

UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

A Near-Peer Taught Electrocardiogram Curriculum for New Emergency Medicine Residents

Permalink

<https://escholarship.org/uc/item/9hn542h2>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 23(1.1)

ISSN

1936-900X

Authors

Grossman, Duncan
Reopelle, Kestrel
Quinn, Eric
[et al.](#)

Publication Date

2022

Copyright Information

Copyright 2022 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

EM residents on core topics relevant to palliative care in the emergency department. It uses the Hospice and Palliative Medicine – Emergency Medicine (HPM-EM) domains developed by Shoenberger, et al.² After completion, EM residents should be more comfortable with and proficient at initiating goals of care discussions in the ED, treating common palliative care symptoms, and establishing appropriate dispositions for palliative care and hospice patients. This longitudinal curriculum is presented to interns in order to prepare them for their critical care shifts and rotations.

Curricular Design: Our palliative care curriculum is a 1.5 year long, longitudinal conference-based curriculum designed for EM residents. We created a 12 hour curriculum over nine sessions which consist of lectures, case-based small group discussions, simulations, and multi-disciplinary panels. Sessions are led by EM faculty, HPM faculty and fellows, and other interdisciplinary team members.

Impact/Effectiveness: Prior to implementation of the curriculum, a survey was sent to 96 EM residents in order to assess beliefs, knowledge, and self-reported actions related to palliative care in the ED. This data will be compared to a linked post-curriculum survey. Objective data including frequency of palliative care consults, changes in code status, and admissions to the palliative care unit will be pulled from the EMR to analyze.

4 A Low-Fidelity Virtual Simulation Model for Medical Students

Sarah Dunn, MD; Michael Anana, MD

Learning Objectives: Our objectives were to create and introduce a virtual simulation curriculum that could easily be replicated using limited resources. We also aimed to assess medical students’ perception of sim scenarios during the COVID-19 pandemic.

Abstract:

Background: The Coronavirus Disease 19 (COVID-19) pandemic brought significant disruption to medical student training in our emergency medicine clerkship. Students at our institution experienced limited in-person clinical rotations and transitioned to all-virtual didactics. In-person simulation training (sim) was one of these didactic sessions that had to be completely reimaged. In doing this, we wanted to maintain prior objectives of sim as well as use on-hand resources and create a low-fidelity model.

Educational Objectives: Our objectives were to create and introduce a virtual sim curriculum that could easily be replicated using limited resources. We also aimed to assess medical students’ perception of sim scenarios during the COVID-19 pandemic.

Curricular Design: Students participated via a web conferencing application (WebEx), with one faculty member facilitating and another in the sim room with a low-fidelity sim mannikin. A laptop with webcam was used to show the sim

room, including a monitor streaming vital signs via a low-cost application. Cases were developed from existing free open-access curriculum, with an emphasis on quick recognition of the sick patient and need to stabilize the patient as well as communicate with consultants. The curriculum was assessed via an optional, anonymous survey of students.

Impact: Our pilot sim curriculum is designed to be easily adaptable for UME and GME sites without many resources; it requires little prep time for faculty and free or low-cost applications and materials. Student response to the pilot virtual simulation was overwhelmingly positive (Table 1), with 67 of 93 (72%) of students responding to an anonymous optional survey. Additionally, 87% of respondents felt the virtual setting was as effective or more effective compared to in-person simulation. Future iterations will include improved audiovisual effects and further development of student roles.

Table 1. Pilot survey data.

Survey Item <i>(1- Strongly Disagree, 3-Neutral, 5 - Strongly Agree)</i>	Responding Strongly Agree or Agree	
	Number	Percent
The teaching methods used in this simulation were helpful and effective.	65/67	98%
I enjoyed how my instructor taught simulation.	67/67	100%
The way my instructor taught simulation was suitable to the way I learn.	59/67	89%
My instructor was prepared to facilitate this activity.	67/67	100%
My instructor encouraged participation and collaboration.	65/67	97%
My instructor was enthusiastic about this activity.	65/67	97%
The audiovisual equipment operated smoothly.	52/67	79%
The objectives of the simulation exercise were clearly defined.	63/67	94%
The sim session was well organized.	65/67	97%
The simulation session was appropriate for my level of training.	66/67	99%
The simulation session added value to the learning experience.	65/67	97%

5 A Near-Peer Taught Electrocardiogram Curriculum for New Emergency Medicine Residents

Duncan Grossman, DO; Kestrel Reopelle, MD; Eric Quinn, MD; David Shang, MD; Eric Lee, MD; Sally Bogoch, MD; Arlene Chung, MD

Learning Objectives: After participating, learners will be have improved recognition of significant EKG patterns

related to EM, and have increased confidence in EKG interpretation for new EM residents.

