

Prostate cancer screening in Black men in Canada: a case for risk-stratified care

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Prostate cancer represents the fourth most common cancer and the most common noncutaneous malignant disease among men in Canada. In 2022, it is estimated that prostate cancer will be diagnosed in more than 24 000 people in Canada, representing 20% of all new cancers in men.^{1,2} The natural history of prostate cancer ranges from an indolent course to a fatal disease, which coincides with a spectrum of management strategies including active surveillance, surgery and radiation therapy. Clinicians continue to grapple with the question of how to identify those with clinically important disease while avoiding overdiagnosis and overtreatment. Black patients present even more of a dilemma since evidence to guide practice in this group is lacking. Data from Canada are minimal, but research from the United States and Europe has shown that the incidence and lifetime risk of developing prostate cancer among Black people are more than double than among their white counterparts.^{3,4} Current guidelines for prostate cancer have very limited generalizability to Black patients, and Canadian physicians are poorly resourced to provide evidence-based management of their disease. We discuss the current state of evidence and guidance for prostate cancer screening among Black patients in Canada and consider whether guidelines should be re-evaluated to consider differential screening for this high-risk population group.

How are Black people disproportionately affected by prostate cancer?

Mortality and incidence rates of prostate cancer vary widely worldwide by region and source, reflecting variance in screening guidelines and health care resources, as well as ethnocultural differences.⁵⁻¹² In the Caribbean, prostate cancer incidence rates as high as 304 per 100 000 men have been documented,⁵⁻⁷ compared with 4.7–19.8 per 100 000 in West Africa, 11.5 per 100 000 in Asia, 113.6 per 100 000 in Canada and 111.3 per 100 000 in the US.⁸⁻¹⁰ A 2020 publication that estimated global cancer burden found the highest mortality rate for prostate cancer in the Caribbean (27.9 per 100 000), followed by Middle, Southern and Western Africa (24.8, 22.0 and 20.2 per 100 000, respectively), and Micronesia and Polynesia (18.8 per 100 000).¹²

Some studies have evaluated epidemiological data for prostate cancer by racial groups in the same region. In England, the

Key points

- Black people with prostate cancer face a complex interplay of structural barriers such as inadequate health education, underrepresentation in clinical trials and reduced access to treatment — all of which contribute to poor health outcomes.
- Current screening guidelines do not provide specific guidance to clinicians treating Black patients, which likely contributes to their increased risk of developing and dying of prostate cancer.
- Implementing targeted screening programs in Canada for Black people could result in earlier detection and treatment, and lower risk of death.
- Any attempt to alleviate racial disparities in health requires not just isolated changes such as screening and treatment guidelines, but also a wider understanding of systemic racism and its impacts on patient outcomes.

incidence rate of prostate cancer was more than twice as high among Black people (rate ratio 2.1) than among white people in 2013–2017.¹³ In 2008–2010, the lifetime risk of a Black man in England dying from prostate cancer was 8%, compared with 4% for a white man and 2% for an Asian man.⁴ In the US, African American men are more likely to receive a diagnosis of prostate cancer at an advanced stage and twice as likely to die from prostate cancer than white men.¹⁰ The consistently high mortality rates for Black people across many regions may bolster the argument for genetic predisposition.⁸ However, environmental and social factors clearly play an important role. Notably, incidence rates of prostate cancer are up to 40 times greater among African American men than men living in African countries.¹⁴

Broadly speaking, racial disparities in prostate cancer diagnosis and mortality have been attributed to several factors, including gaps in health care access,¹⁵ the underrepresentation of Black patients in clinical trials¹⁶ and genetic ancestry.¹⁷ Recent evidence shows that, even with low-grade prostate cancer, African American patients tend to display more aggressive disease characteristics and experience an earlier transformation from latent to invasive prostate cancer than their white counterparts.¹⁸ In addition, research into the genetics of prostate cancer has shown that Black people have an increased likelihood of

inheriting high-risk loci associated with prostate cancer, which points to the possibility of genetic susceptibility in this group.^{19,20} Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.220452/tab-related-content, summarizes the evidence exploring various factors contributing to racial disparities in prostate cancer that we used in this review.

How do the social determinants of health affect prostate cancer outcomes for Black patients in Canada?

