

**Spotlight**

# Should Race and Ethnicity Be Factored into Prostate Cancer Screening Guidelines?

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The risk of developing prostate cancer differs by race. Black men have especially high rates of prostate cancer incidence and mortality—over twice those of white men—while Asian and Hispanic men have lower rates.<sup>1</sup> Annually in the United States, millions of men undergo prostate cancer screening with the prostate-specific antigen (PSA) test. However, the PSA test is “hardly more effective than a coin toss” according to Richard Ablin, the physician who discovered the PSA enzyme in 1970.<sup>2</sup> Efforts to curb PSA screening are currently underway due to questions about the value of the PSA screening test as well as the growing emphasis on reducing overtreatment and waste in our health care system. As a result, several organizations have issued clinical guidelines on PSA screening, yet no guidelines for PSA screening adequately address all racial and ethnic groups.

These dynamics all point to the question of whether clinical guidelines for PSA screening call for a more nuanced consideration of race and ethnicity. Some experts have called for race-specific screening guidelines while others contend it is misguided to stratify men for screening based on

**Between 2009 and 2014, PSA screening rates differed considerably by race and ethnicity, with the largest declines occurring among white men. Clinical guidelines for PSA screening may require a more nuanced consideration of race and ethnicity rather than blanket recommendations for all racial groups or high-risk classifications based on race alone.**

race and ethnicity alone without considering other risk factors.<sup>3,4</sup> To further inform this debate, we examined trends in PSA screening and prostate cancer diagnoses in various racial and ethnic groups during a period of changing clinical guidelines.



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## The Backdrop: Current Landscape and Trends

### Dubious Worth of Screening and Treatment for Prostate Cancer

Evidence-based clinical recommendations for preventive services are important because screening tests are imperfect and can lead to treatments that harm patients. This is especially true in the case of PSA screening and prostate cancer treatments. Approximately 80 percent of positive PSA results are false positives, meaning the test incorrectly indicates that prostate cancer is present when, in fact, it is not.<sup>5</sup>

Reducing overtreatment of prostate cancer is desirable because treatments carry significant risks such as erectile dysfunction and urinary and bowel incontinence. Most prostate tumors are not life threatening and will not progress to the point of needing treatment. Among true positive results, however, the PSA test is unable to distinguish between aggressive and indolent (slow-growing) tumors.

### Conflicting Guidelines for Screening for Prostate Cancer

In 2008, the US Preventive Services Task Force (USPSTF), an independent panel of experts in evidence-based medicine, recommended against screening for prostate cancer in men 75 and older but could not recommend for or against prostate cancer screening in men younger than 75 due to insufficient scientific evidence on the benefits and harms of screening (see table 1).<sup>6</sup> Four years later the USPSTF changed its recommendation to one discouraging PSA-based screening among men of all ages, stating “there is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.”<sup>7</sup> This revised 2012 recommendation, while intended for men of all races, was supported by findings from two large clinical trials conducted among predominantly white participants.<sup>5,8</sup>

The USPSTF acknowledges the lack of inclusion of minority subjects in the clinical trials that supported its 2012 recommendation. Despite insufficient evidence on the harms and benefits of PSA screening among minorities and known racial differences in PSA levels and prostate cancer progression,<sup>9,10</sup>

the USPSTF applied its recommendation to men of all races because “it is problematic to selectively recommend PSA-based screening for black men in the absence of data that support a more favorable balance of risks and benefits.”<sup>7</sup>

Clinical guidelines from such professional societies as the American Urological Association, the American College of Physicians, and the American Cancer Society (ACS) do not explicitly recommend for or against PSA screening. Instead, they encourage shared decision making between patients and providers. Some of these guidelines mention race in their recommendations while others do not (table 1). For example, ACS recommends men “make an informed decision with their health care provider about whether to be screened for prostate cancer” at age 50 for those who are at average risk of prostate cancer and at age 45 for those considered to be at high risk of prostate cancer, including black men.<sup>11</sup> Currently, however, there is not enough evidence to support classifying men into average-risk or high-risk groups based on race alone. A higher lifetime risk of prostate cancer mortality in certain racial or ethnic groups “is not automatically a license to start screening.”<sup>3</sup>

