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The Zipperator! A Novel Model to Simulate Penile Zipper Entrapment

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14 Small-Scale, High-Fidelity Simulation for Mass Casualty Incident Readiness

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Background: For most emergency medicine (EM) processes and skills, we use repetition and analysis of past approaches to build competency and efficiency. With mass casualty incidents (MCI), occurrence is unpredictable and recurrence in a single location is rare. This leaves emergency departments (ED) with the need for high-level function during a MCI without past experience to shape that response. We developed a realistic, small-scale MCI simulation to bridge this gap.

Educational Objectives: We sought to simulate the injuries and pace of incoming patients that could be expected in a mass shooting as a way to 1) strengthen provider competency in managing a rapid influx of high-acuity patients; 2) promote the sharing of ideas for novel approaches to MCI care at the patient level; and 3) hone the MCI logistical strategy for our Level I trauma center.

Curricular Design: After a brief introduction to treatment priorities in mass penetrating trauma, small groups of residents participated in six 10-minute simulation sessions, each with a care team consisting of two nurses and two ED technicians, plus a new second-year resident team lead for each round. Remaining residents observed in the room. Each session had three high-fidelity mannequin patients presenting in rapid succession (every three minutes) with penetrating trauma. Each patient was critically ill with multiple gunshot wounds, requiring rapid interventions and decisions about need for operative care or futility. Focused debriefing followed, allowing rapid turnaround for repeated simulations. The entire simulation took three hours, during our regularly scheduled EM small-group didactic time.

Impact/Effectiveness: Feedback from the simulation was very positive, with multiple requests to repeat it. Nursing staff involved made changes to documentation plans and equipment-distribution strategies. Residents offered novel ideas such as giving an intramuscular dose of ketamine to facilitate intubation and finger thoracotomy, as opposed to giving etomidate and succinylcholine, which necessitate a rigid timeline in a situation where the provider is frequently being pulled away from one task to another critical patient. We narrowed the list of supplies needed to bare necessities, developed a list of medications for stockpiling, and created a reference poster of altered MCI priorities to be rapidly placed in prominent places.

15 Doctors on the Hill: Initiation and Integration of Policy Advocacy in Emergency Medicine Residency Training

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Background: Medicine and policy are intertwined, given that regulations at a state and federal level influence a physician's daily practice. Effective communication with legislators is an important part of physician engagement and essential to balanced policy creation. Currently, eight states have state-level advocacy events, but there are few curricula on state advocacy.

Educational Objectives: The goals of this program were that, upon completion, residents, fellows, and junior faculty would understand 1) how to create a relationship with legislators; 2) how laws are created, debated, and approved in the state of Rhode Island; 3) how to craft testimony on legislative issues; and 4) how to testify on a law or issue within the Rhode Island legislature.

Curricular Design: Senior emergency medicine faculty with experience in state and federal advocacy designed the curriculum in three parts. Part one was a lecture on 1) basics of state and federal government legislature organization; 2) relationship building with legislators; 3) advocacy modalities to influence policy (within and outside of the state legislature); and 4) past successes and challenges in state advocacy. Part two was training on advocacy for a specific issue to prepare residents to advocate for this issue within the state legislature. Part three was a trip to the statehouse that included a tour, meeting with legislators, and observing a public hearing on pending legislation. State medical society resources common to all states were used in the implementation of this curriculum.

Impact/Effectiveness: Eight residents were involved in the initial training with all participants indicating desire for future participation. The ACGME Common Program Requirement for system-based practice and communication are addressed in this curriculum. Year two will include improved alignment with residency curriculum, improved topic organization for increased impact upon policy during bill creation, and expansion of the curriculum to residents throughout specialties.

16 The Zipperator! A Novel Model to Simulate Penile Zipper Entrapment

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Background: Zipper entrapment injuries may be uncommon, representing an incidence of less than 0.5% of pediatric emergency department (ED) visits; nevertheless, they are one of the leading causes of accidental genital injury presenting to the ED in the U.S. While publications on entrapment are relatively sparse, various methods have been proposed for releasing the entrapped tissue including mineral oil lubrication, mechanical zipper release techniques, and in extreme cases surgery. Given the low frequency of the

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.