Virtual Reality System Helps Surgeons Train

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A virtual-reality (VR) training simulator is helping surgeons practice on the daVinci surgical system, a sophisticated robotic platform that enables complex surgery using a minimally invasive approach.

The dV-Trainer training simulator is designed to teach basic robotic skills, such as instrument manipulation, camera control, clutching, and suturing. Key components of the dV-Trainer are a compact hardware platform that closely reproduces the look and feel of the daVinci surgeon's console, and simulation software based on proprietary VR modeling technology. Through the trainer, surgeons can independently practice important skills that once required cadavers, or live patients. The simulator also provides surgeons with objective feedback on performance, while reducing training costs associated with training personnel, operating room costs, and training aids.

"The dv-Trainer has face, content, and construct validity as a virtual reality simulator for the da Vinci Surgical System," said Patrick A. Kenney, M.D., of the Lahey Clinic Medical Center (Burlington, MA, USA). "The dv-Trainer may become a valuable training simulator in robotic surgery."

"The Mimic dV-Trainer demonstrated excellent face and content validity as well as reasonable workload parameters," concluded Amanjot Sing Sethi, M.D., and colleagues of the Boston University (MA, USA) department of urology, who evaluated the dV-Trainer in a study to be presented at the society of laparoendoscopic surgeons (SLS) annual meeting in Chicago (IL, USA). "The use of this simulator in resident training may help bridge the gap between the safe acquisition of surgical skills and effective performance during live robot-assisted surgery."

The dV-Trainer is a product of Mimic Technologies (Seattle, WA, USA), a provider of tension-based force feedback devices with real-time finite element (FE) modeling capabilities that enable rapid development of advanced haptic applications and accurate simulation of soft tissue and deformable objects.

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