Health disparity for blacks exists within lung screening guidelines

27 June 2019, by Tom Wilemon

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The U.S. Preventive Services Task Force (USPSTF) guidelines that determine which smokers qualify for CT scans exclude significant numbers of African Americans who develop lung cancer, a health disparity that merits modifications to lung cancer screening criteria, according to a study from Vanderbilt researchers.

"Among smokers diagnosed with lung cancer, 32 percent of African Americans versus 56 percent of whites were eligible for screening, so it's a striking disparity in eligibility," said Melinda Aldrich, Ph.D., MPH, assistant professor of Thoracic Surgery and the study's lead author.

The study published June 27 in *JAMA Oncology* reviewed cancer incidence data on 48,364 smokers from the Southern Community Cohort Study in one of the largest comprehensive evaluations to date of lung cancer screening guidelines established by the U.S. Preventive Services Task Force. The USPSTF issued the guidelines in 2013 after the National Lung Screening Trial demonstrated that CT scans provided early detection of lung cancer and reduced deaths from the disease by 20 percent compared to participants who received standard chest X-rays.

Aldrich and fellow researchers concluded that those guidelines may be too conservative for African Americans, setting the stage for later diagnoses and reduced odds of survival.

The guidelines, which insurance companies follow in determining coverage for CT scans, are based on smoking history and age. However, studies have shown that African Americans have a higher risk of lung cancer than whites even if they smoke less over time. The USPSTF guidelines currently recommend screenings for smokers age 55 to 80 who have a 30 pack-year history and who still smoke or have quit within 15 years.

The pack-year measurement is based on smoking a pack a day for one year and can be adjusted accordingly if someone smokes less or more than that amount. For example, if someone smoked half a pack for 30 years, the smoking history would equal 15 pack-years.

The researchers calculated that lowering the threshold for African Americans to a minimum 20 pack-year history increased their eligibility and resulted in more equitable screening eligibility.

"This is a proposal for the first step, acknowledging that the guidelines are inadequate—woefully inadequate, actually, as they exist right now—with a suggested change that would largely correct the disparity," said William Blot, Ph.D., associate director for Population Science Research at Vanderbilt-Ingram Cancer Center, research professor of Medicine and Ingram Professor of Cancer Research.

The study also noted that the mean age for lung cancer diagnosis occurs significantly earlier in African Americans compared to whites. Modifying

the minimum age for African Americans from 55 to 50 would also increase the eligibility percentage.

"The age shift may be equally important because it will shift the age at which we can diagnose African Americans to an earlier cancer stage and have better potential for curative treatment," Aldrich said. "If we don't shift that, then we are still going to potentially diagnose African Americans at a later stage."

Among patients diagnosed with stage IV lung cancer, the median age for diagnosis for whites was 63 compared to 59 for African Americans.

"This was one of those rare instances when the data are so clear that only a relatively simple adjustment is needed to level the playing field," said Jeffrey Blume, Ph.D., associate professor of Biostatistics and Biomedical Informatics, vice-chair for Education in Biostatistics and director of Graduate Education in the Data Science Institute. "Moreover, the simple changes to the guidelines that we are proposing can be easily incorporated into clinical practice without the need for fancy modeling or IT support."

Kim Sandler, MD, assistant professor of Radiology and Radiological Sciences, is co-director of the Vanderbilt Lung Screening Program and another author of the study. She said the new data offer an opportunity to move toward a better risk prediction model and improve screening guidelines.

"I found this data to be so compelling because you could greatly improve the sensitivity and find so many more patients with lung cancer in this African American population without sacrificing specificity, so you are not going to have more false positives than what we see in the white population," Sandler said.

Provided by Vanderbilt University