According to the 2016 Census, Black people constitute 3.5% of the Canadian population and are expected to constitute 5.6% of the total population by 2036.²¹ Black Canadians are a diverse population that includes migrant communities, as well as descendants of enslaved people.²²

Systemic racism refers to political, legal, health care and economic systems that disenfranchise certain groups. Structural racism highlights the structures that uphold such systems, such as laws, policies and deeply held beliefs.²³ The terms are sometimes used interchangeably. Many Black patients in Canada encounter structural barriers at several stages of the health care system, including primary care, diagnostic processes and prognosis.²⁴ These barriers are underpinned by centuries of systemic inequalities affecting racialized communities, which inevitably elevates their risk for poor health outcomes. The stress of encountering anti-Black racism in the health care system is further intensified by the underrepresentation of Black people among physicians, as well as implicit racial biases exhibited by health care professionals.^{25,26}

Clinicians in Canada should recognize that historical and ongoing systemic racism likely plays a role in the disproportionate burden of prostate cancer in Black communities and that socioeconomic barriers in health care may significantly affect prostate cancer outcomes for Black men. For example, research has shown that lower socioeconomic status contributes to poorer outcomes for patients with prostate cancer.^{27,28} Many studies have shown that poverty is racialized in Canada.^{29,30} In terms of nonfinancial barriers, inadequate health education and decreased health-seeking behaviours may contribute to adverse health outcomes for Black people with prostate cancer. Black people often lack prerequisite information to make informed decisions about prostate cancer screening,³¹ which is worsened by medical mistrust and limited discussions with health care providers that are culturally appropriate.³²

A recent cohort study found no increase in prostate cancer-specific mortality among Black people in Canada after adjusting for nonbiological differences such as socioeconomic status and access to health care.³³ This finding contradicted earlier studies that proposed genetic differences as a major cause for elevated risks of prostate cancer in Black people.^{19,20} It is, however, likely that genetic ancestry and societal barriers intersect, and further research is required to draw out such nuances. Nonetheless, understanding and addressing the social determinants of health is critical in closing the gap in health inequities in prostate cancer screening, diagnosis, treatment and survival.

How do guidelines account for racial disparities in prostate cancer outcomes?

The most recent guideline from the Canadian Task Force on Preventive Health Care recommends against routine prostate-specific antigen (PSA) screening for men of all ages, but states that the greatest benefit from screening is likely in those aged 55–69 years.³⁴ The guideline identifies and reports the increased risk of prostate cancer among Black people, but does not provide specific guidance on managing this increased risk, stating that “there is no trial data showing that benefits or harms of screening differ in these populations, as compared to men in the general population.”³⁴ Such a general statement fails to acknowledge the long history of exclusion of Black patients from clinical trials or any nuanced consideration of targeted screening guidelines for this population.

The 2022 guideline from the Canadian Urological Association (CUA) on prostate cancer summarizes 3 randomized controlled trials that constitute credible Level 1 evidence for prostate cancer screening.³⁵ The CUA emphasizes the importance of shared decision-making between patients and physicians in choosing screening and treatment methods that balance risk and benefit. According to the CUA guideline, should a patient decide to undergo screening, PSA testing should start at age 50 years in the general population or at age 45 years for people at an increased risk (Grade C recommendation). However, Black people are not included in this high-risk category, despite the evidence to suggest that this population is at a higher risk of metastatic disease and death. No explicit mention is made of racial disparities in prostate cancer diagnosis and mortality in the 2022 CUA guideline, except for in a few footnotes. Similarly, the US Preventive Services Task Force (USPSTF) recommendations allude to racial disparities in prostate cancer outcomes without providing any specific guidance for this group.³⁶

Should Black people in Canada be screened differently for prostate cancer?

The potential harms related to the overdiagnosis of prostate cancer — which include invasive biopsies, numerous medical visits, increased patient anxiety and increased health care costs — are important to note.^{37,38} However, should providers weigh the risk of overdiagnosis the same for Black people as for the general population?

Clinical trials of prostate cancer screening and treatment have not adequately included Black participants.^{39,40} Both the CUA and USPSTF guidelines on prostate cancer refer to data from the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial. However, this study reported that only 4% of participants were non-Hispanic Black men, which limits the external validity of the findings.⁴⁰ This is in the context of other studies that have shown that, when compared with white patients, Black patients in the US are more likely to have a larger tumour volume,⁴¹ elevated initial PSA levels,⁴² longer time intervals between screenings⁴³ and earlier transformation to clinically important disease.^{18,19} If Black people have been shown to present with more aggressive and

advanced disease in PSA-eligible populations, applying average-risk guidelines to this population ignores their lived reality.^{44,45} Moreover, the European Randomized Study of Screening for Prostate Cancer found that PSA screening is helpful in reducing the incidence of metastatic prostate cancer.^{46,47} Since Black people are at overall higher risk of developing metastatic prostate cancer, this further supports raising the question of whether PSA screening for Black people should start at an earlier age.

