Title

Escaping the Wilderness Using a Gamified Team-Based Learning Curriculum

Authors

Khowong, Timothy

Hon, Kevin

Jin, Aurora

et al.

Curricular Design: The project started with a needs assessment of the PGY-2 class. We queried familiarity with locations in the ED, patient processes, ED services, and causes of patient frustrations. We used this information as targeted learning points for our curriculum. PGY-1s were given a pre-survey. They were put into groups to go through an in situ simulated patient experience in different areas of our ED. The simulation consisted of triage, bed placement and monitor hook-up, registration, transportation to imaging, etc. A debriefing session was conducted and the post-survey was given.

Impact: PGY-1s reported they had an increased understanding of ED patient flow, contributing factors to patient frustrations, and the connection between patient experiences and patient outcomes. All participants selected that this experience will positively impact their ability to relate to patients and be valuable to their medical education. Conducting an in situ patient experience simulation is a practical and effective way to develop empathy in residents and increase their responsiveness to patients' needs and concerns.

47 Development of a Social Determinants of Health Curriculum for Emergency Medicine Residents

Rachel Miller, Hyunjoo Lee

Background: Social determinants of health (SDH) encompass factors such as race, gender, living situation, economic status, access to food, and access to healthcare. The impact of SDH has been shown to play a larger role in people's overall well-being and health than the medical care that physicians provide. Understanding the impact that SDH has on patients will allow Emergency Medicine (EM) physicians to provide more comprehensive and patient-centered care.

Educational Objectives: A curriculum was created to teach residents about a variety of SDH issues with the goal of making them more informed, comfortable with the associated terminology and concepts, and emphasizing the need to address SDH while caring for patients in the emergency department.

Curricular Design: The curriculum consisted of four one-hour long lectures, given during the orientation month for incoming Stony Brook EM interns. Didactics were structured using powerpoints, videos, and data from peer-reviewed literature. The lectures covered topics of food insecurity, racial disparities, sexism/gender disparities, gender identity and sexual orientation. Pre- and post-lecture surveys were obtained to assess the residents' changes in their understanding and knowledge base.

Impact: EM residents are mandated to receive training in SDH, but the method and manner of this education is highly variable. The development of our curriculum allowed for dedicated time to address SDH training. Survey results support that this curriculum significantly improved residents' understanding of key concepts, comfort level addressing these concepts with patients, and confidence integrating concerns about SDH into treatment plans. Though additional topics will need to be covered as the curriculum evolves, this current curriculum can serve as an initial template for other residency programs in the development of their own SDH curriculum.

## 48 Escaping the Wilderness Using a Gamified Team-Based Learning Curriculum

Timothy Khowong, Kevin Hon, Aurora Jin, Vidhi Rao

Introduction/Background: Emergency Physicians must be equipped to perform emergency stabilization in the variety of situations that people may find themselves ill, ranging from cities to remote places. However, some residents may have little exposure to patients suffering from environmental disorders. To address this problem, we developed a structured, evidence-based curriculum for a wilderness workshop for our residents that utilized gamification to increase engagement and foster communication.

Educational Objectives: By the end of the course, learners should be able to recognize, identify risk factors, triage, describe pathophysiology, predict complications, and develop treatment plans in patients suffering from ingestions and envenomation, mass casualty incidents, altitude and submersion incidents, temperature-related illness, radiation and blast emergency, and wilderness trauma.

Curricular Design: Our curricular design modified the commonly used team-based learning (TBL) framework with gamified elements. The individual readiness assessment test was created with a series of 36 MCQs and was given just prior to the start of the session. We designed a gamified group readiness assessment test in the style of an escape-room with parallel puzzles that were topic-relevant. Participants were then divided into four teams and competed to complete each of the stations.

