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Minnesotan invented life-saving catheter

by [Jane McClure](#) // June 10th, 2011



A medical device which has made life easier for countless people with disabilities and illness has ties to Minnesota. [The Foley catheter](#) was invented by St. Cloud native Frederic Foley.

A Foley catheter is a flexible tube that is passed through the urethra and into the bladder. The tube has two separated lumens. One lumen is open at both ends, and allows urine to drain out into a collection bag. The other lumen has a valve on the outside end and connects to a balloon at the tip. The balloon is inflated with sterile saline when it lies inside the bladder, in order to stop it from slipping out.

Born in St. Cloud in 1891, Foley earned his bachelor's degree at Yale University, and then attended Johns Hopkins School of Medicine. After graduating from medical school in 1918, Foley worked on the East Coast. He was on the junior surgical staff at Boston's Peter Brigham Hospital. He was certified by the American Board of Urology in 1937, although several histories note that there are no records of Foley having formal training in urology. He worked as an urologist in Boston until becoming chief of urology at Ancker Hospital in St. Paul. Ancker later became St. Paul-Ramsey Medical Center and is now Regions Hospital.

Ancker Hospital was located on the Mississippi River bluff in St. Paul's West End neighborhood. The site is now occupied by St. Paul Public Schools administration.

Foley spent most of his career in St. Paul, which is where he worked on his invention. Foley first described the use of a self-retaining balloon catheter in 1929. During the 1930s he worked on development of this design for use as an indwelling urinary catheter, to provide continuous drainage of the bladder, in the 1930s.

His design incorporated an inflatable balloon towards the tip of the tube which could be inflated inside the bladder to retain the catheter without external taping or strapping. Foley presented his invention to the American Urologists Society in 1935. But he had competition for his idea. While he was still developing his catheter, a patent was issued in 1936 to Paul Raiche of the Davol Rubber Company of Providence, RI

In October 1936 Foley applied for and obtained his patent. Raiche appealed a decision by the patent office Board of Appeals to a higher court, and the patent was returned to Raiche. A further request for a hearing made by Foley was refused, and so the patent stayed with Raiche. Still, many histories recognize Foley for his pioneering work. The New Jersey-based C. R. Bard Company began distributing the Foley catheters in 1935. The name has remained with Foley despite the patent fight.

Foley has other inventions and surgical techniques to his credit, including a hydraulic operating table and a rotatable resectoscope. He died of lung cancer in 1966.

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