



# The Reach of Patient Simulation: Is There No Boundary?

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In this issue of the *Journal of Clinical Anesthesia*, Kyle *et al.*<sup>1</sup> and Via *et al.*<sup>2</sup> report innovative uses and ideas for simulation. Both articles illustrate the richness of investigative study that can be achieved by using the resources we each have around us. The goal of this editorial is not to restate the findings of the investigators, but to highlight some of the more subtler points and implications of these two studies. Reports of patient simulation and the investigations using it are growing in the literature, such as the November 2003 supplement to Volume 37 of *Medical Education* being primarily devoted to patient simulation. The similarity between the two studies is they both demonstrated the feasibility of using their patient simulators in an integrated manner with other technologies and modalities.

Kyle *et al.*<sup>1</sup> demonstrated in their article on the combined simulation modalities to teach responses to the weapons of mass destruction, the potential of several key simulation points. The first point is the practicality and effectiveness of using patient simulation for a continuous scenario. In other words, a standardized patient can present with symptoms to a health professional, be triaged, diagnosed, and transported to a simulated treatment area, have his simulated body treated, and then be returned for follow-up care without missing a step. The second point is the successful integration with other simulation modalities to act as a larger, coordinated simulation. The potential for providing fully simulated health care settings, teaching multiple students and multiple types of students different material simultaneously, is very exciting. It almost creates a total paradigm shift in the way we provide medical education now. The cost effectiveness of such an approach hopefully will be studied soon. The third point is the creative thinking which simulation allows to occur. There was evidence that students provided some creative answers to the problems, so that the simulation not only provided for their education, but increased the knowledge capital of the organization as a whole. Such results should be expected and acknowledged when bringing two established modalities together.

So far, there has not been much written about patient simulation with regard to bioterrorism. Berkenstadt *et al.*<sup>3</sup> found that using full protective gear against bioterrorism increased intubation time on simulated patients by experienced anesthesiologists and decreased their communication ability during Crisis Management. Yet the ability to provide mass education to physicians and other health care professionals on rare diseases such as anthrax, is paramount to our ability to diagnose and treat the population effectively.<sup>4</sup> Simulations have been advocated for such education. Patient simulators have been used to teach

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bioterrorism, such as at the University of Louisville, where we taught sarin toxicity as a continuing medical education class to community emergency room and family practice physicians.

The article by Via *et al.*<sup>2</sup> also makes some points that need to be highlighted. Distance learning is becoming a reality to health care education, as it has to most other university graduate-level classes.<sup>5-7</sup> The authors point out some real concerns about the ability of distance learning to provide knowledge transfer and retention and the effect of losing hands-on experience on the appropriate outcome performance measures of the learners. Another point that their study illustrates is that maybe we don't need an elephant-sized, hands-on simulator to do basic physiology education. The follow-up of their study will hopefully discover the benefit of simulation in a distance learning environment. Maybe they will be able to make a comparison to the places where hands-on patient simulation is being used to teach basic physiology to medical students, such as at the University of Florida, Wake Forest University, and the National University in Singapore.<sup>8-10</sup>

I am just as zealous as most of my simulating colleagues in advocating the use of high-fidelity patient simulators to teach the entire gambit of medical education from the complex cardiac procedures down to the common cold. One expectation is that as patient simulation grows in popularity and utility, we will discover the appropriate areas for the different types of patient simulators to optimize their effect on medical education. My expectation is there will be no limit or boundary to the reach of patient simulation in providing medical education. Patient simulation will open new avenues of educating and change the paradigms in which we now function.

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