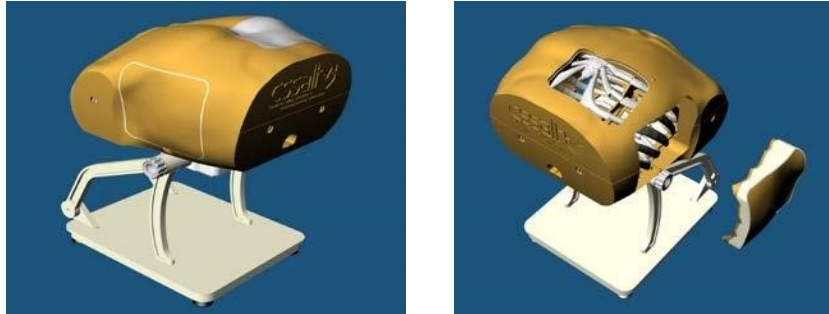


## Mixed Simulator of Chest Tube Insertion Fact Sheet

University of Florida Center for Safety, Simulation & Advanced Learning Technologies



This robust, turnkey mixed reality simulator simulates part of an anatomically correct thorax for practicing, learning, teaching and debriefing a chest tube thoracostomy procedure. Designed for austere environments, it does not require wireless or internet access or wet fluids; accepts 110/220V, 50/60Hz. It can be unpacked/set up/be operational in 5-7 minutes by an unfamiliar person. The portable simulator ships inside a military-spec padded case with inbuilt wheels and telescoping pull-handle that meets airline checked luggage size and weight limits (L+W+H=60"); weight < 50 lbs.

<https://simulation.health.ufl.edu/technology-development/augmented-reality-mixed-simulation/chest-tube-simulator/>

### **Procedures:**

- Chest Tube Thoracostomy
- Designed for future addition of pericardiocentesis

### **Components:**

- 3D-printed physical thorax including ribs and pleural space
- Virtual model of the anatomy of the heart, lungs, liver, and diaphragm
- Tracked instruments: chest tube, Kelly clamp, finger tracker, and virtual camera controller
- Common SMMARTS modular stand with interoperable instruments for use with other modular anatomies - Automated checklist algorithm and replay system

### **Technology:**

- Adheres to SMMARTS (System of Modular Mixed and Augmented Reality Tracking Simulators) rapid simulator development platform (modular stand and SDK) specs
- Quick-release placement and indexing of SMMARTS-compliant anatomies to SMMARTS platform - Precise submillimeter tracking of all tracked tools
- Skin-like replaceable inserts with muscle tissue can be rejuvenated in-situ for indefinite re-use

### **Features:**

- Adjustable view modes for realism and AARs (after action review)
- Cognitive aids for chest tube placement
- Tactile feedback of ribs and pleura
- Debriefing with replay of past procedures
- Large left and right chest tube insertion zones
- Capable of several tube placements each side before rejuvenation is necessary

Mixed Simulator of Chest Tube Insertion Fact Sheet; February 17, 2021 Contact: [slamptang@anest.ufl.edu](mailto:slamptang@anest.ufl.edu)

US Pat: 9626805, Other Patents Pending