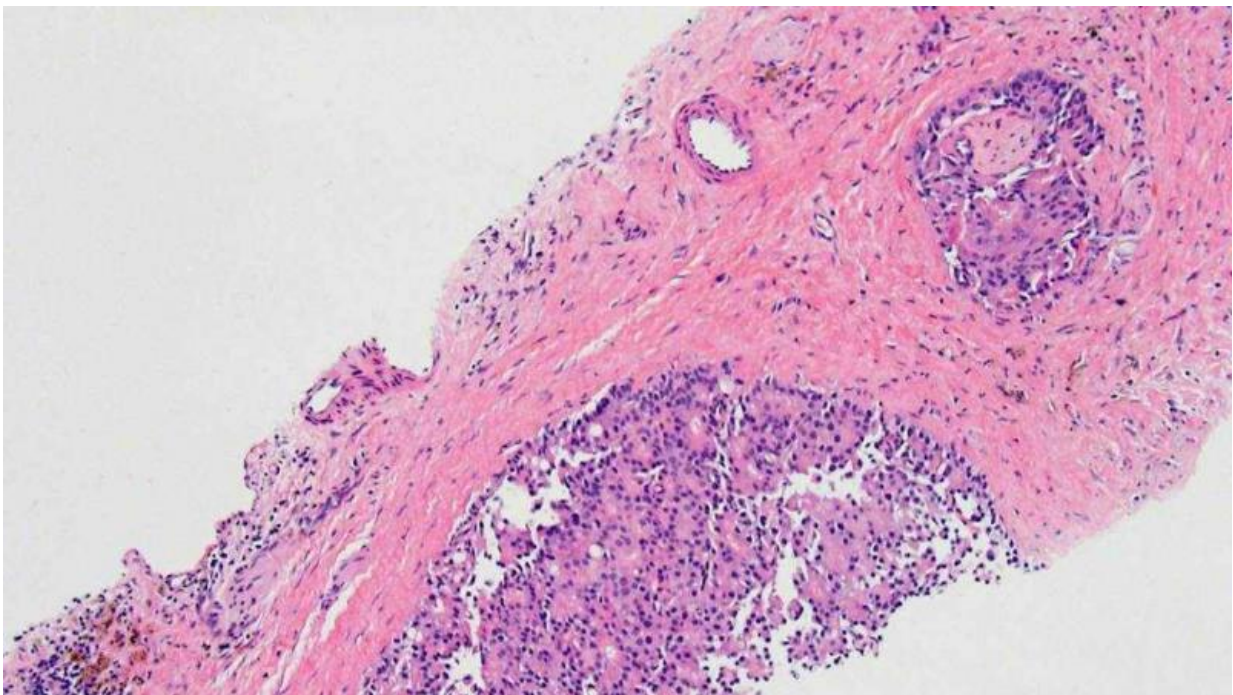


Widely cited prostate-specific antigen screening publications influence biopsy rates and associated complications

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While absolute rates of biopsy and post-biopsy complications have decreased following several benchmark prostate-specific antigen (PSA) screening publications, the relative risk for each patient continues to increase, according to a new study by Mayo Clinic researchers.

The study is the largest to examine the impact of PSA [screening](#) trials and revised PSA screening guidelines on rates of [prostate biopsy](#) and the first to examine their impact on post-biopsy [complications](#). The results, which appear in *European Urology*, suggest a need to reduce the harm associated with biopsy.

"The recent guidelines urge that we are more thoughtful in our approach to PSA screening, and a downstream effect of that seems to be that we biopsy fewer patients, which has reduced the overall number of patients who experience biopsy-related complications," says R. Jeffrey Karnes, M.D., a urologist at Mayo Clinic and senior author of the study. "But, we also found that the potential complications per patient went up, which means that we must continue to take steps to make biopsies as safe as possible."

Prostate biopsy and post-biopsy complications represent important risks of PSA tests, which screen for patients with abnormally high levels of PSA in their blood. Although large randomized trials and updated guidelines have challenged routine PSA screening, it is unclear what kind of an impact these publications have had on biopsy or post-biopsy complications.

In this study, Dr. Karnes and his colleagues sought to determine how the rates of biopsy or post-biopsy complications have changed following the publication of:

- 2008 and 2012 U.S. Preventive Services Task Force (USPSTF) recommendations
- 2009 European Randomized Study of Screening for Prostate Cancer and Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial
- 2013 American Urological Association (AUA) guidelines

Because little research has been done on biopsy complications, they also looked for factors that seem to put specific patients at higher risk.

The researchers analyzed administrative claims data from the OptumLabs Data Warehouse, which contains information on more than 100 million individuals enrolled in private health plans and Medicare Advantage Plans across the U.S. They focused specifically on data from 104,584 men over 40 who underwent biopsies between Jan. 1, 2005, and Sept. 30, 2014.

Over that time, the researchers found that biopsy rates fell by one-third, with significant drops following the 2008 USPSTF recommendations, 2012 USPSTF recommendations and 2013 AUA guidelines.

Approximately 17 percent of biopsies resulted in complications, the most common of which included infections, bleeding and urinary retention. The overall complication rate decreased by 10 percent. However, the rate of individual complications increased from 14 - 18 percent, mostly due to infection.

Given this increase in relative risk, Dr. Karnes and his colleagues performed statistical analysis to identify predictors of post-biopsy complications. They found that patients who were over 70 had a prior diagnosis of cancer, or a history of fluoroquinolone antibiotics or anticoagulant use were at highest risk. The researchers believe that the recognition of these modifiable and nonmodifiable risk factors could guide future decision-making for patients and clinicians considering a biopsy.

"Our findings indicate that we should focus further efforts on improving how we select [patients](#) to undergo a [biopsy](#), how we prep them and, perhaps, even how we perform biopsies to reduce the complications associated with the procedure," says Dr. Karnes.

Provided by Mayo Clinic

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