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Using Simulation to Engage and Educate During Monthly Emergency Medicine Residency Morbidity and Mortality Conferences

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(FoEM) was designed to address this problem, providing resources to incorporate class-directed instruction. Postgraduate year (PGY)-1 residents review fundamental knowledge with Foundations I (F1), PGY-2/3 residents are challenged by advanced topics in Foundations II (F2), and PGY-3.4 residents solidify knowledge in the role of resident teachers. No studies to date have evaluated the benefits to learners and instructors of this near-peer teaching model.

Educational Objectives: We sought to describe use of the resident instructor model at FoEM member sites, determine preferences among learners for resident vs faculty instructors, and quantify benefits to senior residents in the teaching role.

Curricular Design: Didactics within the F1 and F2 courses entail small group, oral boards-style clinical cases. Case content, focused teaching points and best practice guidelines – developed using a modified Delphi approach – are given to instructors in advance. FoEM implementation guidelines encourage member sites to incorporate senior residents as instructors to 1) challenge knowledge; 2) provide structured resident-as-teacher opportunities; and 3) allow faculty to give feedback to resident instructors.

Impact/Effectiveness: A survey of FoEM program leaders and learners was developed by our leadership team and piloted among site leaders. Formal survey administration in March 2018 rendered a 96% response rate (74 of 77 sites); 54% of site leaders reported use of resident instructors, more prominently for F1 compared to F2 cases. Senior residents (Chief, PGY-3/4) acted as instructors more frequently than advanced junior residents (PGY-2). The majority of learners in F1 and F2 preferred a mix of faculty and resident instructors (63%). Nearly all resident instructors reported educational benefit from teaching. Our results support the use of resident instructors within the Foundations model with demonstrated benefits to learners and resident instructors alike.

Table 1. Foundations of emergency medicine leader survey results.

Site Leader Survey: Resident Instructor Use
Do residents serve as instructors for Foundations cases at your site? (N=74) Counts/frequency: Yes (41, 55.4%), No (33, 44.6%)
What kind of instructors teach F1 cases? (N=70) Counts/frequency: Faculty/Fellows (66, 94.3%), Chief Residents (29, 41.4%), Senior Residents (PGY-3/4) (31, 44.3%), PGY-2 residents (1, 1.4%)
What kind of instructors teach F2 cases? (N=47) Counts/frequency: Faculty/Fellows (47, 100.0%), Chief Residents (6, 12.8%), Senior Residents (PGY-3/4) (6, 12.8%), PGY-2 residents (0, 0.0%)

Table 2. Foundations of emergency medicine learner survey results.

Learner Preferences		
Do residents serve as instructors for your F1 cases? (N=882) Counts/frequency: Yes (421, 47.7%), No (461, 52.3%)		
What type of instructors do you prefer for F1 cases? (N=421) Resident Instructors (61, 14.5%), Faculty Instructors (52, 12.4%), Mix of both (267, 63.4%), No preference (41, 9.7%)		
Do residents serve as instructors for your F2 cases? (N=657) Counts/frequency: Yes (233, 35.5%), No (424, 64.5%)		
What type of instructors do you prefer for F2 cases? (N= 233) Counts/frequency: Resident Instructors (26, 11.2%), Faculty Instructors (38, 16.3%), Mix of both (146, 62.7%), No preference (23, 9.9%)		
Resident Instructor Benefit		
Survey Item (1- Strongly Disagree, 3- Neutral, 5- Strongly Agree)	Agree or Strongly Agree	Mean
I felt comfortable teaching Foundations cases.	163/190 (86%)	4.19
I enjoyed teaching Foundations cases.	170/190 (89%)	4.30
I learned something new by teaching Foundations cases.	169/189 (89%)	4.33
Serving as a Foundations instructor had an impact on my career goals.	123/190 (65%)	3.88
Open access to curriculum content is available on the Foundations of Emergency Medicine website: www.FoundationsEM.com		

Educational Soundbites Oral Presentations

1 Using Simulation to Engage and Educate During Monthly Emergency Medicine Residency Morbidity and Mortality Conferences

Stobart-Gallagher M, Kramarski H, Becker J, Pierce D / Jefferson Health System, Philadelphia, Pennsylvania; Einstein Healthcare Network, Philadelphia, Pennsylvania

Background: Participation in morbidity and morbidity (M&M) conferences are an educational requirement under the Accreditation Council for Graduate Medical Education (ACGME). There have been numerous articles published on varying ways to execute this requirement across multiple specialties, but to our knowledge there has not been a published utilization of simulation (SIM).

