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A Structured Curriculum for Interprofessional Training of Emergency Medicine Interns

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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

Patineau A, Leonowics N, Mlynarek C / Ascension St John Hospital, Detroit, Michigan; Lutheran Health Network, Fort Wayne, Indiana

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.

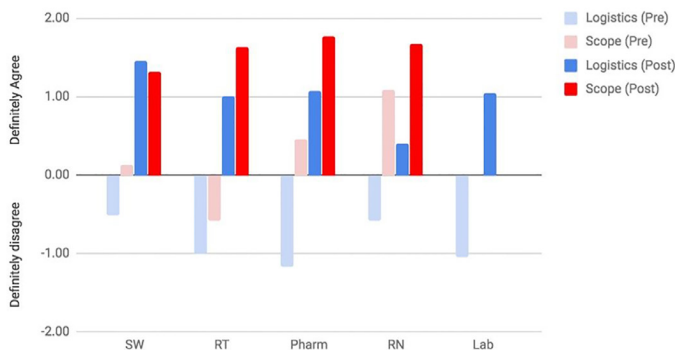
Impact/Effectiveness: Of the surveys distributed, 12/12(100%) pre- and 11/12(92%) post-program surveys

were completed. All seven general interprofessional questions demonstrated better appreciation of IPE after the intervention (+1.0 to +1.7). Interns reported improved understanding of scope of all providers, most notably for RT (-0.6 to +1.6). Greater gains were seen in appreciation of logistics, particularly for PH (-1.2 to +1.1), RT (-1.0 to +1.0), and LAB (-1.0 to +1.0). Overall, participants agreed on the program’s helpfulness in their future (+1.7) and would recommend it to other residencies (+1.8). By integrating IPE into intern year and increasing familiarity with the scope and logistics of colleagues, we hope to promote ED collaboration for effective team-based patient care in residency.

Logistical Measures: Procedures Performed by Interns During H-AHRP Sessions

Lab	RN	RT	Pharm	SW
<ul style="list-style-type: none"> o Proper labeling of tubes o Blood bank safety o Type of additives in each tube o Special handling of specimens o Time frame for processing lab studies o Common provider/lab errors o Microscopy techniques o Culture positivity o Ordering special analyses: CSF, paracentesis, joint aspiration, parasites o When to contact the lab for heme/onc cases 	<ul style="list-style-type: none"> o IV placement o Art line set up o Foley catheter o Medication administration o Obtain EKGs o OG tube placement/wall suction management o Medication protocols (DKA, heparin, electrolyte replacement) o Wound assessment and care o Location of supplies in code room o Set up IV pump and titration of drips 	<ul style="list-style-type: none"> o BIPAP set up and management o Bag valve mask technique o Endotracheal intubation and aftercare o Oxygen delivery devices o Asthma treatment o Peak flow measurements o Equipment ordering o Tracheostomy care and interpretation – including co-oximetry o Ventilator modes and management 	<ul style="list-style-type: none"> o Review allergies o Calculate weight-based dosing o Run drug-drug interaction checker o Medication delivery routes o Review the contraindications for medications o Management of IV infiltration o Assist with conscious sedation or intubation meds o Risk classes of medications in pregnancy o Review antidote dosing o Participate in a medical code or trauma activation 	<ul style="list-style-type: none"> o Shelter Referral o Skilled Nursing Facility Placement o Sexual assault/DV (including DV reporting form) o Decedent care/death notification o Family Conversations o Mental Health Service Referral o Substance Abuse Referral o Minors in the ED o CPS/APS referral o Resources for trauma patients

Understanding the Scope & Logistics of Healthcare Team Members Before & After Intervention



4 A Simulation-Based Curriculum on Best Practices for Firearms Safety

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Background: Gun violence in the United States is a significant public health concern, and emergency departments (ED) have been found to be at risk for the entry of firearms.

Emergency providers (EP) have been shown to have low levels of familiarity with firearms. Given the risks for encountering firearms while at work in the ED, EPs may benefit from dedicated training on safely handling firearms.

Educational Objectives: After participation in this curriculum learners will be able to 1) describe safety measures if a firearm is found on a patient in the ED; and 2) demonstrate the ability to safely remove a firearm from the clinical work space until it can be secured by security personnel.

Curricular Design: Participants included medical students rotating on their emergency medicine (EM) sub-internship and EM bootcamp elective. An eight-item competency checklist was created by a group of attending EPs and hospital security personnel in accordance with gun safety standards, using a modified Delphi approach. Each student was asked to evaluate a patient with dyspnea during a regular simulation session. A model handgun was placed in the patient’s belongings, and upon discovering it the students were asked by the nurse to remove the firearm. The students’ baseline performance was evaluated using the checklist. Students then participated in a small group, hands-on didactic on how to safely handle firearms found in patients’ belongings. Students completed surveys regarding their baseline knowledge of, exposure to, and comfort with handling firearms. Two weeks later, the students were again presented with a model firearm in a different high-fidelity simulation case and asked by the nurse to remove the firearm. Students were evaluated using the checklist, and directed individual feedback was given.

Impact/Effectiveness: Fourteen students completed the curriculum. The median number of correctly performed steps pre-intervention was 5 (interquartile range [IQR] 4-6), and post-intervention was 7 (IQR 7-8, p = 0.002). Learners showed statistically significant improvement in two steps: pointing the firearm in a safe direction at all times (3/14 to 14/14, p = 0.001); and holding the firearm by the grip only (6/14 to 14/14, p = 0.008). This innovation is the first to formally teach learners on the safe handling of firearms found in the ED. This low-cost pilot project is easily transferrable to other training centers for teaching principles of safe firearms handling.

Table. Action checklist for the safe removal of firearms found in patients’ belongings.

	Performed	Not performed
Participant identifies and verbalizes that there is a firearm present in patient care area.	YES	NO
Participant treats the firearm as if it is loaded:		
A. Holds the firearm by the grip only.	YES	NO
B. Keeps fingers OFF the trigger and OUT of the trigger guard at all times.	YES	NO
C. Points the firearm in a safe direction at all times.	YES	NO
Participant does not attempt to manipulate external modifications on the gun (e.g. safety or magazine release).	YES	NO
Participant removes firearm from the immediate patient care area and places it on a clear and safe area.	YES	NO
Participant calls police/security to safely secure the firearm.	YES	NO
Participant ensures that the firearm is monitored and not touched until police/security personnel arrive to secure the firearm.	YES	NO