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

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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

Hern H, Wills C, Alter H, Bowman S, Burns B, Evans T, Schnieder J, Yarris L /Alameda Health System - Highland Hospital, Berkeley, CA; Cook County Hospital, Chicago, IL; University of Oklahoma, Norman, OK; Virginia Commonwealth University, Richmond, VA; Boston University, Boston, MA; Oregon Health Sciences Univeristy, Portland, OR

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?

Reed T, McHugh M, Hoyt A, Quinones D, Adams W/ Loyola University Chicago, Stritch School of Medicine, Maywood, IL

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