



The Society of Thoracic Surgeons  
633 N. St. Clair, Suite 2320  
Chicago, IL 60611  
www.sts.org

# News

## STS Press Release

### Media Contact:

Cassie McNulty

312-202-5865

[cmcnulty@sts.org](mailto:cmcnulty@sts.org)

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## Novel Simulation Model Improves Training Experience for Cardiothoracic Surgeons *Simulated bleeding provides instantaneous feedback to residents*

San Diego – A new surgical training model that simulates patient bleeding is providing cardiothoracic surgery residents with “real-life” experience without compromising patient safety, according to an abstract released today at the 51st Annual Meeting of The Society of Thoracic Surgeons.

“The training paradigm in cardiothoracic surgery has changed over the last decade with the institution of the resident work hour restrictions and diminishing educational resources,” said Christina L. Greene, MD, from the University of Southern California (USC) in Los Angeles, who led the study under the mentorship of Craig J. Baker, MD. “Residents are now spending significantly less time in the hospital operating room, so increased importance has been placed on acquisition of surgical skills outside of the OR. Our new pressurized cadaver model is a high-fidelity surgical model that allows trainees to simulate an operative procedure and become proficient in critical surgical techniques.”

Fresh tissue dissection from cadavers is viewed by many surgeons as the “gold standard” for surgical simulation, but the lack of circulating blood volume limits the real-world effects for trainees. For this study, Dr. Greene and colleagues evaluated the use of a unique pressurizing system designed by USC.

“This training is performed in a controlled environment outside of the time pressures of the operating room and without consequence to the patient,” said Dr. Greene. “We believe this model can increase patient safety and provide better learning environments for residents. The tissue is much closer to what a resident will encounter in the OR, and the ability to simulate surgical bleeding provides instantaneous feedback to the learner.”

### Key Points

- Surgical training on a pressurized cadaver model can enhance residents’ skills using a simulated, real-life setting and without compromising patient safety.
- Fresh tissue dissection is viewed by many surgeons as the “gold standard” for surgical simulation, but the lack of circulating blood limits the real-world effects for trainees.
- Simulation works as an alternative to direct patient care and is becoming one of the most important ways that surgical trainees are taught and evaluated.

The researchers pressurized cadavers using red or blue liquid made by dying tap water with food coloring. This perfusate (a fluid that flows through an organ or tissue) is then pumped into the arteries and veins of the cadaver to create pressure and flow through the vessels. A line attached to a centrifugal pump is used to maintain the desired arterial pressure.

“Simulation is an amazing alternative to direct patient care and is becoming one of the most important ways that surgical trainees are taught and evaluated,” said Moishe Liberman, MD, PhD, from Centre Hospitalier Universitaire de Montréal in Canada, who was not affiliated with the study. “The pressurized cadaver model developed by Greene and colleagues for cardiac surgery education is a step in the right direction and provides a near real-life situation for the training and evaluation of cardiac surgery residents. This will hopefully be the first step in increased high-fidelity models for education in cardiothoracic surgery.”

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For a copy of the abstract contact Cassie McNulty at 312-202-5865 or [cmcnulty@sts.org](mailto:cmcnulty@sts.org).

Founded in 1964, The Society of Thoracic Surgeons is a not-for-profit organization representing more than 6,900 cardiothoracic surgeons, researchers, and allied health care professionals worldwide who are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung, and esophagus, as well as other surgical procedures within the chest. The Society’s mission is to enhance the ability of cardiothoracic surgeons to provide the highest quality patient care through education, research, and advocacy.