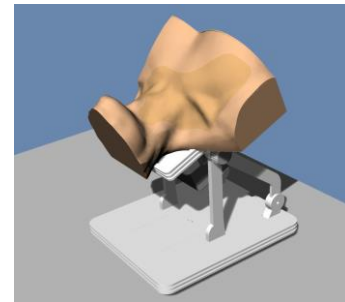
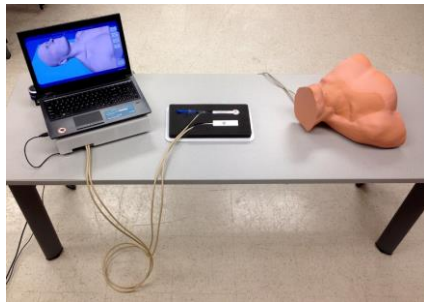


Mixed Reality Simulator of Central Venous Access Fact Sheet

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



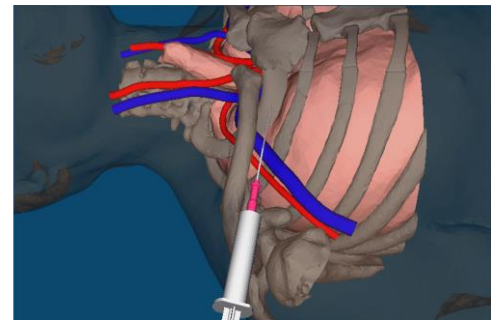
This turnkey, mixed reality simulator is for practicing, learning, teaching and debriefing central venous access by the internal jugular, infraclavicular, supraclavicular and axillary approaches with and without ultrasound guidance. Designed for austere environments, it does not require wireless or internet access or wet fluids; accepts 110/220V, 50—60Hz. It can be unpacked and set up by a person unfamiliar with it and be operational in 5-7 minutes. The portable simulator fits inside a military-spec padded case with inbuilt wheels and telescoping pull-handle that meets airline checked luggage size limits (L+W+H=60") and weighs less than 70 lbs. See video: <http://simulation.health.ufl.edu/research/augmentmixedsim.php> and <https://www.youtube.com/watch?v=0ITIFbiwRs>

Internal Jugular (IJ) Vein Access
Infraclavicular (aka Subclavian) Vein Access
Supraclavicular Vein Access
Axillary Vein Access

*Out-of-Plane/In-Plane/Oblique US-Guided, Landmark
Out-of-Plane/In-Plane US-Guided, Landmark
Out-of-Plane/In-Plane US-Guided, Landmark
Out-of-Plane/In-Plane US-Guided*

Components:

- CT Scan-based 3D printed physical mannequin
- Virtual model of the anatomy of the neck and upper chest
- Tracked interoperable instruments: needle, ultrasound probe, virtual camera
- Common SMARTS modular stand for use with other modular anatomies
- Automated scoring and replay system
- Instructional materials teach how to perform procedures on the simulator



Technology:

- Adheres to SMARTS (System of Modular Augmented Reality Tracking Simulators) rapid sim. development platform specs
- Quick-release placement and indexing of SMARTS-compliant anatomies to SMARTS platform
- Anatomically correct, based on medical imaging scans of a real human
- Precise sub-millimeter tracking of all events
- High-durability, skin-like replaceable skin patches

Features:

- Adjustable difficulty levels (Easy/Medium/Hard)
- Adjustable view modes for realism and AARs
- Ultrasound probe with depth markers
- Anisotropy simulation for both needle and lung
- Vein compression
- Cognitive aids for probe and needle orientation
- Tactile feedback of bone and vein access
- Debriefing with instant replay of past procedure