To show the impact of risk-stratified screening, a 2022 study used age- and year-specific data from the Surveillance, Epidemiology, and End Results database and US census data to evaluate the harm-to-benefit tradeoffs for Black people undergoing PSA screening, compared with people of other racial and ethnic groups.⁴⁸ The analysis showed that the numbers needed to diagnose and treat are more favourable for Black people compared with the general population, even in the least optimistic scenario (i.e., assuming that only half of the decrease in mortality rates is attributable to screening). An earlier microsimulation study showed that annual PSA screening in Black men aged 45–69 years reduced mortality (26%–29%) with a lower rate of overdiagnosis.⁴⁹ The risks related to increased screening remain a concern; however, the emergence of new protocols for biopsy and imaging, as well as active surveillance for patients with low-risk disease, may reduce the risk of overdiagnosis and overtreatment.⁴⁸

Of note, the development of new adjunctive strategies for early screening for prostate cancer may play an important role in ameliorating the risk of overdiagnosis and overtreatment for high-risk patients.³⁵ Recent publications from the CUA and Cancer Care Ontario suggest that biopsy-naïve patients at an elevated risk of clinically important prostate cancer may benefit from multiparametric magnetic resonance imaging before a biopsy.^{50,51} Other strategies for acquiring additional information about a patient's risk of cancer include interpreting their PSA velocity, percent-free PSA, and biomarker panels — all of which may be implemented in the future for refined care of Black patients at risk for prostate cancer. With regards to screening guidelines, insofar as the CUA suggests prostate cancer screening should start at age 45 years for men at increased risk of developing prostate cancer,³⁵ we consider that it is reasonable to include Black people in the high-risk group as they are at demonstrably high risk of diagnosis and death from prostate cancer.^{5–7} Supporting this suggestion is guidance from the European Association of Urology (EAU) that includes Black people in the high-risk category that begins screening at age 45 years, instead of age 50 years for the general population.⁵²

Why do we need better Canadian data?

Although studies have examined the under-representation of Black people in Canada in other screening programs and drug trials,^{53,54} similar research on prostate cancer clinical trials in Canada is lacking. The dearth of race-based data in Canada results in an over-reliance on data from the US and other countries. Although we may anticipate that the trends are similar in Canada, Black people in Canada are demographically different and face different barriers. For example, 2016 Census data show

that 52.0% of Black people living in Canada are immigrants, while 44.3% are Canadian citizens by birth.²¹ Conversely, only 10% of the Black population in the US is foreign-born.⁵⁵ The unique challenges facing the descendants of enslaved Africans in the US are not interchangeable with the experiences of Black immigrants and refugees in Canada, and vice versa. Insofar as a large proportion of Black people in Canada are foreign-born, any analysis of racial disparities in Canadian health care should consider the impact of migrant trauma, language barriers, cultural differences and poor health education.^{56–58} Of course, Black people in Canada are not a monolith; the concerns of Black people born in Canada should not be simply subsumed into a broader discussion of the challenges facing immigrant populations. For health care providers to propose actionable solutions to health inequities, researchers, funders, professional societies and the like must commit to studying the effects of racism on health with nuance.⁵⁹

Racial differences in health outcomes are an important consideration in health research as a means of identifying populations that require more evaluation, attention and intervention. We acknowledge that “race” is a social construct based on phenotype and cultural differences, and should not be considered as a biological variable, which would obscure the complex interactions of structural barriers, socioeconomic status, genetics and environmental exposures. As such, racial disparities in the incidence and mortality rates of prostate cancer among Black people are multifactorial and require multiple solutions.

Conclusion

Black people in Canada may be genetically predisposed to more aggressive prostate cancer, yet they also face socioeconomic barriers and lack access to robust health education, which affect their chances of early detection of disease. Moreover, they are less likely to receive optimal treatment after receiving a cancer diagnosis.

We consider that, in line with the EAU guideline that recommends screening Black people in Europe at an earlier age and the substantial existing evidence of poor outcomes, Canadian guidelines should include Black patients in the high-risk group that is eligible for prostate cancer screening at an earlier age, such as 45 years. Better health education for Black people is also required, as is careful attention and discussion of evidence when making shared decisions with Black patients. Gaps in the literature should prompt further study. The collection of race-based data and evaluation of diversity in clinical trials should be mandatory. Although it is beyond the scope of this article to outline a screening and diagnostic algorithm for Black people that would include the granularities of PSA testing, biopsy or radiographic imaging, we would argue that rigorous data collection and research are required to support a much-needed review of guidelines for prostate cancer screening to better support the health of Black people in Canada. Tackling structural racism is no easy task, and will require decolonization, institutional changes and antiracism education. Clinicians must play a role in closing the gaps.

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