

Lung Cancer Screening in African Americans: The Time to Act Is Now

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Health care disparities illuminated by the COVID-19 pandemic and the systemic racism magnified by recent events in our nation present an opportunity for all of us in medicine to examine the areas where health inequities exist, including the field of radiology. As radiologists, we are not immune to health inequity, and we must review our own practices and guidelines as they impact the health of all of our communities. Lung cancer screening provides a substantial opportunity for us to play a direct role in addressing health care disparities in the communities we serve.

Lung cancer is the leading cause of cancer death in the United States, resulting in more deaths than colon, breast, and prostate cancers combined. African Americans have the poorest survival rates of any racial/ethnic group for most cancers. Lung cancer is no exception, with African American men developing and dying of lung cancer at greater rates than any other racial/ethnic group.

The National Lung Screening Trial (NLST) demonstrated a 20% reduction in lung cancer mortality with annual lung cancer screening using low-dose CT of the chest when compared with chest radiography (1). Following the results of the NLST, the United States Preventive Services Task Force (USPSTF) issued a grade B recommendation that current and former smokers between the ages of 55 and 80 years, with ≥ 30 pack-year smoking history and ≤ 15 years since quitting receive annual lung cancer screening with low-dose CT. The Centers for Medicare and Medicaid Services subsequently issued a national coverage decision, providing lung cancer screening as a covered benefit.

In a subanalysis of the NLST by race, African Americans, who comprised 4.4% of participants in the NLST (2), were more likely to be current smokers (though with lower overall cigarette consumption), unmarried, to have not completed college, and to have more comorbidities, all variables associated with poorer lung cancer outcomes. Despite increased prevalence of these poor prognostic indicators, African Americans undergoing lung cancer screening with low-dose CT experienced the greatest reduction in lung cancer mortality of any racial/ethnic group (hazard ratio of 0.61 compared with 0.86 in White participants and 0.72 in other/nonreported individuals), in addition to a greater reduction in all-cause mortality when compared with White participants (hazard ratio of 0.81 in African Americans and 0.95 in Whites) (2).



Low-dose CT is a powerful tool that leads to increased detection of cancers at a lower, more treatable stage,

making it imperative that lung cancer screening with this imaging technique be provided to African American patients who so greatly need it and benefit from it. Review of recent data from the Southern Community Cohort Study, a large, prospective observational cohort study evaluating health disparities, including 48 364 ever-smokers, exemplified the insufficient inclusivity of current USPSTF guidelines for African American high-risk current and former smokers. Only 32% of African American smokers who developed lung cancer over a 12-year observational period were eligible for lung cancer screening according to USPSTF guidelines as compared with 56% of White smokers (3). Smoking history less than the 30 pack-year cutoff was the primary reason that African Americans who developed lung cancer did not meet current USPSTF lung cancer screening eligibility. This is particularly disconcerting as we know that African Americans are more likely to develop lung cancer despite lower rates of smoking than their White counterparts (4). Among patients eligible for lung cancer screening by current USPSTF criteria, African Americans have the highest lung cancer risk (4.4% utilizing the PLCOm2012 model, as compared with 3.2% in non-Hispanic Whites) (5). Lowering the pack-year eligibility requirement, decreasing the minimum age for screening eligibility, or incorporating a risk-based model that takes race into account are all proposed methods to improve the number of high-risk African Americans qualifying for lung cancer screening. A draft revision to USPSTF criteria, released July 7, 2020, with decreased minimum age and pack-year cutoffs of 50 years and 20 pack-years, respectively, would improve lung cancer screening accessibility for African American smokers.

Hopeful that we will soon see adoption of recently proposed modifications to USPSTF lung cancer screening eligibility, we must ensure that those who *are* eligible by current USPSTF criteria are encouraged and able to enter screening programs. We must also ensure that those who are enrolled in screening are able to adhere to recommended annual lung cancer screening regimens. Even when meeting current eligibility criteria, African American patients are less likely to receive lung cancer screening and to have longer times to follow-up than White patients (6). Recognizing that tobacco use is the greatest modifiable risk factor for lung cancer, it is critical that efforts be made to support African Americans' participation and success in smoking cessation programs. Several studies have shown African Americans to be less likely to quit smoking than

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White smokers, despite a relatively higher number of attempts to quit (7), highlighting the need for culturally competent smoking cessation programs.

Lung cancer screening is distinct from screening for other cancers in that eligible participants experience a unique set of barriers to screening entry, including psychologic barriers (8). Current and former smokers are stigmatized and experience heightened levels of shame and fatalism about smoking-related disease. African American smokers are additionally challenged in entering screening programs by experiences with racism. African Americans report an increased number of personal instances with racism, both in general as well as in the health care environment, linked to smoking and being out of date with cancer screening, respectively (9). African American men, at the highest risk of lung cancer, report high levels of medical mistrust, owing to a dark history of mistreatment by the medical community, most notably, though not limited to the infamous Tuskegee Study of Untreated Syphilis in the Negro Male. This heightened level of medical mistrust results in delays in preventive health screening (10).

The call to address health care disparities in the detection of lung cancer cannot be ignored. We are presented with a patient population—African American men, who currently experience the highest rates of lung cancer but benefit from the greatest improvement in outcomes when provided with a radiologic examination we routinely perform—lung cancer screening with low-dose CT. We must reevaluate and tailor our current approaches to lung cancer screening recruitment to ensure African Americans receive sufficient and sustained access to screening programs. Once enrolled in screening, it is essential that we support our African American patients by working to minimize barriers that limit adherence to screening recommendations and promoting effective smoking cessation strategies. Finally, it is of critical importance that the screening experience builds trust in the medical environment and encourages our patients to continue on the path toward treatment in the event that a lung cancer is detected. We can do this, and we must. The time to act is now.

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