UC Irvine

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utilization grew 38 times from February 2020 to February 2021. Despite this, training in telehealth for residents remains substandard, with experts calling for formal curricula. To our knowledge there is no standardized graduate medical education curriculum for telehealth.

Objective: To assess EM resident enthusiasm for a telehealth curriculum and to develop a series of telehealth training modules for EM resident physicians.

Curricular Design: We distributed a ten question survey to 44 EM residents to gauge their interest in pursuing telehealth education. We developed a series of 30 minute modules focused on different aspects of telehealth delivery targeted to an audience of EM residents. We created four key telehealth learning modules to train EM residents: Historical Socioeconomic Relevance, The Virtual Patient Encounter, The Telehealth Physical Exam, and Documentation Medicolegal Implications.

Impact/Effectiveness: The vast majority of survey respondents feel that telehealth education is probably or definitely important, and would pursue education in telehealth. Future directions include soliciting feedback from residents who complete the curriculum and learning assessment. As telehealth continues its rapid growth beyond a protracted pandemic it is critical that we educate and equip the next generation of emergency physicians to harness the skills to provide emergency telehealth services to their patients.

44 OMG it's an OMI: Utilizing Retrieval Practice to Teach Occlusive MI EKGs

Ivan Zvonar, Allen Lockhart, Laura Welsh

Learning Objectives: Residents will be able to: 1. Recognize challenging territorial distributions of acute STEMIs. 2. Identify classic ischemic EKG syndromes: Wellen's and de Winter's T waves. 3. Apply modified Sgarbossa criteria to identify ischemia in the setting of conduction abnormalities.

Introduction/Background: As some emergency medicine experts advocate for a shift away from STEMI-NSTEMI to that of occlusive MI (OMI) - non-occlusive MI (nOMI), there is a need to enhance residents' education of high risk ischemic EKGs within this new paradigm. We developed an EKG curriculum leveraging retrieval practice to improve EM residents' diagnostic skills for recognition of ischemic STEMI and non-STEMI EKGs that can represent acute MI necessitating emergent catheterization.

Curricular Design: The curriculum was initially implemented over a one week period in July 2020 for PGY-2 EM residents and repeated for the next class in July 2021. The curriculum consisted of three didactic sessions addressing: 1) OMI pathophysiology and STEMI, 2) Differentiation of STEMI

from non-ischemic STE, and 3) OMI patterns not meeting traditional STEMI criteria. Each session was separated by at least 1-2 days. Before the start of each session, a 10 question formative EKG quiz was administered representing topics from the previous session and answers were subsequently reviewed. A baseline EKG quiz was obtained at the beginning of the course and once again after the final session as a summative assessment, and residents were also surveyed about their attitudes and experiences.

Impact/Effectiveness: We provide an easily implementable curriculum to introduce residents to these topics. Following our first two years, satisfaction surveys demonstrate that all residents find the curriculum useful and the majority have increased confidence in approaching these EKG patterns. Although we did not appreciate improvement in pre and post summative assessments, future directions include earlier implementation of this curriculum in our program with further spaced retrieval practice to achieve superior retention and educational effectiveness.

45 Online simulation effectively teaches introductory disaster triage skills to medical students

Kiran Pandit, Ashley Kingon, Raleigh Todman, Melissa Wright, Marc Raymond, Christopher Tedeschi

Learning Objectives: To use online simulation to teach disaster triage skills to medical students.

Background: Practicing disaster triage teaches skills of rapid patient evaluation. Triage simulation (with structured debriefing) results in improved accuracy in pediatric residents and improved confidence in medical students. Screen-based simulation of disaster triage improved triage accuracy in prehospital providers, and virtual reality (VR) simulation improved medical student triage skills. Few studies have evaluated online simulation to teach disaster triage skills to medical students.

Design: In May 2021, 15 final-year medical students engaged with online simulation to practice triaging respiratory disease outbreak patients. Students submitted personal reflections and participated in a faculty-led debrief. In October 2021, 9 additional students participated.

Outcomes: 14/15 students completed an anonymous post-course survey. Students found the exercise "very" or "extremely" helpful for learning, on a 5-point Likert scale, with a mean of 4.4 (SD+/- 0.8). Students rated their pre-exercise competency as "beginner" or "proficient" on a 4-point rubric (mean of 1.5). Most students rated their post-exercise competency as "proficient" (mean 2.8). Average increase in self-reported competency was 1.3 points, yielding a large effect size (Cohen's d). 8/9 October students rated the simulation a 4.6 on a 5-point Likert scale (5 = extremely helpful for learning).