Impact/Effectiveness: Learner feedback to the session was overwhelmingly positive with an average 4.7/5 Likert rating for relevance and amount of information covered. Their question bank assessments at the end of the year showed a significant increase in mean scores on environmental topics from 59% to 65% ($p < 0.05$). Our development of a wilderness curriculum can be applied to other programs with similar needs looking to supplement their education. Additionally, the modification of the existing TBL framework with gamified elements showed significant improvement in resident learning of a difficult topic.
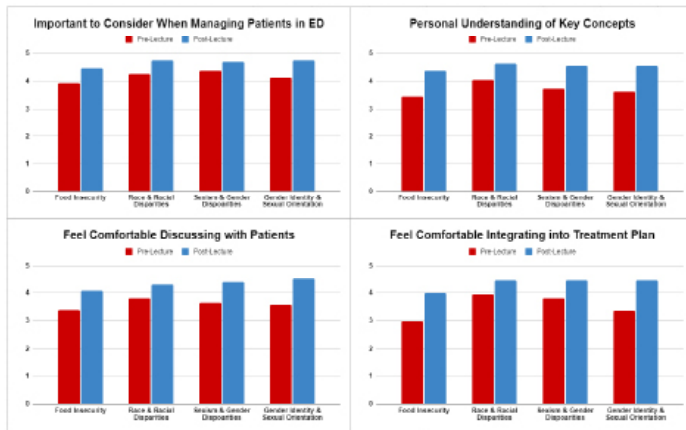
Figure. Impact of social determinants of health curriculum on resident education.

49 Filling Knowledge Gaps Through Gamification: A Community Academic Program's Approach To Teaching Basic Splinting

Lorie Piccoli, Joel Atwood

Introduction/ Background: Splinting is an essential skill for emergency medicine (EM) physicians. We identified a knowledge gap among surveyed EM residents from four regional EM programs in Pennsylvania. Despite 81.5% reporting formal splinting training as residents, most had placed 3 or fewer ulnar gutter, sugar tong, and thumb spica splints. To enhance clinical proficiency and resident confidence in splinting, we taught essential splinting skills at a combined regional conference attended by multiple EM residency programs.

Educational Objectives: 1) Host small group splinting conferences for hands-on learning. 2) Challenge residents to apply appropriate splints for clinical fracture scenarios. 3) Offer real-time grading and feedback on splint quality and appropriateness. 4) Evaluate training effectiveness and knowledge retention through a post-splinting survey.

Curricular Design: This 20-minute curriculum accommodated a diverse group of learners and was repeated eight times. Groups were presented with a simulated arm fracture case and tasked to diagnose the injury, gather necessary splinting materials, and apply splints to live team members. Splints were graded on: 1-Appropriate immobilization of the affected joint, 2-Proper joint positioning, 3-Aesthetic quality of the splint, 4-Comfort and prevention of skin breakdown, and 5-Timeliness. Teams competed for the title of "Best Splinters".

Impact/Effectiveness: This hands-on, small group teaching approach with real-time feedback empowered

learners to acquire vital splinting skills. We provided residents with a tangible understanding of how to correctly apply a splint. Real-time feedback allowed them to rectify mistakes and refine their skills. A comparison of pre- and post-training survey results via Mann-Whitney U testing confirmed improvement in median comfort scores from 2 to 3 (on a 1-4 Likert scale) for all three types of forearm splints (p=0.004, 0.020, 0.001).

50 Early Warning Signs: Incorporating Objective Structured Clinical Examinations into EM Orientation

Matthew Mullins, Matthew Stull

Introduction/Background: The continuum of medical education is often fractured without a learner hand-off. Residency programs must rapidly assess trainee preparation to appropriately balance supervision and autonomy. EM interns spend considerable time on off-service rotations, challenging programmatic assessment. Underperforming learners may not be identified until late in the year, placing a resident well behind their peers. An early identification system for EM core competency-based performance may help programs implement coaching sooner. Utilizing Objective Structured Clinical Examinations (OSCEs) reflecting competencies during EM Orientation can provide this valuable information.

Educational Objectives: First, we sought to assess the feasibility of implementing a level-appropriate OSCE applying the core competency framework for EM interns. In addition, we sought to validate a standardized assessment tool for learners on common EM procedures. Lastly, we aimed to implement OSCEs that informed our Clinical Competency Committee (CCC).

Curricular Design: Utilizing Kern's model, we identified our need for an assessment tool early in intern year. We aimed to create an early warning system to identify areas for improvement, optimizing the time for targeted coaching. OSCEs were chosen as a validated tool to assess performance. We mapped the core competencies to common aspects of EM cases and procedures (i.e., utilizing the PERC rule earned points for systems-based practice and placement of ultrasound-guided IVs for patient care). Residents were scored for each competency in three cases by a trained-faculty member.

Impact/Effectiveness: Implementation of an early assessment program can aid in early detection of residents who may need additional support and will assist in the longitudinal development of residents. Our next steps include better connecting performance on OSCEs with progression through EM milestones based on CCC's impressions.