### The Research: Race and Ethnicity in Prostate Cancer Screening and Diagnosis

To better understand racial and ethnic differences in PSA screening and prostate cancer detection we examined trends in PSA screening and prostate cancer diagnosis rates in the following racial and ethnic groups: white, black, Asian, and Hispanic. We calculated annual rates of PSA screening and prostate cancer diagnoses among men 50–64 years old with commercial insurance and among men 65 and older enrolled in Medicare Advantage (MA) from 2009 to 2014. We analyzed de-identified administrative claims data from the OptumLabs™ Data Warehouse.

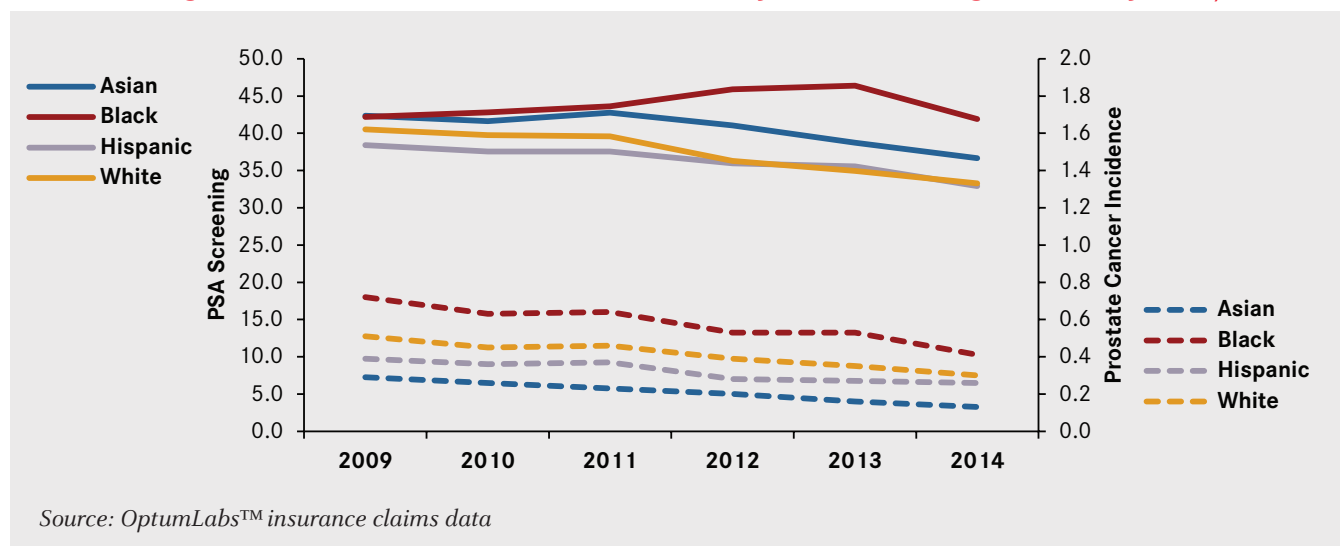
#### PSA Screening Rates Differ by Race and Ethnicity

Despite a 2012 guideline discouraging PSA screening among all men regardless of race, PSA screening rates between 2009 and 2014 differed considerably by race and ethnicity, with the largest declines occurring in white men.

