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RISE-EM: Resident Instruction in Social Emergency Medicine, a Novel Curriculum

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45 Resuscitation Practice, Testing, and Remediation for Junior EM Residents

Sonika Raj, MD; Jessica Hernandez, MD; Joseph Martinez, MD; Kavita Joshi, MD; Chrissy Chan, MD; Carlos Trigo, MD; Daniel Testa, MD; Zachary Aust, MD

Learning Objectives: The curriculum's objective was to put each resident through complex resuscitation simulations to assess medical knowledge, leadership skills, and readiness for the EM critical care environment.

Abstract:

Introduction/Background: Simulation is a vital component of EM resident education. Our PGY2 residents inherit the responsibility of leading our critical care/trauma pod. A curriculum was developed in response to this internal requirement.

Educational Objectives: The curriculum's objective was to put each resident through complex resuscitation simulations to assess medical knowledge, leadership skills, and readiness for the EM critical care environment.

Curricular Design: This curriculum consisted of 3 stages: formative, testing, and remediation. Each stage was designed to assess resuscitation competency through cases proctored by EM faculty. In the formative stage, the resident faced 4 cases of cardiac arrest, each due to different etiology. The resident was debriefed after each case. Testing sessions were held after formative sessions were complete. In the testing stage, the resident faced 2 cases (1 patient with undifferentiated shock and 1 with cardiac arrest) but was not told beforehand that there would be a second case. The resident began Case 1, and was interrupted halfway through by a call to Case 2. At the end of Case 2, he/she returned to Case 1. EM faculty scored the resident's performance per the objectives. The resident was debriefed and told if he/she required remediation. 5 residents were required to complete a remediation case consisting of a patient with hypoxic respiratory failure complicated by cardiac arrest. Residents were debriefed post-case in a summative fashion; all 5 passed. All residents then received feedback on their individual areas of weakness and resources to spur further study.

Impact/Effectiveness: The curriculum was administered to 22 residents. It proved to be a high-fidelity method of assessing junior EM resident resuscitation skills and remediating specific areas of weakness. Learners found it helpful to their growth and clinical skills. We plan to continue this for future residents while refining the cases and scoring system.

46 Rethinking the Away Rotation

Ryan Bodkin, MD; Julie Pasternack, MD; Linda Spillane, MD; Kathleen Stephanos, MD; Joseph Pereira, DO; Valerie Lou, DO; Jason Rotoli, MD

Learning Objectives: Through a virtual elective

1. Provide a remote virtual education opportunity for EM bound students during times of disruption
2. Demonstrate our academic mission, program strengths, and introduce a variety of faculty to prospective applicants
3. Recruit high-quality EM bound applicants

Abstract:

Background: Emergency Medicine (EM) applicants and residencies benefit from away rotations by giving applicants exposure to different program leadership, diverse clinical environments, and providing programs face-time with qualified interested applicants. COVID has suspended this practice. Through a virtual elective, we were able to convey our academic mission and cultivate an interest in our program for interview season.

Educational Objectives:

1. Provide a remote virtual education opportunity for EM bound students during times of disrupted clinical exposure
2. Demonstrate our academic mission, program strengths, and introduce a variety of faculty to prospective applicants
3. Recruit high-quality EM bound applicants

Curricular Design: We met the disruption with a virtual 1-week clerkship designed as an away elective for visiting students. The content was developed based on feedback from institutional education experts and a literature review of the implementation of a virtual classroom. Each day consisted of small group case-based didactics, virtual hands-on learning, digital hands-on simulation, and social interaction with program leadership. To encourage active participation and add variety to the virtual format, a "care-package" with materials to perform an at-home splinting lab was mailed to students. In addition, students were encouraged to forage for wound care and splinting materials in their own homes to improvise with during a wilderness medicine session. To foster a sense of community and simulate in-person interpersonal interactions we dedicated 3 hours to meet with the chief residents and Program Director.

Impact: We accepted four students into the elective, all interested, and all applied for an interview. Despite the lack of contact in the clinical setting, this proved to be a worthwhile educational experience for the students and has the potential to be an alternative recruitment tool during an era where social distancing is imperative.

47 RISE-EM: Resident Instruction in Social Emergency Medicine, a Novel Curriculum

Heidi Roche, MD; Brandon Knettel, PhD; Christine Knettel, MD; Justin Myers, DO, MPH, FACEP; Sue Estroff, PhD; Tim Fallon, MD

Learning Objectives: (1) Describe the complexities and importance of the relationship between social determinants of health (SDH) and the emergency system, (2) recognize ways to implement social EM in one's EM practice, (3) identify and appropriately address SDH in the ED while practicing socially competent medicine.