Abstract:

Introduction: The ability to rapidly and accurately interpret electrocardiograms (EKGs) in the emergency department is an essential skill required by emergency physicians. A near-peer taught EKG curriculum is a viable option for a comfortable and efficient learning environment for new emergency medicine (EM) residents.

Educational Objectives: After participating, learners will have improved recognition of significant EKG patterns related to EM, and have increased confidence in EKG interpretation for new EM residents.

Curricular Design: The curriculum was designed based on Kern’s six step approach. While all emergency medicine physicians must be adept at interpreting EKGs, an informal needs assessment specific to Maimonides residency showed consistent discomfort with this skill among graduates. A near-peer approach was chosen to foster an open, communicative, non-threatening environment for learners. There were multiple interactive web-based lectures that covered a wide variety of topics. The target audience was new EM residents and the course was taught by second and third year EM residents. A pre- and post-quiz was administered.

Impact/Effectiveness: Reaction level data showed improvement in comfort with EKG interpretation and self-reported knowledge of EKGs among residents who took the course. The near-peer approach may have allowed for a more comfortable environment for new residents to learn material. The course was easily implemented and will be held again next year.

6 A Novel Wilderness Medicine Curriculum for Emergency Medicine Residents

Elizabeth Hamilton, MD, MPH; Sara W Nelson, MD

Learning Objectives: The objective of this curriculum was to teach emergency medicine residents how to assess, treat and transport patients in an austere environment through an interactive, team based didactic competition.

Abstract:

Introduction: Wilderness medicine is an essential component of Emergency Medicine residency education. Traditionally, wilderness medicine is incorporated into residency training through a combination of classroom based lectures and practical demonstrations. Since its inception in the fall of 2000, medical practitioners have been able to participate in regional Medical Wilderness Adventure Races (MedWAR™) to learn and practice wilderness medicine skills in a competitive setting. While MedWAR competitors have reported gaining valuable experience through participation, this model of team-based, competitive

wilderness medicine simulation has never been applied to residency training. With this in mind, we developed the Wilderness Interactive Didactic Experience, or WildRIDE.

Objective: Our educational objective was for residents to attain comfort with assessing and stabilizing patients in the wilderness through an interactive team-based event modeled after a MedWAR™ competition.

Design: Teams of residents rotated through 6 instructor-led simulations to assess, stabilize and evacuate mock “patients” played by medical students. Instructors scored teams on their completion of critical actions and then debriefed the scenario. Teams also rotated through a circuit of self-directed skills stations to practice activities like improvised splinting, litter carries, shelter building, and wound care. Basic knowledge was assessed with multiple choice questions throughout the event.

Effectiveness: After participating in the WildRIDE event, 100% of residents who completed our post-event survey reported increased comfort with performing a patient assessment in the wilderness. All respondents felt the experience was valuable and that they enjoyed the team-based structure. 92% stated they would like to see the WildRIDE event offered in the future. Participants asked that more instruction be available at the skills station, which we will incorporate into our next WildRIDE.

7 A Pediatric Emergency Curriculum for Emergency Medicine Residents

Taylor McCormick; Genie Roosevelt, MD, MPH; Jennie Buchanan, MD; Maria Moreira, MD

Learning Objectives: To design a simulation-based, half-day boot camp for our senior resident class focusing the most anxiety-provoking pediatric emergencies, resuscitation skills, and uncommon procedures as the final component of a comprehensive pediatric emergency curriculum.

Abstract:

Introduction: All emergency medicine (EM) physicians must be skilled in caring for children as the vast majority of pediatric visits occur in community emergency departments. Exposure to critically-ill children during EM residency is limited, making simulation-based training a key component of pediatric emergency medicine education.

Curricular Design: Based on survey responses from senior residents and recent graduates on knowledge gaps in pediatric emergency care, an advanced pediatric emergency boot camp curriculum was developed and refined by expert pediatric emergency medicine educators. This course is an essential component of a comprehensive pediatric emergency curriculum which includes a basic pediatric resuscitation boot camp intern year, integrated core pediatric emergency didactics, quarterly pediatric emergency morbidity and mortality conference, a Neonatal Resuscitation Program course specifically for third