Educational Objectives: Our goal in providing a visual and simulated representation of a recent challenging case was to promote engagement and participation in residency conference, as well as assist in promoting educational objectives defined by the predetermined M&M case.

Curricular Design: The departmental quality improvement (QI) team chose a recent, challenging medical case with associated morbidity and mortality as usual. Once the case was de-identified, it was rewritten into a simulation case by a senior resident using a predetermined SIM case template identifying both educational objectives specific to the case and specific systems issues. On the day of conference,

the SimMan, iSIM, and procedural equipment were brought to the conference room. An attending, two residents, and nursing staff (who voluntarily attended weekly conference) were chosen at random to run the case in real time using the simulation equipment. They were then walked through a debriefing tool to discuss the set case-based educational and quality improvement objectives before the M&M was discussed in the more traditional step-by-step format, identifying areas for potential systematic improvement.

Impact/Effectiveness: Using a live demonstration of an actual M&M case can improve engagement and participation in resident conference while satisfying learners desire for novel teaching methods and the ACGME requirement. Observers in attendance noted a significant increase in verbal participation during the conference, and evaluations of attendees (via Google Forms) reflected the majority of learners requesting that it replace the typical M&M review. They also noted it to be more educational discourse than “finger-pointing.” We believe that showing the case in multiple forms can reinforce the desired educational objectives and truly engage residents to participate in departmental QI processes.

2 Escape Room: An Innovative Approach to Teaching Disaster Preparedness to Emergency Medicine Residents and Medical Students

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Background: Today’s adult learners find lecture-based curricula ineffective and inefficient. Simulation, small groups, and problem-based learning are now commonly used. Disaster preparedness is often taught using active education strategies such as these. Game-based instruction, however, has not been specifically studied.

Educational Objectives: To determine if this educational strategy is beneficial, we created an *Escape Room* competition to develop problem-solving and resource utilization skills, which are vital in mass casualty incidents (MCI).

Curricular Design: The workshop consisted of four “Escape Rooms.” The participants were divided into teams and presented with a scenario and a series of tasks to complete upon entering each room. In the first room, the participants were required to create a thoracostomy tube suction device out of limited hospital supplies. In the second room, the teams had to address stabilization and transport of an individual impaled through the thorax on a long pole. The third room required rapid, accurate triaging of multiple patients using Simple Triage and Rapid Treatment (START) criteria. Finally, the participants had to manage a patient with polytrauma in an austere, non-medical environment. After the competition,

there was a large- group debrief in which participants shared solutions to the problems. This competition provided learners with a unique challenge: to think creatively and work as a team to find solutions to atypical medical problems.

Impact/Effectiveness: The participants were surveyed before and after the competition. The survey showed that medical students and residents do not feel confident handling an MCI. Given that most residents and medical students expect to encounter such an event during their future careers, this is a missed educational opportunity. Most participants agreed that this competition was engaging and useful. Self-perceived ability to troubleshoot and comfort with resource limitation both improved after the workshop ($p = 0.005$ and $p = 0.001$, respectively). All study participants agreed that the *Escape Room* competition was beneficial to their medical education. Game-based educational interventions show promise as an innovative approach for teaching disaster preparedness and may be an effective method for teaching other elements of emergency medicine curriculum.

3 A Structured Curriculum for Interprofessional Training of Emergency Medicine Interns

Rider A, Nomura M, Anaebere T, Wills C, Duong D / Highland Hospital, Oakland, California

Background: Interprofessional Education (IPE) is now represented in the emergency medicine (EM) Milestones given the interprofessional, team-based nature of emergency department (ED) work. IPE can positively impact patient satisfaction and improve health outcomes. We present a structured curriculum for EM interns to improve interprofessional understanding.

Educational Objectives: The Highland Allied Health Rotation Program (H-AHRP) was developed to help interns 1) understand the roles of fellow health professionals; 2) perform procedures common to those professions; and 3) develop skills of interprofessional communication and approach to patient care.

Curricular Design: H-AHRP sessions were scheduled during orientation month of 2018, along with 10 ED shifts. Interns were paired with preceptors in ED nursing (RN), ED respiratory therapy (RT), ED pharmacy (PH), laboratory (LAB), and social work (SW) in either a four-hour shift (RN, RT, PH), or lecture-based overview (LAB, SW). Pre- and post-program surveys were conducted at the beginning and end of the month, using Likert scale responses (-2 strongly disagree to +2 strongly agree) to assess understanding of scope of practice and logistics of each professional. Interns also completed a post-shift survey to document procedures performed.

Impact/Effectiveness: Of the surveys distributed, 12/12(100%) pre- and 11/12(92%) post-program surveys