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NY-made robotic surgery simulator rolled out

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One of the first things Mike Ameroso asked while contemplating robotic surgery for his prostate cancer was how many surgeries his doctors had done with the robot.

He liked the idea of the robot's smaller incision and steady miniature "hands" and the promise of less pain and a quick recovery -- but had his doctors put in time at the controls?

After all, "an aircraft is only as good as the pilot who flies it," concurred Thenkurussi Kesavadas as he and Ameroso took part Thursday in the rollout of a new robotic surgery simulator that lets surgeons practice endlessly in a field that's growing by leaps and bounds.

The "RoSS" simulator closely approximates the touch and feel of the widely used da Vinci robotic surgical system. It was developed through a collaboration between the Roswell Park Cancer Institute and University at Buffalo, where Kesavadas heads the Virtual Reality Lab.

Nearly all prostate surgeries in the United States are now performed by robot, with doctors peering through a viewfinder at a magnified image and moving instruments in the air to control the ones inside the patient. Robotic systems are increasingly being used in everything from weight loss surgery to children's operations.

Ameroso's successful 2007 surgery made him a believer. The 68-year-old Amherst resident came out of it not only cancer-free but pain-free and with only a half-inch incision.

But "it is never about the machine," said Dr. Khurshid Guru, a surgeon and director of the Center for Robotic Surgery at Roswell Park in Buffalo. "What's more important than the machine is the person who manages or operates the machine."

Guru and Kesavadas co-founded a spin-off company, Simulated Surgical Systems LLC, to commercialize the RoSS simulator and have already taken five orders for the roughly \$100,000 machines.

The simulator uses virtual reality technology developed over 10 years at UB to let surgeons practice anything from cutting tissue and sewing incisions to full procedures and versions of procedures where complications arise.

The RoSS joins a handful of other robotic simulators already on the market.

"The message is, how do we train the future surgeons? This technology is going to stay. It's not going anywhere," said Guru, who has performed hundreds of robotic surgeries. He envisions a RoSS in every medical school.

What's so different about robotic-assisted surgery is the surgeon's reliance on sight as his main tool, Guru said. That takes getting used to.

"You have to convert all your senses to visual senses and learn when you push here it's bone and when you push here it's not bone because the way the tissue moves," Guru said. "There is no feel and that is critical."