Abstract:

Background: Understanding social determinants of health (SDH) and their intersection with EM, also known as social emergency medicine (SEM), is an important area of EM training. Despite the requirements of milestones disposition (PC7) and systems-based management (SBP2), little training material has been made available to teach this competency. Our goal was to create a curriculum to address these training gaps that could be easily adopted by EM training programs.

Curricular Design: RISE-EM: Resident Instruction in Social Emergency Medicine is a video-based training curriculum that consists of four 20 minute modules and a pre-post multiple choice test. While this offers scheduling flexibility, reflection from the pilot run suggests the course is best received when applied over several weeks with interleaved group discussions. With core objectives from the Social Medicine Reference Toolkit, a team of experts developed EM specific module content with material from the Inventing SEM conference. Using longitudinal cases, a conceptual framework is reinforced and built upon throughout the modules (Figure 1). Recurring “nudges” encourage participants to identify SEM implementation in and out of the ED.

Impact: RISE-EM has been successfully implemented in one conference with 48 faculty, residents, and medical students, receiving a strongly positive reception. Six participants completed pre-and post- assessments of SEM knowledge and self-efficacy in addressing SDH in the ED. Using paired-samples t-tests, we found that SEM knowledge improved by 3.2 points on average out of 19 questions ($t(5)=3.63, p=0.015$), while self-efficacy improved by 4.8 points out of 26 possible ($t(5)=3.24, p=0.023$). We are creating discussion guides and practice cases so this innovation can be more easily implemented by new programs. We see this project as a valuable tool EM residencies can use to address milestones PC7 and SBP2 in their curricula.

48 Safely Securing a Chest Tube Using Cadaveric and Manikin Models

Mohamad Moussa, MD; Mark Bustillo, DO; Joseph Ryno, DO

Learning Objectives:

1. Teach EM residents how to safely and proficiently suture and secure a chest tube in a controlled setting as a precursor to performing the procedure in a high intensity clinical setting.
2. Bring attention to the potential operator risk associated with suturing in a chest tube.

Abstract:

Introduction/Background: Inserting a chest tube is an important life saving procedural skill for emergency medicine residents but there is not enough focus on the suturing and securing portion of the procedure. Rather, much of the focus is on making the initial incision through the chest wall into the intercostal space and wedging the tube into the pleural cavity. We propose that suturing and securing the chest tube is just as critical as the initial steps to avoid operator injury from a needle poke and to ensure the chest tube is securely fastened.

Curricular Design: At our bi-weekly simulation and procedural skills training day, EM residents are divided into groups of 3-4 and rotate through various simulation and skills stations. One day included this chest tube securement station. An experienced EM faculty member and PGY-3 senior EM resident gave a 5-minute introduction of the procedure and then guided the resident learners through a step-by-step approach using a life form manikin and human cadaver. One-on-one training took place of suturing, gauze placement, and connecting to the pleur-evac system with special attention dos and don'ts to avoid self-injury through needle poke and rib fractures.

Impact/Effectiveness: We identified a gap in the training of our EM residents when it came to safely suturing and securing a chest tube. We hear of many cases where a chest tube was placed quickly in a trauma patient and the resident was injured due to a needle poke or a broken rib. As a result, we immediately included this training into our training curriculum to emphasize the importance of effectively securing a chest tube in preparation for the clinical setting. The step by step approach provided necessary time for the EM residents to comprehend and perform the procedure proficiently. This amplified the focus on the final steps of the procedure to intentionally note the importance and risk involved in suturing a chest tube in place.

Module 1 Introduction to Social Emergency Medicine	Module 2 How Humans Change the Definition of Illness	Module 3 Cognitive Framework: Social Factors at the Bedside	Module 4 We Can't Do This Alone: An Approach that is Interdisciplinary and Multi-Sectoral
Objectives <ul style="list-style-type: none"> • Understand the role social determinants of health (SDH) plays in emergency system patients' health • Be able to state why SDH are important to the ED provider • Be able to identify opportunities to address SDH in various scenarios 	Objectives <ul style="list-style-type: none"> • Understand the ability of society to shape medical definitions • Discuss the composition of high-frequency ED users • Use four lenses to help navigate disposition in socially complex patients 	Objectives <ul style="list-style-type: none"> • Discuss and describe how bedside factors impact health equity and health outcomes • Understand challenges of physicians to provide health equity 	Objectives <ul style="list-style-type: none"> • Be able to describe examples of innovative programs and pathways to discharge • Become acquainted with local resources and community programs • Apply this knowledge to patient cases

Figure 1. Breakdown of course modules by individual objectives.