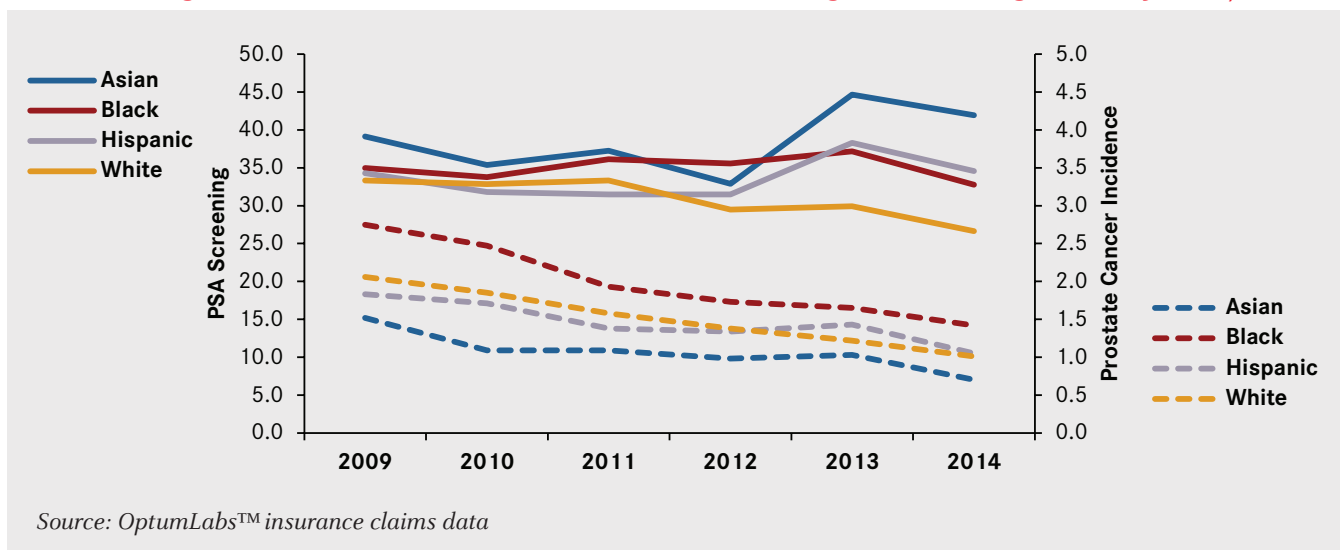
Among men ages 50–64 with commercial insurance (figure 1), PSA screening decreased 18 percent in white men (from 40.5 percent to 33.3 percent), 14 percent in Hispanic men (from 38.4 percent to 32.8 percent), and 13 percent in Asian men (from 42.3 percent to 36.7 percent). PSA screening rates among black men remained relatively unchanged, with less than a 1 percent decline (from 42.2 percent to 41.9 percent) over the six-year study period.

Among MA enrollees ages 65 and older, PSA screening rates declined among only two of four racial groups (figure 2). While rates dropped among black men (6 percent drop from 35 percent in 2009 to 32.8 percent in 2014) and white men (20 percent drop from 33.3 percent in 2009 to 26.7 percent in 2014), they rose in Asian men (7 percent increase from 39.2 percent in 2009 to 42 percent in 2014) and they remained constant among Hispanic men (34.3 percent in 2009 to 34.6 percent in 2014).

**FIGURE 1**  
**PSA Screening and Prostate Cancer Rates in Commercially Insured Men Ages 50–64 by Race, 2009–14**



**FIGURE 2**  
**PSA Screening and Prostate Cancer Rates in Medicare Advantage Enrollees Ages 65+ by Race, 2009–14**



### Prostate Cancer Diagnosis Rates Drop among All Racial and Ethnic Groups

Not surprisingly, as PSA screening rates decline, so do prostate cancer diagnoses. The incidence of prostate cancer diagnoses between 2009 and 2014 declined dramatically among men of all races and ethnicities (figure 1).

For men ages 50–64 with commercial insurance, prostate cancer rates fell by 55 percent in Asians (0.29 percent to 0.13 percent), 41 percent in whites (0.51 percent to 0.30 percent), 43 percent in blacks (0.72 percent to 0.41 percent), and 33 percent in Hispanics (0.39 percent to 0.26 percent). Throughout the six-year study period, black men ages 50–64 had the highest rate of new prostate cancer diagnoses, while Asian men ages 50–64 had the lowest rate.

