Ventriculostomy Simulator

In a collaborative effort, the Department of Neurosurgery University of Florida and the Center for Safety, Simulation & Advanced Learning Technologies created a novel “mixed” physical and virtual simulator to mimic the ventriculostomy procedure.

The simulator contains all the physical components encountered for the procedure with superimposed 3-D virtual elements for the neuroanatomical structures.

They tested the simulator in over two hundred sixty residents.

An algorithm combining time and accuracy was used to grade performance. Voluntary post performance surveys were used to evaluate the experience.

Results demonstrate that more experienced residents have statistically significant better scores and completed the procedure in less time than inexperienced residents. Survey results revealed that most residents agreed that practice on the simulator would help with future ventriculostomies.

This mixed reality simulator provides a real life experience, and will be an instrumental tool in training the next generation of neurosurgeons. They implemented a standard where incoming residents must prove efficiency and skill on the simulator prior to their first interaction with a patient [1)].

1)
Hooten KG, Lister JR, Lombard G, Lizdas DE, Lampotang S, Rajon DA, Bova F, Murad GJ. Mixed Reality Ventriculostomy Simulation: Experience in Neurosurgical Residency. Neurosurgery. 2014 Jul 18. [Epub ahead of print] PubMed PMID: 25050577.