MERI on Vanguard of New Training Technology

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TOM WILEMON | The Daily News

Neurosurgeons began working with a technologically advanced simulator that provides sense of touch along with three-dimensional monitors as soon as it arrived at the Medical Education & Research Institute.

The Memphis center is a partner with manufacturer ImmersiveTouch for improving the Sensimmer technology and broadening it applications. At MERI, doctors can determine how closely the technology mimics working with human tissue.

The technology was invented in 2005, and only a handful of teaching institutions have one of the simulators.

“MERI is getting in on the ground floor here,” said Dr. Jeffrey M. Sorenson of Semmes Murphey Neurologic & Spine Institute.

MERI paid $100,000 for the Sensimmer, which usually sells for between $200,000 and $250,000. The institute got a better deal on the technology because of a research partnership.

The simulator arrived Wednesday and was already in use Thursday. By Friday, two teams of neurosurgeons were comparing the simulator to working with actual donor cadavers.

P. Pat Banerjee, the co-inventor of the technology and the president of ImmersiveTouch, experienced the tactile differences of working on a donor cadaver for the first time.

“I’ve been working on this module for the past three years and I never got a chance,” said Banerjee, who is an engineer.

Cristian J. Luciano, vice president of product development for ImmersiveTouch is the other co-inventor. He is also the main developer of the simulation modules acquired by MERI.

One of the goals of MERI is to bridge the knowledge and expertise of engineers who invent new medical devices and technologies with the surgeons who actually use them.

The only other teaching institution to have the technology besides MERI are universities in Illinois, Ohio and Washington. A couple of medical device companies, including Medtronic Inc., whose Spinal and Biologics Business is based in Memphis, also use the technology, Banerjee said.

Longer term, the technology could have more clinical applications.

“These types of tools are going to allow us to create a three-dimensional model of the patient’s anatomy and their particular problem,” Sorenson said. “You can visualize the surgery. You can practice the surgery before you do it on a patient. The idea is that when you do the surgery you will have rehearsed it and you will do a better job.”

The simulators could also be used to assess the competency of surgeons.

“When this is fully evolved, you will actually be able to sit down and test the surgeon,” Sorenson said.

Banerjee said the simulator can also be used for other types of medical procedures, including the insertion of central lines, orthopedic applications and liver biopsies. After he invented the technology, he began working on application models.

The partnership with MERI is a multiyear one.

Other physicians leading the research effort at MERI include Dr. Jon Robertson, MERI Medical Director Dr. Kevin T. Foley and Dr. Madison Michael.