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.

Table 2. A Comparison of Residency Programs Across Specialties with > 1000 Spots (& Orthopedics) 2014.

Metrics	*EM*	Ortho (<1000)	IM	Gen Surgery	OB/GYN	Anesthesia	Family	Pedi	Psych
Total % of specialty spots filled	***99.2***	99.7	99.1	99.4	99.4	97.6	95.8	99.5	97.7
% of specialty spots filled by US Seniors	***77.7***	93.4	48.5	76.5	76.5	71.9	45	68.9	51.8
# of ranks needed per spot to fill	***6.3***	4.4	6.5	5.1	4.9	7.0	5.6	6.9	4.9

3 Residency Applicants Prefer an Online System For Scheduling Interviews

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Background: With increasing numbers of applicants, residency coordinators may be overwhelmed when scheduling residency interviews and applicants often have difficulty coordinating interviews with multiple programs. An online scheduling system might improve the scheduling process.

Objectives: The authors sought to determine applicant mean time to schedule interviews and satisfaction using online scheduling, as compared with manual scheduling.

Methods: An electronic survey to US graduates applying to Emergency Medicine (EM) programs who applied to any of 6 EM programs in the 2014-2015 application cycle. Of the participant programs, 3 used an online system and 3 did not. Applicants were asked to report estimated time to schedule with the online system compared to their average time using other methods. They were also asked to rate their satisfaction with the scheduling process.

Results: Of 1720 applicants to at least 1 of the 6 programs, 856 completed the survey (49.8%). Respondents reported spending less time scheduling interviews using the online system as compared with other systems (median of 5 minutes (IQR 3-10) vs. 60 minutes (IQR 15-240), $p<0.0001$). In addition, applicants preferred using the online system (93.6% vs 1.4%, $p<0.0001$.) Applicants were also more satisfied with the ease of scheduling their interviews using the online system (91.5% vs 11%, $p=0.000$) and felt that the online system aided them coordinating travel arrangements (74.7% vs 41.5%, $p<0.01$.)

Conclusions: An online interview scheduling system is associated with time savings for applicants as well as higher satisfaction among applicants both in ease of scheduling and coordinating travel arrangements. The study is likely generalizable to other medical and surgical specialties.

4 Does Mastery of Cardiac Arrest Management Skills Transfer From A Task Training Environment To A Dynamic High Fidelity Simulated Environment?

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Background: Previously we demonstrated that students can learn and retain mastery level performance of individual cardiac arrest skills (code leader, CL; defibrillator management, DM; chest compressions, CC; bag valve mask ventilation, BVM) in isolation.

Objectives: Assess whether mastery of cardiac arrest management skills learned in single skill environment can transfer to a dynamic high fidelity simulated environment.

Methods: The Emergency Medicine Clerkship (EMC) faculty created checklists designed to test mastery of 4 cardiac arrest skills (CL, DM, CC, BVM). The minimum passing standard (MPS) on each checklist was established by a team of 7 attending emergency physicians using the Anghoff and Hofstee methods. Senior medical students (n=124) were all trained to meet or exceed the MPS with methods previously test. Three hours after skill training students each participated in 4 high fidelity simulated cardiac arrest scenarios testing the 4 previously mastered skills. Performance was recorded based on the original skills checklist.

Results: Students were able to transfer CL and DM skills to the dynamic environment with no significant decline in ability to meet MPS (see table, all $p>0.05$). In the dynamic environment, only 82% of students met MPS for BVM and 93% met MPS for CC showing a statistically significant decline in performance (see table, all $p<0.05$). The most commonly missed item for CC was depth of chest compressions. The most commonly missed items for BVM were head tilt/chin lift and inserting the oropharyngeal airway.

Conclusions: Although some cardiac arrest skills learned in isolation can transfer to a dynamic code environment, this is not the case for all skills. We conclude that students not only need to be trained to mastery in the skill in isolation but also in the environment, especially when the environment will be dynamic and high pressure such as a cardiac arrest.

Table 1. Change in MPS from pre-test to post-test.

Team Role	Rhythm	N	Above MPS Pre-Test Below MPS Post-Test	Above MPS Pre-Test Above MPS Post-Test	Exact *p*
Leader	PEA/Asystole	69	3 (4.35%)	66 (96%)	.25
Leader	VTach/Vfib	69	1 (1.45%)	68 (99%)	.99
DeFib	PEA/Asystole	68	0	68 (100%)	--
DeFib	VTach/Vfib	68	2 (2.94%)	66 (97%)	.50
Chest	All	122	9 (7.38%)	113 (93%)	.004
BVM	All	124	22 (18%)	102 (82%)	<.001