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

Title

Do Emergency Medicine Residency Graduates Feel Prepared To Manage Closed Fractures After Training?

Permalink

<https://escholarship.org/uc/item/3864z909>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 17(4.1)

ISSN

1936-900X

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Publication Date

2016

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later. We believe this simulation can provide lasting working knowledge and comfort with mass casualty triage and can be easily reproduced on a regular basis, making it a useful addition to an emergency residency mass casualty curriculum.



Figure 2.

4 Skill Retention After Completion of a Proficiency-Based Curriculum to Teach Cricothyroidotomy

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Background: When designing a curriculum for teaching procedures in an emergency medicine (EM) residency, it is important to provide adequate learning opportunities for residents to become proficient in highly important but rarely performed procedures. Prior methods using a proficiency-based training (PBT) curriculum have evaluated knowledge retention of surgical skills among medical students and surgical residents. Determination of the optimal interval for retraining of rarely performed skills among EM residents is not clearly defined.

Educational Objectives: This project is designed to use a PBT curriculum to teach cricothyroidotomy. Further, it is designed to determine the time interval that competence in this procedural skill is retained after a single PBT session. This method of teaching was chosen as it has previously been demonstrated to be effective in teaching and retention of more common skills, and is easily replicated in most EM training programs.

Curricular Design: Residents were asked to perform a cricothyroidotomy on a model. Each participant then underwent a teaching session in which he/she watched a video of a cricothyroidotomy and the proctor performed the

procedure on a model explaining each of 12 critical actions. The resident performed the procedure in front of the proctor with direct feedback provided. The resident was asked to practice the procedure until he/she performed two procedures in a row fulfilling all critical actions. He/she then performed the procedure in front of the proctor who decided if all critical actions were met and completed in less than 45 seconds. If the participant did not, he/she was allowed to practice and retest until all actions were completed in less than 45 seconds.

Impact/Effectiveness: This project contributes to the advancement of knowledge in effective curricular design for procedural education in EM residencies. Each participant's confidence level, number of critical actions completed and time to completion was recorded prior to the teaching session. Half the participants retested at 6 months and half will retest at 12 months. Among the 6 month participants, the confidence level increased from an average of 3.7 to 5.7/10. The average number of critical actions performed increased from 7.7 to 8.6/12. After a single demonstration of the correct procedure and one chance to retest, the number of critical actions performed increased to 11.5/12.

Lightning Oral Presentations

1 Do Emergency Medicine Residency Graduates Feel Prepared To Manage Closed Fractures After Training?

Pittman M, Lall M, Wills C, Yarris L, Ufberg J, Hegarty C, Smith J, Love J/Georgetown University Hospital/ Washington Hospital Center, Washington, DC; Emory University School of Medicine, Atlanta, GA; Highland Hospital Emergency Medicine Residency, Berkeley, CA; OHSU Department of Emergency Medicine, Portland, OR; Lewis Katz School of Medicine at Temple University, Philadelphia, PA; University of Minnesota Department of Emergency Medicine, Minneapolis, MN; Rhode Island Hospital, The Miriam Hospital, Providence, RI; Georgetown University Hospital/Washington Hospital Center, Washington, DC

Background: Fractures comprise 3% of all Emergency Department visits. Although Emergency Physicians may be responsible for managing most of the initial care of these patients, many report lack of proficiency and comfort with these skills.

Objectives: Our primary outcome was to assess how prepared recent EM residency graduates felt managing closed fractures. Secondary objectives identified whether residency training or independent practice contributed most to the current level of comfort with these procedures, and which fractures were most commonly reduced without orthopedic consultation.

Methods: This study was deemed exempt by the primary site IRB. An online survey was sent to graduates from 7 EM residency programs over a three month period. The anonymous survey was created through an iterative process, with a literature search and expert review informing item selection to optimize content validity, and piloted on 39 representative sample subjects to assess clarity and ensure response process validity. Each site PI invited graduates from 2010 to 2014 to participate and followed a set schedule of reminders.