Strengths: This module overcomes resource limitations of live and VR simulation, and can be completed asynchronously anywhere.

Limitations: Participants need internet access. The debrief requires a facilitator skilled in disaster triage and debriefing. Assessment of effectiveness included neither triage accuracy/speed, nor comparability to live simulation/VR.

Feasibility and transferability: This innovation is freely accessible online. Future development will allow learners to select their experience level, for simplified or complex cases. Open source code allows anyone to develop their own adaptation.

46 Use of Virtual Reality for Teaching Procedures

Phillip McCoy, Stephen Miller

Learning Objectives: The objective of this innovation is to provide virtual reality as an alternative method for learners in emergency medicine to build procedural competence. We will also be looking at feasibility of VR for education and participant satisfaction.

As part of a wider virtual reality curriculum, we are developing and assessing the feasibility of using virtual reality as an alternative method for learners to build competence in procedural skills. This innovation is being tested and implemented with medical students rotating through on their 4th year emergency medicine elective. The study's plan is to look at how practicing procedures with virtual reality compares to more traditional hands-on simulation techniques. Medical students were given a lecture on how to do a surgical chest tube. Then, depending on the month, students were either assigned to practice with virtual reality programs or with simulation task trainers. The following week students were assessed on their ability to walk through and perform a surgical chest tube based on clinical skills evaluation that is already used for emergency medicine residents at VCUhealth. The goal of this innovation is to allow for more easily accessible ways to practice procedures through deliberate practice and allow residents to build experience and competence in procedures in emergency medicine. This has the potential to be especially beneficial in high acuity, low frequency procedures.

47 Reducing Electronic Health Record (EHR) Click Fatigue: An Innovative Approach to Common Order Sets

Eric Medrano, Mohamad Ali Cheaito, Mohamad Moussa

Learning Objectives: Our initiative aims to develop an education innovation that contributes to: • Enhancing EHR usability through facilitating the process of placing medical orders. • Decreasing click fatigue while increasing professional satisfaction among emergency medicine residents.

Introduction/Background: Bureaucratic tasks are the leading cause of burnout among emergency medicine physicians. Among those tasks is placing medical orders in the Electronic Health Record (EHR), which is a time-consuming and rigorous process that can lead to click fatigue and increase physician burnout. Therefore, we believe that optimizing the EHR experience for order placement will not only decrease the amount of time spent using the EHR but will also decrease click fatigue and improve overall satisfaction of emergency medicine physicians.

Curricular Design: We designed a PowerPoint educational module for the emergency medicine residents that guides them through the process of creating their own personalized order sets. In this module, we demonstrated the step-by-step process of developing order sets for three of the more common presentations to the ED: chest pain, abdominal pain, and headache. This is a significant, minimal cost method that can be used to facilitate many patient encounters through expediting the placement of workup and management orders. After partaking in the educational module, residents were able to develop their own personalized order sets, which will inevitably reduce the number of clicks.

Impact/Effectiveness: Integration of this module has been successful among the emergency medicine residents and was very well received. The number of clicks saved using the order sets presented in the PowerPoint educational module was eight, six, and fifteen clicks for the chest pain, abdominal pain, and headache order sets, respectively. This educational innovation has high transferability to other institutions that use EHRs. We expect that employing this strategy will decrease the amount of time spent on bureaucratic tasks, decrease click fatigue, and improve the overall wellness of the ED physician. Our long-term plan includes expanding our educational curriculum and utilizing qualitative assessment tools to examine its effectiveness.

48 Value Transformation through Process Mapping- An Idea Generator for Resident led QI Projects

Joel Atwood, Amber Billet

Learning Objectives: Review fundamental principles in high-value care Develop a list of opportunities to optimize value based care in the ED Introduce Value Process Mapping to explore barriers to high value care.

Introduction/Background: Quality Improvement (QI) is a key component of resident education and an ACGME requirement. Despite being on the front lines and witnessing low value care on a regular basis, many residents struggle to complete robust QI projects throughout residency. A key barrier to resident participation in QI projects is inexperience