Prostate cancer diagnoses also fell substantially among men ages 65 and older with MA (figure 2). Prostate cancer rates fell by 54 percent (1.5 percent to 0.7 percent) among Asians, 51 percent (2.1 percent to 1.0 percent) among whites, 48 percent (2.8 percent to 1.4 percent) among blacks, and 43 percent (1.8 percent to 1.1 percent) among Hispanics. Similar to the younger, commercially insured sample, black men ages 65 and older had the highest incidence of prostate cancer in each of the six years studied.

### Conclusion: Greater Transparency and Shared Decision Making Needed

We found substantial racial and ethnic differences in PSA screening and prostate cancer diagnoses between 2009 and 2014. Clinical guidelines for PSA screening may require a more nuanced consideration of race and ethnicity rather than blanket recommendations for all racial groups or high-risk classifications based on race alone. In April, 2017, the USPSTF released a draft recommendation on PSA screening. The revised recommendation continues to discourage men 70 and older from undergoing screening altogether. But for men 55 to 69, the USPSTF now says, the trade-offs between the potential benefits and harms of screening are too close to call. Some experts have questioned whether this guidance will be helpful for patients at high risk of prostate cancer. Policy makers should carefully consider data from all racial and ethnic groups when issuing recommendations.

More importantly, more transparency concerning the clinical data on which recommendations are based is essential. PSA screening guidelines are based on findings from studies conducted mostly on white men and the risks and benefits of screening among other racial and ethnic groups will likely differ.

Our analysis cannot determine the reasons behind these differences. Black men may truly be at higher risk for prostate cancer or, alternatively, increased cancer detection may result simply from higher PSA screening rates. Some experts believe PSA levels are higher in black men due to conditions other than prostate cancer, such as infections or benign swelling.<sup>10</sup> The lower risk of prostate cancer in Asians could be due to lifestyle factors or genetics.<sup>12</sup>

The differences we see in the two study groups (higher PSA screening rates in commercially-insured men 50–64; higher rates of prostate cancer among men 65+ with MA) are likely driven more by age than insurance type. The risk of prostate cancer rises with age. PSA screening is more common among the younger group as past guidelines have encouraged screening beginning at age 50 and the USPSTF's 2008 recommendation against PSA screening among all men 75 years old and older.<sup>6</sup>

Declining trends in PSA screening and prostate cancer diagnoses may affect prostate cancer mortality rates. A decrease in PSA screening could lead to an increase in mortality from prostate cancer. Data from the National Cancer Institute, however, show the opposite trend—mortality rates for prostate cancer declined between 2009 and 2013 in men of all races and ethnicities. Because PSA screening produces many false positives and identifies mostly indolent tumors, reductions in PSA screening may not have a substantial impact on prostate cancer mortality rates.

While the debate continues about the benefits and harms of PSA screening and prostate cancer treatments among various racial and ethnic groups, physicians and consumers will likely benefit from engaging in shared decision making. Disseminating best practices in shared decision making, including how best to communicate the risks and benefits of screening tests and treatment options to different racial and ethnic groups, will improve the alignment between consumer values, screening decisions, and treatment options.