Results: The response rate was 74.7%, and included 3-year (69%) and 4-year (31%) programs. Practice in community, academic and hybrid settings were reported by 52.3%, 22.3%, and 25.4% respectively. It was indicated by 47.7% that they reduce closed fractures without a bedside orthopedic consult greater than 75% of the time. The majority of graduates felt somewhat prepared (43.9%) or fairly well prepared (30.7%) upon residency graduation. Post-residency independent practice contributed most to the current level of comfort for 54.4%. The most common fractures requiring reduction were wrist/distal radius and/or ulna, next finger/hand, and finally, ankle/distal tibia and/or fibula.

Conclusions: Although most recent graduates feel at least “somewhat” prepared to manage closed fractures in the ED, most felt independent practice was a greater contributor to their current level of comfort than residency training. Recent graduates indicate fracture reduction without orthopedic consultation is common in today’s clinical practice. This survey identifies common fractures requiring reduction that EM residencies should utilize as a focus for training and inclusion in an orthopedic curriculum to better prepare their residents for independent clinical practice.

2 Competitiveness of Emergency Medicine as a Specialty

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Background: Students interested in matching in Emergency Medicine are applying to more programs than ever before. The average student in 2006 applied to 25 programs. In 2015, that number increased to 41.4. (1) The perception that the field of Emergency Medicine is becoming more competitive may play a role in this upswing in applications.

Objectives: To compare competitiveness of EM to other large (>1000 spots) specialties.

Table 1. A Comparison of Matched US Seniors* Across Specialties with > 1000 Spots (& Orthopedics) 2014.

Metrics	All Spec.	EM	Ortho (<1000)	IM	Gen Surgery	OB/GYN	Anesthesia	Family	Pedi	Psych
% US Senior applicants matching	95.2	93	77	97	85	91	96	96	96	96
USMLE Step I	230	230	245	231	232	226	230	218	226	220
USMLE Step II	243	243	251	243	245	242	241	234	241	233
% AOA	16	12	32.2	16.4	15.3	12.6	10.6	8	12.9	4.9
% Top 40 School	32.7	29.3	33	35.9	32.5	29.8	29.3	28	31.4	34.5
Research Experience	2.7	2.2	3.7	2.6	3.1	2.7	2.5	1.7	2.2	2.5
Abstract, Presenting, Publication	4.2	2.9	6.7	3.9	4.4	3.3	3.3	2.3	3	3.8
Work Experience	3	3.4	3	2.7	3	3.1	2.9	3.6	2.9	2.9
Volunteer Experience	7.1	7.1	7.1	6.7	6.7	8.3	6.6	7.8	8.2	6.6

*US Seniors are defined by the NRMP as graduating 4th year medical students from Allopathic schools.

Methods: To better gauge EM’s competitiveness, we used data from NRMP’s “Charting Outcomes in the Match: Characteristics of Applicants Who Matched to Their Preferred Specialty in the 2014 Match” to compare EM with other large specialties. Orthopedics was added to this comparison to give an example of a highly competitive specialty. Included in this comparison are the following characteristics: Percentage of US Seniors who applied who match with that specialty, USMLE Step 1 and 2 scores, % of students who are AOA, % of students from a top 40 school, numbers of research experiences, publications, work experiences and volunteer experiences. Characteristics of residency programs included the total percentage of specialty spots that were filled, the percentage of specialty spots filled by US Seniors, and the numbers of ranks needed per spot to fill. (2)

Results: See Table 1 and Table 2

Conclusions: While we have seen increased competitiveness of applicants applying to EM programs, so have other specialties. EM is actually “average” on metrics of matched US seniors when compared to other specialties. When compared to a widely recognized “very competitive” specialty such as Orthopedic Surgery, EM has significantly lower metrics for academic and extracurricular performance. When evaluating metrics of residency programs, EM may be considered more competitive than all of the larger specialties except for General Surgery and OB/GYN; both need to rank fewer applicants to fill each training spot and do so with similar percentages of US Seniors when compared to EM suggesting that they might have a competitive advantage.

1 Historical Specialty Specific Data (EM) AAMC ERAS 2015-10

2 Charting Outcomes in the Match: Characteristics of Applicants Who Matched to Their Preferred Specialty in the 2014 Main Residency Matching Program (NRMP) Aug 2014.