

ACS 2026 Surgeons and Engineers: A Dialogue on Surgical Simulation

P-E-06

Research In-Progress

Microsimulation Improves Stop The Bleed Training Among First-Year Medical Students

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Introduction: The American College of Surgeons (ACS) Stop The Bleed (STB) program has been proven to be an effective tool for teaching hemorrhage control. Previous studies have looked at teaching the course in person to medical students with success (J. Fridling et al., Am. J. Disaster Med. 2024). However, expanding the training beyond medical professionals to the broader community requires the development of more accessible tools that facilitate self-directed learning. This study compares the effectiveness of a proprietary online STB microsimulation, developed with approval from ACS, against an in-person course in a medical student cohort.

Methods: This is a single-institution prospective study. An online microsimulation (eTrainETC, Sarasota, FL) has been developed covering the information discussed in the standard ACS STB PowerPoint, along with three video scenarios that test users' knowledge. Half of a first-year medical school class (130 students) will take the traditional STB course, while the other half will take the online microsimulation. Knowledge and skills will be assessed in a pre-session standardized hands-on scenario before a skills demonstration session. Time to decision-making and reaction time during microsimulation scenarios will be collected to track engagement and knowledge acquisition.

Preliminary Results: We hypothesize that students who receive microsimulation training will demonstrate a higher degree of knowledge and preparedness in the live session compared to those who attend an instructor-led PowerPoint session. The level of readiness for the microsimulation will be correlated with the time taken to complete the module, as well as thoughtfulness in question engagement, tracked through online performance data.

Next Steps: The microsimulation has currently been developed. The next step is to conduct the study with the new medical student cohort, who will take the STB course during their cardiology block, followed by data analysis and reporting.