TABLE 1  
Clinical Guidelines for PSA Screening for Prostate Cancer

Organization	Release Date	Recommendation	Mention of Race?
US Preventive Services Task Force (USPSTF)	December 2002 <sup>13</sup>	The USPSTF concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate-specific antigen (PSA) testing or digital rectal examination. <b>“I statement”*</b>	No
	August 2008 <sup>6</sup>	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of prostate cancer screening in men younger than 75 years. <b>“I statement”*</b>	
		The USPSTF recommends against screening for prostate cancer in men 75 years and older. <b>“D grade”**</b>	
	May 2012 <sup>14</sup>	The USPSTF recommends against PSA-based screening for prostate cancer. <b>“D grade”**</b>	
		<p><b>*“I statement”:</b> <i>The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.</i></p> <p><b>**“D grade”:</b> <i>The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.</i></p>	
American Cancer Society (ACS)	March 2010 <sup>11</sup>	<p>ACS recommends that men be given a chance to make an informed decision with their health care provider about whether to be screened for prostate cancer. The decision should be made after getting information about the uncertainties, risks, and potential benefits of prostate cancer screening. Men should not be screened unless they have received this information.</p> <p>The discussion about screening should take place at</p> <ul style="list-style-type: none"> <li>• <b>age 50 for men who are at average risk</b> of prostate cancer and are expected to live at least 10 more years;</li> <li>• <b>age 45 for men at high risk</b> of developing prostate cancer, which includes African Americans and men who have a first-degree relative (father, brother, or son) diagnosed with prostate cancer at an early age (younger than age 65); and</li> <li>• <b>age 40 for men at even higher risk</b>, which includes those with more than one first-degree relative who had prostate cancer at an early age.</li> </ul>	Yes, African Americans
American College of Physicians (ACP)	May 2013 <sup>15</sup>	<p><b>Guidance Statement 1:</b> ACP recommends that clinicians inform men between the ages of 50 and 69 about the limited potential benefits and substantial harms of screening for prostate cancer. ACP recommends that clinicians base the decision to screen for prostate cancer using the PSA test on the risk for prostate cancer, a discussion of the benefits and harms of screening, the patient’s general health and life expectancy, and the patient’s preference. ACP recommends that clinicians should not screen for prostate cancer using the PSA test in patients who do not express a clear preference for screening.</p> <p><b>Guidance Statement 2:</b> ACP recommends that clinicians should not screen for prostate cancer using the PSA test in average-risk men under the age of 50, men over the age of 69, or men with a life expectancy of less than 10 to 15 years.</p>	No

TABLE 1 CONTINUED

Organization	Release Date	Recommendation	Mention of Race?
American Urological Association	April 2013 <sup>16</sup>	<p><b>Guideline Statement 1:</b> The panel recommends against PSA screening in men under age 40. (<i>Recommendation</i>; Evidence Strength Grade C (low strength evidence)). This age group contains a low prevalence of clinically detectable prostate cancer, no evidence demonstrating the benefit of screening, and likely the same harms of screening as in other age groups.</p> <p><b>Guideline Statement 2:</b> The panel does not recommend routine screening in men ages 40 to 54 at average risk. (<i>Recommendation</i>; Evidence Strength Grade C (low-strength evidence)). For men younger than age 55 at higher risk (e.g., positive family history or African American race), decisions about prostate cancer screening should be individualized.</p> <p><b>Guideline Statement 3:</b> For men ages 55 to 69, the panel recognizes that the decision to undergo PSA screening involves weighing the benefits of preventing prostate cancer mortality in 1 man for every 1,000 men screened over a decade against the known potential harms associated with screening and treatment. For this reason, the panel strongly recommends shared decision making for men ages 55 to 69 who are considering PSA screening, and proceeding based on a man's values and preferences. (<i>Standard</i>; Evidence Strength Grade B (moderate-strength evidence)). The greatest benefit of screening appears to be in men ages 55 to 69.</p> <p><b>Guideline Statement 4:</b> To reduce the harms of screening, a routine screening interval of two years or more may be preferred over annual screening in those men who have participated in shared decision making and decided on screening. As compared with annual screening, screening intervals of two years are expected to preserve the majority of the benefits and reduce overdiagnosis and false positives. (<i>Option</i>; Evidence Strength Grade C (low-strength evidence)). Additionally, intervals for rescreening can be individualized by a baseline PSA level.</p> <p><b>Guideline Statement 5:</b> The panel does not recommend routine PSA screening in men ages 70+ or any man with less than a 10- to 15-year life expectancy. (<i>Recommendation</i>; Evidence Strength Grade C (low-strength evidence)). Some men ages 70+ who are in excellent health may benefit from prostate cancer screening.</p>	Yes, African Americans
American College of Preventive Medicine (ACPM)	January 2008 <sup>17</sup>	The ACPM concludes that there is insufficient evidence to recommend routine population screening with digital rectal examination or PSA. Clinicians caring for men, especially African American men and those with positive family histories, should provide information about the potential benefits and risks of prostate cancer screening, and the limitations of current evidence for screening, to maximize informed decision making.	Yes, African Americans

