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The Simlympics: A Novel Gamified Simulation Competition for Emergency Medicine Residents

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51 The Game Is Afoot!: A Simulation Designer's Implementation of Escape Rooms In Graduate Medical Education

Michael DiGaetano, Mary McGoldrick, Michael Jong, Colleen Donovan

Introduction: Medical education escape rooms (ERs) are experiential, game-based simulations (sim) that have grown in popularity over the last decade. While ERs are fun and motivating for learners, they challenge sim designers to step out of their comfort zones to deliver quality experiences. Emergency Medicine (EM) ER design must include an engaging storyline and automated-feedback puzzles (e.g., incorrect solutions prevent forward progress), while testing critical EM concepts. We sought to develop an in-person ER that requires teams to apply key EM milestones to solve a mystery and escape in under 40 minutes.

Educational Objectives: -Challenge learner clinical reasoning and procedural skills within the EM scope of practice -Recreate the excitement of a commercial ER -Integrate wellness activities into core curricular learning.

Curricular Design: EM residents and sim directors designed an ER as an engaging, multimodal teaching experience. Station skills were derived from ACGME requirements including toxin identification, pathologic image recognition, cardioversion, ultrasound, CPR, management of shock states, suture tying, incision and drainage, and airway management. The ER consisted of modular stations that targeted desired skill retention. Participants were surveyed regarding their comfort with each task and their perceived value of an ER as an educational tool. This exercise achieved results consistent with Level 2 of the Kirkpatrick model of evaluation.

Impact/Effectiveness: Learners performed integration of key practical skills and medical decision making in order to complete trials under time constraints. 100% (16/16) of learners successfully escaped the room and agreed or strongly agreed that this exercise was a good use of their

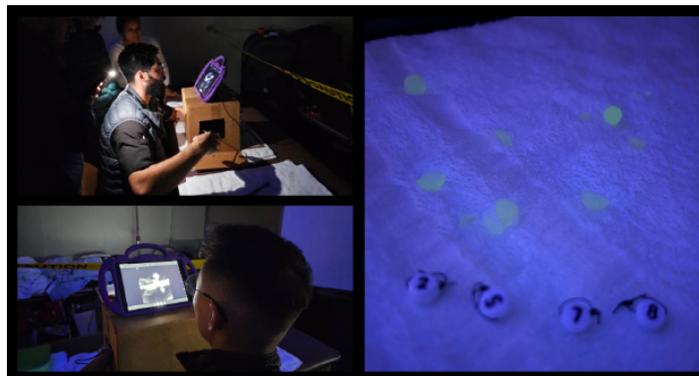


Figure 2.

educational time. Almost all expressed strong interest in future ER learning. We intend to expand and encompass additional skills noted in ACGME requirements while having fun and tackling burnout.

52 The Simlympics: A Novel Gamified Simulation Competition for Emergency Medicine Residents

Thomas Sanchez, Jessie Chen, Brian Smith, Sheetal Sheth, Anika Nichlany, Kallie Combs, Anita Lui, Rozalyn Hesse, Michael Levine, David Simon, Catherine De Guzman, Richard Shin

Introduction: Experiential and interactive learning methods can benefit EM residents over lecture-based curricula. Incorporating gamification into didactics promotes participation from learners. We created a simulation-based competition for our learners as an alternative to typical simulation-based learning which involves case-based learning and procedure labs.

Objectives: Our goal was to redesign a simulation-based conference to incorporate gamification and teamwork amongst the residents. This provides a novel approach to case-based learning and procedure labs while maintaining a dynamic, engaging learning environment.

Curricular Design: 4 30-minute stations targeted EM resident skills. To foster communication and leadership skills, 2 case-based stations were created. For procedural training, 2 task-trainer stations were used. The first station was a “fast-track relay” where learners practiced skills like hemorrhoidectomy and nail bed lacerations. The next station stressed communication, as team members were forced to hand off care every 60 seconds to advance the sim case. The third station was a race with airways of increasing difficulty. The final station was a case in which a blind-folded leader ran a resuscitation relying only on verbal communication. Each station was assessed for accuracy and time to completion. A winning team was selected by the faculty judges.

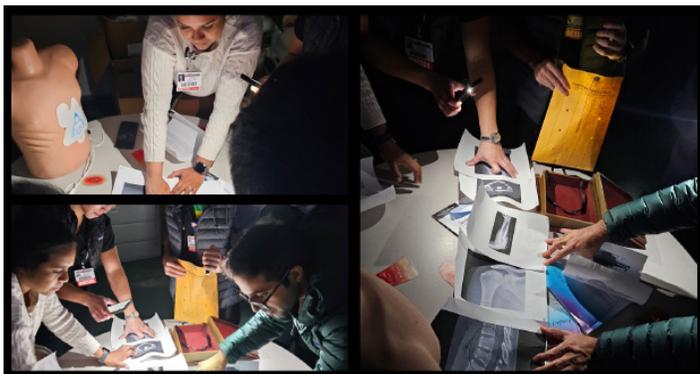


Figure 1.

