

Earlier Detection of Cancer Can Potentially Save Lives for All Races and Both Sexes, with Largest Impact in African American Males

Summary of “Racial/ethnic differences in cancer diagnosed after metastasis: absolute burden and deaths potentially avoidable through earlier detection”
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Cancer is the second leading cause of death in the United States.¹ For most cancers, non-Hispanic African Americans have the highest death rate and shortest survival time after cancer diagnosis.²⁻⁴ One reason for this is unequal access to cancer screening.

Cancer diagnosis is divided into four stages. Stage I is the earliest and stage IV is the latest stage. At stage IV, symptoms are often present and cancer has likely spread to multiple areas of the body. The goal of screening for cancer is to detect it earlier, before someone has symptoms. Detection of cancer before stage IV generally results in better health outcomes.

Who has the greatest need for early detection? To answer that question we first have to understand when cancer is detected in these groups now. To do this, we looked at data in SEER.⁵ SEER is a government program that provides information on cancer statistics in the United States. The eight groups used from SEER were men and women of four races (African American, White, Hispanic, Asian). The two outcome measures used were the number of late-stage cancer diagnoses and deaths within five years of diagnosis. Data for people aged 50-79 were used because they are most likely to benefit from cancer screening. Twenty different types of cancer were included. For our calculations, the same total number of people (100,000) were considered so results could be compared across all groups.

How could we diagnose cancer earlier? One way is through new ways to screen cancer. Recently, multi-cancer early detection (MCED) tests became available. Some MCED tests can detect more than 50 types of cancer with a single blood draw.⁶ These tests, added to recommended screening, could detect more cancers early. Because we do not yet know how

early MCED tests might be able to catch most cancers, we looked at two different ways they might reduce stage IV cancer diagnoses. The first way is to find cancer at stage III, before it reaches stage IV (shift stage IV to III). The second way is to find cancer gradually at an earlier stage of disease (stage III, stage II, or stage I) before it reaches stage IV (shift stage IV to III, II, I).

SEER data showed that African American men had 337 stage IV cancer diagnoses per 100,000 people per year. This was the highest number of stage IV cancer diagnoses of any group. Asian women had the lowest number of stage IV diagnoses (117). This is a 2.8-fold difference. The number of deaths within 5 years of cancer diagnosis followed the same trend as late-stage diagnoses. African American men were the most likely to die within five years, with 610 deaths per 100,000. They were 3-times more likely to die within 5 years of late-stage cancer diagnosis than Asian women. White males had the second highest number of deaths (483). African American women had the third highest number of deaths (425).

The types of cancer diagnosed at stage IV were mostly similar across the different groups. However, stage IV diagnoses for head and neck and ovarian cancers were higher in African Americans.

Knowing how each race and sex was affected by late-stage diagnosis in SEER allowed us calculate how an MCED test might change stage of diagnosis for each group. A shift from stage IV to stage III diagnosis led to a 13-14% decrease in deaths within 5 years for all groups. Because African American men had the largest number of deaths per 100,000, they had the most overall benefit from earlier diagnosis. Shifting from stage IV to stage III could lead to 80 fewer deaths of African American men, 61 fewer White men, and 45 fewer African American women per year. Shifting from stage IV to stage III/II/I diagnosis could result in 21-23% fewer

deaths in all groups. This is 126 fewer deaths of African American men, 99 fewer White men, and 68 fewer African American women per year.

How do these numbers compare to other causes of death? The number of deaths that could be avoided by earlier detection of cancer in African American men (80-126 per 100,000) is similar to the number of deaths per year from Alzheimer's (46 per 100,000), hypertension (55 per 100,000), and HIV (29 per 100,000) combined.⁷

This study shows that men and women of all races could benefit from earlier cancer detection. The impact of early detection could be particularly high in African Americans.

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