- 1 Howlader N, Noone AM, Krapcho M, et al. *SEER Cancer Statistics Review, 1975–2013*, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2013/](http://seer.cancer.gov/csr/1975_2013/), based on November 2015 SEER data submission, posted to the SEER web site, April 2016.
- 2 Ablin RJ. The Great Prostate Mistake. *The New York Times* March 9, 2010.
- 3 Bokhorst LP, Roobol MJ. Ethnicity and prostate cancer: the way to solve the screening problem? *BMC Med.* 2015;13:179.
- 4 Shenoy D, Packianathan S, Chen AM, Vijayakumar S. Do African-American men need separate prostate cancer screening guidelines? *BMC Urol.* 2016;16(1):19.
- 5 Schroder FH, Hugosson J, Roobol MJ, et al. Screening and prostate-cancer mortality in a randomized European study. *N Engl J Med.* 2009;360(13):1320–1328.
- 6 Force USPSTF. Screening for prostate cancer: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2008;149(3):185–191.
- 7 Final Recommendation Statement: Prostate Cancer: Screening. U.S. Preventive Services Task Force. October 2014; <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/prostate-cancer-screening>. Accessed July 18, 2016
- 8 Andriole GL, Crawford ED, Grubb RL, 3rd, et al. Mortality results from a randomized prostate-cancer screening trial. *N Engl J Med.* 2009;360(13):1310–1319.
- 9 Henderson RJ, Eastham JA, Culkin DJ, et al. Prostate-specific antigen (PSA) and PSA density: racial differences in men without prostate cancer. *J Natl Cancer Inst.* 1997;89(2):134–138.
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- 12 Kimura T. East meets West: ethnic differences in prostate cancer epidemiology between East Asians and Caucasians. *Chin J Cancer.* 2012;31(9):421–429.
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- 14 Moyer VA, Force USPSTF. Screening for prostate cancer: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2012;157(2):120–134.
- 15 Qaseem A, Barry MJ, Denberg TD, Owens DK, Shekelle P, Clinical Guidelines Committee of the American College of Physicians. Screening for prostate cancer: a guidance statement from the Clinical Guidelines Committee of the American College of Physicians. *Ann Intern Med.* 2013;158(10):761–769.
- 16 American Urological Association. Early Detection of Prostate Cancer: AUA Guideline. April 2013; <https://www.auanet.org/common/pdf/education/clinical-guidance/Prostate-Cancer-Detection.pdf>. Accessed August 29, 2016.
- 17 Lim LS, Sherin K. Screening for prostate cancer in U.S. men ACPM position statement on preventive practice. *Am J Prev Med.* 2008;34(2):164–170.

The Public Policy Institute at AARP conducted this retrospective study using the OptumLabs™ Data Warehouse, a database containing de-identified administrative claims for privately insured and Medicare Advantage enrollees in plans offered by a large national U.S. insurance company. Individuals covered by this health plan represent a diverse mixture of ages, ethnicities and geographical regions across the United States.

Our analyses were limited to members 50 years old and older with current medical coverage and medical coverage the entire previous year (e.g., to be in the 2009 denominator, the member had to be enrolled in 2008).

#### Inclusion and Exclusion Criteria for PSA Screening

- Inclusion: HCPCS code G0103, or CPT code 84152, 84153 or 84154
- Exclusion: ICD-9 code 185, 233.4, 90.93, 236.5, 600, V10.46, V16.42, or V76.44

#### Inclusion Criteria for Prostate Cancer

- Inclusion: ICD-9 code 185, 233.4, or V10.46
  - One inpatient or two outpatient claims within 365 days.
  - In order to include only incident cases, we required a 365 day clean period with no prostate cancer claims prior to the first prostate cancer claim.

Information on race and ethnicity was obtained from a nationally recognized supplier of consumer marketing data and is a compilation of public source data and derived predictive ethnic data.

All study data were accessed using techniques that are in compliance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996, and no identifiable protected health information was extracted during the course of the study.

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Spotlight 25, April 2017

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