

Acquisition of robotic technology leads to increased rates of prostate cancer surgery

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A new study conducted by researchers at NYU Langone Medical Center and Yale School of Medicine shows that when hospitals acquire surgical robotic technology, men in that region are more likely to have prostate cancer surgery. The study, "The Association between Diffusion of the Surgical Robot and Radical Prostatectomy Rates", was published this week in the online edition of the journal *Medical Care*.

"The use of the surgical robot to treat prostate cancer is an instructive example of an expensive medical technology becoming rapidly adopted without clear proof of its benefit," said Danil V. Makarov, MD, MHS, lead author and assistant professor, Department of Urology at NYU Langone Medical Center and assistant professor of Health Policy at NYU Wagner School of Public Health. "Policymakers must carefully consider what the added-value is of costly new medical devices, because, once approved, they will most certainly be used."

This is the first study determining the impact of surgical robot acquisition on the rate of surgery to treat prostate cancer and concludes that it increases surgical volume. Surgical robotic technology for the treatment of prostate cancer has been rapidly adopted across the United States since FDA approval in 2001. By 2009, over 85% of men undergoing [prostatectomy](#) had robotic surgery.

This retrospective cohort study surveyed the regional and [hospital](#) rates of [radical prostatectomy](#) surgeries between 2001 and 2005 and looked at whether they were affected by the acquisition of surgical robotic

technology. During this early adoption phase, 36 of 71 regions studied had at least one hospital with a surgical robot and 67 of the 554 hospitals studied had a surgical robot. According to the study, regions and hospitals with robots had higher increases in radical prostatectomy than those without. Additionally, hospitals with surgical robots increased surgery cases an average of 29.1 per year while those without robots experienced a decline in radical prostatectomy by - 4.8 cases.

"Patients should be aware that if they seek care at a hospital with a new piece of surgical technology, they may be more likely to have surgery and should inquire about its risks as well as its benefits," said Dr. Makarov. "Hospitals administrators should also consider that new technology may increase surgical volume, but this increase may not be sufficient to compensate for its cost."

The study author suggests that adoption of new surgical robotic technology either attracted patients from other hospitals without robots to undergo surgery at their hospital or that hospitals may have offered robotic surgery to prostate cancer patients who would have otherwise opted for alternate management approaches like active surveillance and radiation.

"The lessons learned by studying the adoption of the [surgical robot](#) for prostate cancer will be important for policy makers to understand as they consider the purchase and implementation of future medical technology. Especially in the current policy climate where control of healthcare costs is increasingly important," said Dr. Makarov.

While the observed effect of technology acquisition was very strong across a number of regions and hospitals, NYU Langone Medical Center did not itself experience an increase in volume of prostate cancer surgeries after acquiring [robotic technology](#) in 2003. While NYU Langone performed 276 prostatectomies in 2001 the number of cases

actually declined to 223 by 2005, suggesting that the effects of technology acquisition may not be the same at every hospital.

Provided by New York University School of Medicine

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