Impact: Residents completed an anonymous post-conference survey which used a 5-point Likert scale. 100% reported the event was educational, appropriately timed, and covered EM-relevant topics. Residents reported enjoyment in the stations between 4.3- 4.75/ 5 on the Likert scale highlighting a Kirkpatrick level 1 impact. Learners report increased confidence in skills in airway procedures, fast track procedures, leadership, communication, and handoff demonstrating Kirkpatrick level 2 impact. We hope this project will continue annually and demonstrate higher levels of impact for the learners.

53 Creating a Leadership Skills Assessment Tool for Use in Medical Simulation: A Quality Improvement Project

Bridget Matsas, Erin Barry, Scott Szymanski, Dedra Tolson

Introduction: Emergency physicians frequently lead complex resuscitations. Residency programs are increasingly recognizing the importance of leadership training, yet there are limited methods of evaluating leadership performance. As part of a quality improvement project, we developed a leadership skills assessment tool for use during emergency medicine (EM) simulation exercises.

Educational Objectives: We sought to develop an assessment tool that improves how educators evaluate and provide focused feedback on residents' leadership skills during simulated resuscitations.

Curricular Design: This project was approved as quality improvement by our institution's Human Research Protections Office. We identified a leadership assessment tool published in 2021 for use in medical schools. With permission from the primary author to recreate aspects of the original tool, we used the modified Delphi method with key stakeholders to develop a consensus on the most important skills for resuscitation leadership. We finalized and incorporated the tool (Image 1) into our program's monthly simulation training. As EM residents rotated through simulated resuscitations, EM faculty evaluated the assigned team leader using the tool. The simulation team subsequently gave the completed assessment to the learner after the exercise ended.

Impact: There is a dearth of methods to assess and develop resident leadership skills, and this tool provides a way to evaluate leadership skills during simulated resuscitations. We evaluated the tool's effectiveness using a 7-point Likert scale survey. The tool has been received positively by learners thus far, as shown in Table 1. The tool was implemented into our existing curriculum with minimal barriers, and both learners (n=10) and faculty (n=4) on average reported the tool did not impede learning. This tool has been an effective

method of evaluating resident leadership skills during simulated resuscitations, and we continue to implement it.

2023 Leadership Skills Assessment Tool

Learner: _____
 Evaluator: _____
 Date: _____
 Simulation: _____

	N/A	Growth			Solid		Exceeds	
		1	2	3	4	5	6	7
The learner effectively uses closed-loop verbal communication at the interpersonal and team level.	N/A	1	2	3	4	5	6	7
The learner appropriately prioritizes tasks.	N/A	1	2	3	4	5	6	7
The learner effectively communicates a common goal/vision to team members.	N/A	1	2	3	4	5	6	7
The learner uses available information to make decisions.	N/A	1	2	3	4	5	6	7
The learner demonstrates situational awareness.	N/A	1	2	3	4	5	6	7
The learner effectively listens to others and integrates feedback from team members.	N/A	1	2	3	4	5	6	7
The learner remains effective in stressful situations.	N/A	1	2	3	4	5	6	7
The learner demonstrates adaptability.	N/A	1	2	3	4	5	6	7
The learner leads by example.	N/A	1	2	3	4	5	6	7
The learner effectively resolves conflict.	N/A	1	2	3	4	5	6	7
The learner demonstrates cultural humility.	N/A	1	2	3	4	5	6	7

Include any additional feedback for the learner below:

Figure 1. The leadership skills assessment tool used during simulated resuscitations.

*Adapted from the leader development tool created by Erin Barry, John McManigle, and John E. McManigle, entitled "A Self-Assessment and Peer Feedback Tool for Leader Development" and published in 2021 in the *Journal of Leadership, Accountability, and Ethics*.

Table 1. Mean resident responses on rating effectiveness of the leadership skills assessment tool using a 7-point Likert Scale.

Question	Mean ^a (N=10)	Standard Deviation
The leadership skills assessment tool was an effective way to deliver feedback on my leadership skills	6	0.94
The leadership skills assessment tool improved my understanding of my own leadership skills	5.9	0.74
The leadership skills assessment tool was easy to understand and interpret	6.6	0.70
The leadership skills assessment tool did not impede other parts of my simulation learning	6.6	0.52
It is important to me to receive feedback on my leadership performance during medical and trauma resuscitations	6.7	0.67
The leadership skills assessment tool includes leadership skills I feel are important to leading medical and trauma resuscitations	6.3	0.95
I would like faculty to use the leadership skills assessment tool in future simulation exercises	6.2	0.79

^aRated on a 7-point Likert Scale (1 – Strongly Disagree, 7 – Strongly Agree)

54 Defining And Measuring Variance in Clinical Productivity Metrics By Training Level

Eric Shappell, Sangeeta Sakaria, Derek Monette, David Peak, Daniel Egan

Introduction: Previous studies have characterized