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Doc gets creative in bid to end men's pain



Janet Adams | Business First

Dr. Errol Singh looked to fiber optics as the technological foundation of his invention that can reduce the pain of urinary catheterizations in men and also lets nurses see inside the urethra on a monitor.

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Business First of Columbus - by [Jeff Bell](#)

Pain from a failed urinary catheterization attempt is enough to make a grown man cry – and a compassionate doctor do something about it.

Dr. Errol Singh, a urologic surgeon at **Riverside Methodist Hospital** in Columbus, has invented a device that allows nurses to see inside the urethra while inserting a catheter. The device, which is in the final leg of its attempt to gain federal approval, is designed to reduce pain and injury from what Singh calls “blind” urinary catheterizations, done by feel.

Blind urinary catheter insertions are standard in medicine, he said, but they are also the cause of intense pain for about 20 percent of men when initial attempts fail. That can lead to infection and even corrective surgery.

“I said, ‘There’s got to be a better way to do this,’ ” said Singh, a **Mayo Clinic**-trained surgeon who has been practicing in Columbus since 1990. “My passion was to not hurt patients and improve the quality of care.”

Call for capital

Singh’s invention uses a tiny fiber-optic bundle that is inserted into the tip of a catheter and transmits images of the urethra onto a monitor. A nurse watches the monitor while guiding the catheter through the urethra into the bladder.

Singh began work on the device about 15 years ago, with the invention receiving patent approvals in 2003 and 2006. Final approval from the **Food and Drug Administration** is expected this summer, he said.

Called the DirectVision system, the device will be sold by PercuVision LLC, a company led by Singh and his brother, Earl, an attorney with more than 20 years of experience in startup companies. Earl Singh said the company will need at least \$6 million to take the product to market. Dr. Singh has invested \$500,000 in the venture, and \$2.3 million has been raised from angel investors and doctors.

PercuVision also has applied for a \$1.4 million loan from Ohio’s Third Frontier technology development program and is seeking an additional \$2 million from private sources, Earl Singh said.

“That gets (the device) into Columbus and Ohio,” he said. “After that, it’s a whole new ball game.”

He estimated it will take an additional \$8 million to \$20 million to sell the product nationally and internationally. If that happens, PercuVision would look for a partner, such as a medical products distributor or consider a public stock offering to raise capital.

The Singhs figure there is a huge market for the device. One in four hospitalized people in the U.S. require urinary catheterizations, they said, with an estimated 24 million hospital procedures a year.

“I’m as excited as when I started medical school,” Errol Singh said. “I look at this as my contribution to medicine and my specialty in improving patient care.”

Supporting doc entrepreneurs

Singh said the device’s potential was demonstrated during a clinical trial on 25 patients at Riverside’s emergency room. All 25 had a successful first pass at catheterization without injury, including five who had narrowings in the urethra. A follow-up study is being planned.

Help with the studies has been provided by the **OhioHealth Research and Innovation Institute**, which supports research efforts by doctors and other clinicians at **OhioHealth Corp.** hospitals such as Riverside.

Working with the institute, Singh has trained nurses in the use of the device at Riverside’s Center for Medical Education.

Singh’s work is a prime example of the research OhioHealth wants to support, said John Niles, the institute’s director. That includes help with everything from assessment of the initial concept through commercialization of the product.

OhioHealth hospitals are fertile ground for such ideas with more 500 clinical trials under way.

“As physicians and practicing surgeons,” Singh said, “we see clinical situations and we think about how we can improve parts of them. If you have an entrepreneurial spirit and a hospital system that supports you, then there’s a great synergy.”

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