educators. The exam was designed to assess the knowledge of medical students following a required 4th year EM clerkship.

Objectives: Our objective was to conduct a webcast standard setting study to develop grading guidelines that would assist clerkship directors in analyzing performance and determining passing and honors standards for the EM ACE.

Methods: In 2015, 27 EM medical student educators from 26 U. S. medical schools participated as judges in one of three webinar training sessions. Judges were trained in two standard setting methods; the Modified Angoff content-based method, a criterion referenced approach utilizing a panel of subject matter experts and the Hofstee Compromise method which incorporates both a relative and an absolute standard setting model. Judges also had the opportunity to discuss borderline examinee performance and practice item ratings. Judges independently reviewed the exam content and rated the difficulty of each item on one form of the EM ACE. Results were summarized and integrated across the two procedures and recommended standards reported on the subject exam score scale.

Results: The recommended minimum passing score using the Modified Angoff method is 57. This score fell within the range of minimum passing scores (53 - 62) when using the Hofstee method. This suggests that any passing score selected within this range is acceptable. The recommended minimum passing score when using the Hofstee method is 59. The recommended acceptable minimum scores for honors based on the Hofstee method fell between a score of 74 and 91.

Conclusions: Proposed passing and honors standards based on an item-by-item analysis of the exam content, as well as a global analysis of the content by EM medical student educators should provide helpful grading guidelines to assist clerkship directors in setting fair and valid standards for the EM ACE.

Table 1. Demographics of Emergency Medicine Expert Judges and Participating Medical Schools.

Number of Judges	Years of Experience	Number of Schools	Use CDEM National Curriculum	Pre-clinical School Curriculum		School Clerkship Length
				Traditional	Integrated	
27	1 – 20	26	93%	22%	56%	2 - 4 weeks

Table 2. EM ACE Grading Guidelines for Passing and Honors Standards (Mean Scaled Scores).

Modified Angoff		Hofstee Compromise Procedure	
Recommended Passing Score	Range of Acceptable Minimum Passing Scores	Recommended Passing Score	Range of Acceptable Minimum Honors Scores
	57		53 to 62

16 Development of a Novel Obese Cricothyrotomy Task Trainer

Hwang J, Crichlow A, Parsons J, Ponnuru S, Goswami V, Hamilton R, Vozenilek J, Griswold S/Drexel University College of Medicine, Philadelphia, PA

Background: Cricothyrotomy is a rare but emergent procedure. Consequently many task trainers have been developed. However, many represent patients with normal body mass indexes (BMIs). In 2011-2012 the percentage of the US population who were considered overweight or obese was 68.5% (34.9% obese).

Objectives: Due to these statistics and a request from Emergency Medicine (EM) faculty members for cricothyrotomy training, we developed an obese patient cricothyrotomy model. It was integrated into a cricothyrotomy training faculty session and we surveyed participants' views about it.

Methods: IRB exempt status was obtained. We used a 3-D printed base model developed by Jump Simulation. A pig trachea was attached to the 3-D base. A 1.5 cm thick synthetic layer of subcutaneous tissue was placed over the trachea. The synthetic layer of subcutaneous tissue was obtained from the subcutaneous layer of the abdominal tissue set from the TraumaMan Surgical Simulator®. A layer of synthetic skin was placed over the subcutaneous layer. 3 different skin layers were trialed: skin from the Simulab® Catastrophic Event Team Training Package, from the TraumaMan Surgical Simulator®, and a combined skin-subcutaneous tissue set using ballistics gel developed by Jump Simulation. A balloon was placed at the distal end of the pig trachea to simulate lung expansion. EM faculty members from an urban, resource limited hospital volunteered to participate. They performed 2 traditional surgical and 2 needle cricothyrotomies using the Melker® cricothyrotomy kit. Pre and post survey data was collected.

Results: 20 participated in the session. The majority (14 (70%)) performed a cricothyrotomy at least once in their clinical practice. 83% of respondents stated that model was "very realistic". The criticisms focused on using it to practice needle cricothyrotomy due to the needle becoming clogged with ballistics gel and difficulty interpreting the location of the needle due to aspiration of air from potential spaces between the layers of the trainer.