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Frequency of Testing for Prostate Cancer Using Prostate-Specific Antigen among Older Men in a Large Health System

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To the Editor:

The United States Preventive Services Task Force (USPSTF) recommends against routine prostate cancer screening in adults aged ≥ 70 years.¹ We aimed to (1) determine the proportion of men in a large healthcare system aged ≥ 70 years with no history of prostate cancer who underwent recent prostate specific antigen (PSA) testing by age category.

Methods

We performed a retrospective analysis of adult men aged ≥ 70 years evaluated in outpatient primary care within a health system affiliated with an academic medical center between July 1, 2015 and June 30, 2017. Northwestern University's Institutional Review Board approved the study.

Participants

Men were eligible who were at least 70 years old on July 1, 2015 and had ≥ 1 outpatient visits with a clinician at a Northwestern Medical Group primary care clinic in Chicago or its northern suburbs between July 1, 2015 and June 30, 2017. Patients were excluded if their electronic health record (EHR) included a diagnosis code or procedure code indicating prostate cancer prior to 7/1/2015 (diagnostic codes available from the author upon request).

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Measurements—We obtained discrete EHR data for all participants. Characteristics assessed included age category (70 to 74 years, 75 to 79 years, 80 to 84 years, and 85 years or older as of 7/1/15) and race and ethnicity. The main outcome measure was the presence of a PSA laboratory result in the EHR occurring between 7/1/15 and 6/30/17.

Statistical Analysis

We used descriptive statistics to describe the study population and the frequency of study outcomes. Chi-square tests and Wilcoxon rank-sum test were performed to examine statistically significant differences. All the analyses were done in SAS 9.4 (SAS Institute Inc., Cary, NC).

Results

There were 4,847 eligible men aged 70 years without prior prostate cancer. Of these, 2,174 (45%) had PSA testing during the 2-year study period. PSA testing was highest in men aged 70 to 74 (59%) and declined with age (23% among men 85 and older) (Table 1). Of all eligible men aged 70 who had a PSA test, 982 (45%) were 75 or older. PSA test differed by race. In the 70–74 age group, 79 (51%) non-Hispanic black men were tested compared to 944 (62%) non-Hispanic white men.

Discussion

In one large health system, PSA testing was commonly used among older men, even in the very elderly (23% in men aged 85 years). These results suggest that despite recommendations to stop screening men aged 70 years, a significant proportion of older men are undergoing screening. Additionally, we found that a lower proportion of non-Hispanic black men received a PSA test compared to non-Hispanic white men across all age groups, even though non-Hispanic black men are more likely both to develop prostate cancer and to die from the disease.^{2,3} To our knowledge, this is the first study to examine PSA screening rates in older men using clinical data from a large health system rather than patient surveys.

Abnormal PSA results and screening detecting prostate cancers in older men have been associated with adverse short term effects on quality of life and increased short term costs; however, we are not aware of evidence demonstrating benefits in this age group.⁴ We do not know why clinicians continue to utilize PSA in older men who are unlikely to benefit from testing. Reasons may include failure to recognize potential downstream harms, an overestimation of potential benefits,⁵ or the perception that patients expect to continue testing.⁶

A limitation of this study is that we had data from only one health system and did not have access to claims. Testing done elsewhere may have been missed, which would mean that our results represent underestimates of the frequency of PSA testing. It is also possible that some tests were done for prostate cancer surveillance or other high-risk indications but not coded as such. Additionally, these findings may not be generalizable to other care settings.

Conclusions

A substantial proportion of men received PSA testing even though they were at an age where testing for and treating early stage prostate cancer has not been shown to provide benefit and may lead to unnecessary harm, decreased quality of life, and increased short term medical costs. Strategies are needed to reduce inappropriate PSA testing in older men.

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Table 1

Prostate Specific Androgen Testing (N, %) by Age Group and Race/Ethnicity

Age Group, years	All Patients*	Race/Ethnicity				p [†]
		White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian	
70–74	1192 (59.3)	944 (61.8)	79 (50.6)	35 (47.9)	37 (57.8)	0.001
75–79	578 (42.9)	435 (44.6)	41 (33.9)	22 (37.3)	23 (39.7)	0.183
80–84	253 (30.7)	198 (32.5)	22 (28.2)	9 (28.1)	7 (21.2)	0.411
85	151 (22.7)	121 (23.7)	10 (22.2)	6 (23.1)	1 (0.04)	0.255

* p < 0.001 for differences in testing rates across age groups.

† p values represent differences across racial/ethnic groups within age strata.