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Come One, Come All: Carnival Themed Gamification of Emergency Medicine Resident Board Review

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## 51 Can Efficiency be Taught? A Novel Efficiency Curriculum

Guy Carmelli, Simi Jandu, Viral Patel, Alexandra Sanseverino, Richard Chruich

**Introduction:** Emergency Medicine physicians are tasked with providing simultaneous care to multiple patients. In order to combat increased patient volumes, improve wellness and wage-earning potential, as well as ensure patient safety, development of workflow efficiency (WFE) skills becomes imperative. During training, residents are expected to passively improve their WFE, but there is a lack of formalized efficiency education among residency programs. Here we present a program evaluation for a novel asynchronous virtual curriculum on WFE that was piloted for UMass Chan’s interns in July 2022.

**Objectives:** 1) Prioritize tasks that focus on critical actions in resuscitation followed by patient throughput to maximally utilize ancillary staff participation. 2) Predict the tasks that require the most attention or result in lengthy delays during patient care delivery to minimize roadblocks. 3) Utilize best practices in communication (e.g., closed loop, directive) to decrease errors or care delays and provide safe, efficient signoffs and consultation.

**Curriculum:** A group of educators used Kern’s Six-Step Model to systematically create a WFE curriculum. We performed a global and targeted needs assessment of our stakeholders and were able to identify three WFE evidenced-based categories. We used Articulate Rise learning platform to create our three content modules (Order of Operations, Anticipating Roadblocks & Effective Communication), disseminated online via ALiEMU.com.

**Impact:** This is the first virtual asynchronous curriculum on WFE targeted to new EM learners. Our participants strongly agreed to most satisfaction survey questions (Figure 1). Based on a pre- and post-test multiple-choice questionnaire, residents’ improved on average by 13.72%

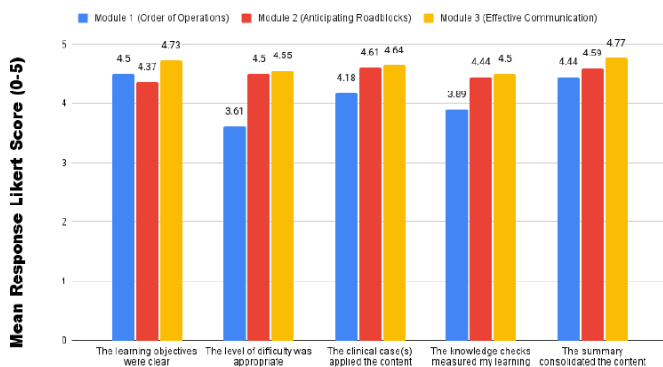


Figure 1. Satisfaction survey.

after curriculum completion (Figure 2). We plan to compare efficiency metrics from the current PGY-1 class to prior years. In conclusion, this curriculum can be utilized by EM training programs to teach efficiency.

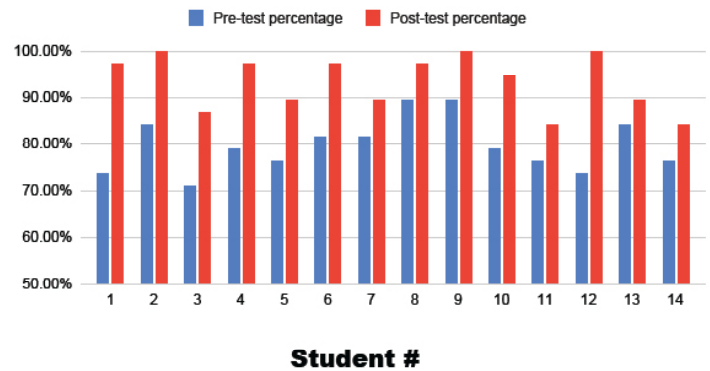


Figure 2. Pre- and post-test percentages.

## 52 Come One, Come All: Carnival Themed Gamification of Emergency Medicine Resident Board Review

Shayne Gue, Taylor Cesarz, Maria Tassone

**Introduction:** Didactics are an essential component of emergency medicine (EM) resident education. Traditionally, formal lecture sessions formed a majority of didactics. Recently, there has been momentum to introduce active learning through small group learning, simulation, and gamification. Gamification can be a successful tool for medical education by meeting a learner’s needs for competence, autonomy, and relatedness, as outlined by the self-determination theory. We explored how gamification of our board review session influenced resident perception on various domains.

**Educational Objective:** To increase resident motivation, engagement, and challenge in ITE preparation and determine various learning outcomes through the design of a team-based gamified interactive board review session.

**Design:** We created a novel, gamified review session consisting of 3 games. Games focused on reviewing visual diagnoses, board-style questions, and “buzz” words. The session was held twice, one time each for two community EM programs. At each session, residents were divided into teams with all PGY levels represented. To assess the intervention, we surveyed residents after completion. The survey utilized a 5-point Likert scale on items indicating agreement with statements regarding perception of motivation, engagement, challenge, and overall

preparedness of the session compared to traditional lecture reviews.

