

chief complaint and the wide variety of techniques available, a model for both practice and experimentation is warranted.

Educational Objectives: The goal of the model was to increase familiarity with the concept of zipper entrapment, while the objectives were to attempt one or more of the various release techniques and to demonstrate successful release while avoiding excessive hand motions.

Curricular Design: As part of a voluntary emergency medicine curriculum, we constructed a model for penile zipper entrapment using the Hasbro game *Operation* and materials easily obtainable and assembled in any ED. Forty-eight learners participated in the exercise. Participation was voluntary, was not graded or shared with the residency director, and all feedback was formative in nature. Prior to the exercise, only 10% had treated the zipper entrapment complaint. After the exercise, almost half of the learners (47%) indicated they felt completely or very comfortable regarding future cases of zipper entrapment.

Impact/Effectiveness: Zipper entrapment is a low frequency, high-anxiety chief complaint to which the majority of emergency medicine residents have not been exposed, even by the end of training. Through the use of a well-known board game and supplies commonly found in the ED, we created a model that could be easily replicated to enable practice of the techniques necessary for zipper entrapment release. The resident physicians who had treated an actual zipper entrapment patient prior to participating in the exercise thought the model was somewhat similar. We therefore submit this inexpensive, simple model as a potential method to practice the hand motions and techniques to release a zipper entrapment. Learners in the ED found it enjoyable and felt it increased their confidence for treating this chief complaint.



17 Assessing the Quality of Resident Verbal Hand-offs – Do You Know What Your Residents Are Communicating?

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Background: Accurate patient hand-offs (HO) are an important safety initiative. This is especially true in emergency medicine (EM), where HO's routinely occur between shifts, between services, and even to a degree when talking to a consultant. An institutionwide structured tool was introduced to improve verbal and written communication between services when providing a patient HO. Programs were asked to evaluate resident competence in performing a HO prior to allowing them to do so independently.

Educational Objectives: Our goal was to assess resident competence in providing a pertinent and accurate HO.

Curricular Design: Residents received information about the new HO tool, elements of a good HO, and the new institutional policy. Several weeks later, EM residents participating in their annual assessment worked in teams to manage a simulated pediatric trauma patient with multiple non-operative injuries. Subsequently, residents individually provided a verbal phone HO to the pediatric intensive care unit. The quality of the HO was evaluated using the framework of the HO tool that includes patient identifiers, active issues, to-dos, potential problems, check-back for understanding, and time for questions. A global evaluation of the resident HO accuracy and efficiency was assessed. Faculty predetermined what information would be critical to share based on the simulated patient encounter.



Impact/Effectiveness: The quality of presentations varied significantly. The majority of residents included most of the components of the HO tool, but all omitted critical information regarding care of the patient. Interns were less likely to identify anticipated problems and issues requiring follow-up. With one exception, everyone encouraged questions. One team that missed key injuries gave the most organized and efficient HO, showing that the HO quality and medical management quality are distinct issues. Further education on using the tool would be necessary to ensure a culture shift in how residents give and receive presentations. Evaluation may require closer observation of HO in the clinical setting, as well as in didactic sessions. Also, re-examination of the tool is important when evaluating the resident's use of it. During our simulation, we noted that the tool itself might not be ideal for the HO of critically ill patients. The HO skill and the tool both require repetitive practice with feedback.

18 Email for Staff Education: The Good, the Bad, the Ugly

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Background: Mass casualty incidents (MCI) are part of our reality. The response plans that emergency departments (ED) prepare frequently change and are infrequently practiced, yet must be enacted quickly. Education must happen despite heavy cognitive load, limited budget, and even more limited attention span. E-mail is not optimal, but it's what we have.

Educational Objectives: We developed a discipline-specific, spaced learning, e-mail curriculum to teach staff our department's MCI plans. As part of a prospective observational crossover trial, each staff member received a weekly short or long e-mail from a dedicated project-specific e-mail account. Each e-mail covered a small portion of the MCI plans. We hypothesized shorter e-mails would be preferred, leading to improved retention.

Curricular Design: Brief overviews of portions of the MCI plan were tailored to various disciplines (physicians, nurses, coordinators and ED technicians). Short (<250 words) and long e-mails (>500 words) covering the same topic were sent using marketing software (MailChimp, Atlanta, GA) to track the rates at which e-mails were opened. Each staff member received one e-mail per week for a total of eight months. Pre-, mid-, and post-implementation quizzes occurred to quantify retention of material. A post-study survey collected impressions from recipients.

Impact/Effectiveness: Weekly e-mails were sent to 442 employees. Open rates were uninterpretable. Overall, scores minimally changed across all groups from pre-test (50.6%

correct) to mid-test (53.8% correct) to post-test (52.5% correct). Recipients of short e-mails had greater improvement in scores than recipients of longer e-mails. A survey was sent to all staff. Respondents generally felt more prepared than in the prior year. There was a preference in length of e-mail, with 66% of staff preferring shorter e-mails. Many staff reported even shorter e-mails would be more efficient. While the test scores failed to impress, we learned many lessons about using e-mail to educate: 1) Marketing software is inaccurate and makes useful e-mail look like spam; 2) e-mail not from a known person is less trusted; 3) bullet points are helpful; 4) shorter is better; and 5) conversational style, humor and pictures are very useful. Overall, staff confidence in our ED MCI plans improved through spaced learning via weekly e-mails to staff members, despite relatively similar test scores.

19 Rosh Review in the Clerkship: Utilization of a Test-Enhanced Learning Resource and Performance on the National Board of Medical Examiners Emergency Medicine Advanced Clinical Exam

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Background: Students who perform well on emergency medicine (EM) clerkships and end-of-clerkship exams are more likely to successfully match into an EM residency. The EM advanced clinical examination (ACE) was released by the National Board of Medical Examiners (NBME) in 2013, and has been used across the nation to rate clerkship performance and future potential of both EM-bound and non-EM-bound medical students since that time. The most commonly used resource for the U.S. Medical Licensing Exam step and ACE exams do not include a subset of EM questions. Rosh Review is an online question bank originally designed for residents and board preparation that uses test-enhanced learning with high-fidelity images and customized testing modalities to prepare medical students to take the EM ACE examination. We predict that use of this resource will positively impact student outcomes on the ACE examination.

Educational Objectives: To determine the usage and effect of implementing an online question bank on performance on the NBME ACE exam.

Curricular Design: Rosh Review was made available to all students in a required fourth-year, four-week EM clerkship from May–November 2018. Students were given access to over 600 EM Rosh Review questions. They received credit toward their grade based on the number of questions completed. Student performance was tracked on the software's dashboard.

Impact/Effectiveness: Forty-one students completed a total of 17,381 questions. The median number of questions completed was 375 with an interquartile range of 265-612.