

**EXTENDING THE BOUNDARIES OF  
EMERGENCY MEDICAL SIMULATION  
EDUCATION INTO HIGH-RISK, LOW  
PROBABILITY EVENTS**

*To the editor:* We applaud the recent article by Murray et al. concerning the clinical importance of simulation emergency medical education.<sup>1</sup> Their 18-month, follow-up survey demonstrates that simulation education in emergency medicine not only fosters competency in technical skills, but also in clinical skills. Additionally, simulation education can also be used to teach about low-probability, high-impact events that are within the domain of our specialty.

Our simulation program within the Department of Emergency Medicine educates a multidisciplinary group of students who are currently in their clinical years. Most of them are medical and physician assistant students who are engaged in a 1- to 2-month emergency medicine clerkship program. Frequently, they are joined by pharmacology and nursing students attended by their own faculty.

Apart from skills training, the students receive interdisciplinary education on emergency medicine case scenarios using hybrid and high-fidelity simulators. However, there are two specific areas pertinent to emergency medicine that have been added to our curriculum

simply because they are rare, rarely taught, and can be life-saving:

- 1) Emergency evacuation. Emergency evacuations of hospitals have occurred during the Fort McMurray wildfire, at St. John's Regional Medical Center following the Joplin, Missouri tornado and Hurricane Sandy, to name but a few. Our students, at regular intervals, have been taught that reliance on backboards and intricate evacuation equipment may be unavailable or difficult to use. Exercising the Iserson method (bed sheets and mattresses), we are teaching our students to take ownership of this type of rare event, assume crisis leadership responsibilities, and safely rescue the immobile patient quickly and safely.<sup>2</sup>
- 2) Active shooter. Hospitals are "soft targets" for both targeted and terrorist-driven violence. Yet, it is rare in U.S.-health care education to explore with students and clinicians the inherent conflict that they may face when shots are fired as they are caring for their patient. With our voluntary and safe "Speed, Impede, Make 'em Bleed" program, we discuss "run," "hide," and "fight" options in the clinical setting. Then we drill an event using one floor of our simulation centre as an

emergency department. We observe students' reactions. Finally, we debrief discussing ethics, logistics, barricade and weapon options, and, most important, recovery.<sup>3</sup>

The scientific data gathered by Murray et al., coupled with our own debriefings with the students and uniformly positive response serves, validate continuing simulation education and challenge us to explore new areas where simulation may be critical to the advancement of emergency medicine goals and objectives.

**Paul P. Rega, MD  
Brian N. Fink, PhD**

School of Population Health,  
University of Toledo, Ohio

**REFERENCES**

1. Murray H, Savage T, Rang L, Messenger D. Teaching diagnostic reasoning: using simulation and mixed practice to build competence. *CJEM* 2017;epub, doi:[10.1017/cem.2017.357](https://doi.org/10.1017/cem.2017.357).
2. Iserson KV. Vertical hospital evacuations: a new method. *South Med J* 2013;106(1):37-42, doi:[10.1097/SMJ.0b013e31827caef4](https://doi.org/10.1097/SMJ.0b013e31827caef4).
3. Rega P, Fink B, Bush K, Sanow K, Sattler K. S-I-M. Training students for an active shooter incident. *Emerg Med News* 2016;38(4):26-7, doi:[10.1097/01.EEM.0000482482.58826.fd](https://doi.org/10.1097/01.EEM.0000482482.58826.fd).