**Effectiveness:** Residents reported overwhelming agreement in all four domains. 20 of 25 (80%) residents completed the survey. High levels of agreement were reported for motivation (4.75, 95% CI=4.51-4.99), engagement (4.85, 95% CI=4.64-5.00), challenge (4.75, 95% CI=4.51-4.99), and overall exam preparedness (4.8, 95% CI=4.57-5.00) compared to traditional lecture-based review methods.

## 53 Development of a Emergency Department Operations and Throughput Curriculum for Resident Physicians

Bryan Stenson, David Chiu

**Introduction:** Emergency Departments (ED) across the country are facing ever increasing levels of crowding and boarding. As a result, it has become more and more difficult to generate throughput through the ED. Furthermore, as volume increases, resources are getting further constrained which leads to multiple bottlenecks in the progression of patients through the ED. There exists little formal education on this topic for ED resident physicians, even though this is a major aspect of the job of an ED physician and a significant contributor to physician burnout.

**Educational Objectives:** This curriculum introduces the basic concepts of queuing theory, human behavior, data analysis and process improvement methodology to teach ED resident physicians to be able to analyze congested EDs and propose changes to fix bottlenecks, increase throughput, better match staffing levels to ED volume.

**Curricular Design:** The curriculum was designed to be as interactive as possible and is composed a mix of lectures, small-group interactions/discussion, and question/answer sessions. Lectures were used to introduce basic concepts around resource bottlenecks, queuing theory, schedule optimization, process/change management. Prior to the session, each resident received a data set that reflects a real-world ED problem. Three case studies were used. One case around need for additional shift. Another around adjusts of the schedule to fit patient arrival. A third around analyzing delays in CT imaging. Participants were broken up into small groups to do their own analysis and present each case study as well as their own data analysis and their solutions to the problem.

**Impact/Effectiveness:** This curriculum has been given at two independent residency programs and has been met with positive feedback. Many commented on the significance of the topic, but little formal education/curriculum regarding it. The case studies were well received and made the session practical and interactive.

## 54 Emergency Medicine Neurocritical Care Bootcamp: A Collaborative Curriculum with Simulation Based Learning

James VandenBerg, Lauren Koffman, Dillon Warr, Penny Garcia, Jane Cripe

**Introduction:** Neurologic emergencies (NE) are a core component of emergency medicine (EM) training. We identified gaps in education of NE, which require identifying subtle physical exam findings that are challenging to reproduce in simulation. We believed using Standardized Patients (SP) in NE simulation cases would reinforce these exam findings, supplement our resident’s training, and add realism to the cases. We collaborated with our neurocritical care team to adapt a neurology simulation-based learning (SBL) bootcamp for EM residents.

**Educational Objectives:** The primary aim was to have EM residents National Institute of Health Stroke Scale (NIHSS) certified and improve knowledge and treatment of NEs.

**Curricular Design:** EM residents completed an educational needs assessment and weaknesses included: acute stroke, seizures, and meningitis. Neurocritical Care faculty prepared didactics on these topics. A previously created simulation-based learning (SBL) course designed by our neurocritical care team for neurology residents was adapted for EM residents, with cases

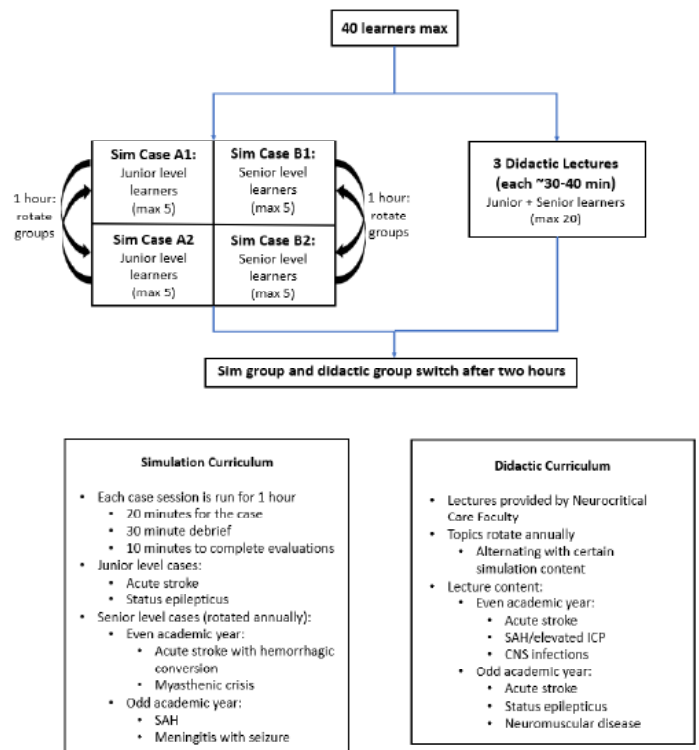


Figure 1. Curriculum overview.