

Cancer in Oklahoma Data Brief Series:

Cancer among the Black Population in Oklahoma – Update 2024

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Introduction

Nationally, in 2021, Oklahoma ranked 20th highest among all the states in cancer incidence.¹ In 2022, the state ranked 4th highest in overall cancer mortality.¹ Historically disadvantaged populations in the United States (US), including the Black population, often shoulder a disproportionate burden of cancer compared to the non-Hispanic White population. Cancer incidence and mortality are higher among Blacks compared to Whites.² Black cancer mortality rates are the highest of any racial or ethnic group in the US.³ Given this troubling gap between Oklahoma's incidence and mortality rankings and the known disparities of cancer incidence and mortality, an examination of cancer incidence and mortality rates among the state's Black populations is warranted.

The Black population in the US has the highest cancer incidence and mortality rates and the lowest survival rates among the nation's major racial or ethnic groups.^{2,3} Compared to White men, Black men in the US have particularly high incidence rates for cancers of the stomach (1.8), prostate (1.7), liver and intrahepatic bile duct (1.5), colon and rectum (1.2), lung and bronchus (1.1) as well as kidney and renal pelvis (1.1); and mortality rates for cancers of the stomach (2.5), prostate (2.1), colon and rectum (1.5), liver and intrahepatic bile duct (1.5), as well as lung and bronchus (1.1).² Compared to White women, Black women in the US have particularly high incidence rates for cancers of the stomach (2.2), liver (1.3), colon and rectum (1.2), cervix (1.2), and kidney and renal pelvis (1.1); and mortality rates for cancers of the stomach (2.3), uterus (2.0), cervix (1.7), breast (1.4), colon and rectum (1.3), and liver (1.3).²

Elevated cancer rates for the Black population reflect socioeconomic differences that contribute to increased cancer risk.⁴ Low educational attainment, low income, and lack of health insurance coverage often hinder high-quality health care. In 2022, 17.3% of the Black population and 7.0% of the White population in the US lived below the federal poverty line.⁵ For the same year in Oklahoma, the corresponding rates were 22.8% of the Black population and 9.9% of the White population.⁵ In 2022, 56.2% of the Black population and 29.6% of the White population in the US lived in rent-occupied housing.⁵ In that same year, in Oklahoma, 62.6% of the Black population and 31.3% of the White population in the US lived in rent-occupied housing.⁵

The most recent reports have summarized cancer incidence and mortality rates for the Black population of Oklahoma, which comprised 9.7% of the state's population of 4,053,824 in 2023.⁶ This data brief updates our Data Brief from 2022 on the Black population in Oklahoma⁷ and examines cancer incidence, mortality, and survival.

Methods

All data sources used in this brief were publicly available and provided de-identified data. The data for cancer incidence were obtained from the Oklahoma Central Cancer Registry (OCCR), the Centers for Disease Control's (CDC) National Program of Cancer Registries (NPCR), and the NCI's Surveillance, Epidemiology, and End Results (SEER) program. Cancer mortality data were from Oklahoma Vital Statistics and the CDC's National Vital Statistics System (NVSS). Data were accessed through the United States Cancer Statistics: Data Visualization and OK2SHARE.

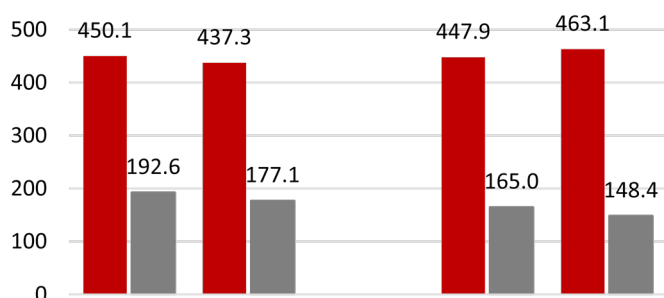
To ensure the stability of estimates and confidentiality, rates were suppressed if fewer than 16 counts were reported in a specific category, and all rates were age-adjusted to the 2000 US standard population. Data is limited to invasive cancers, including in situ cancers, except bladder cancer. All unknown values were excluded, and the resulting percentages were adjusted to averages estimated from the sample and population sizes.

In this data brief, the US Non-Hispanic (NH) Black, US NH White, and Oklahoma NH White populations serve as comparison groups for the NH Black population of Oklahoma. For this data brief, we will refer to NH Black as Black and NH White as White unless otherwise noted. Analyses characterizing the US included 49 states and the District of Columbia (DC), as Indiana's data was unavailable, and US territories were excluded. Mortality trends include different racial categories from 1999-2009 and 2010-2021 when the Oklahoma death certificate was changed to reflect multi-racial categories. This report uses the Black race only for analysis of both incidence and mortality. Temporal patterns were assessed using Average Annual Percent Change (AAPC) in rates with 95% confidence interval (CI) determination by Joinpoint regression analysis.⁸

Results

Overall, 8,722,295 cancer cases were diagnosed between 2017 and 2021 in the US; 957,970 of those cases were among Blacks. In Oklahoma, there were 104,501 cancer cases reported between 2017 and 2021; 6,576 new cancer cases were among Blacks. The cancer incidence rate in the US was 444.4 per 100,000 population compared to 449.7 per 100,000 in Oklahoma. For Blacks, the cancer incidence rate in the US was 447.9 per 100,000 population compared to 450.1 per 100,000 in Oklahoma. Overall, between 2018 and 2022, 3,014,773 deaths from cancer were reported; 351,587 were among Blacks. In Oklahoma, between 2018 and 2022, 41,847 deaths were reported, of which 2,560 were among Blacks. The cancer mortality rate in the US was 145.4 per 100,000 population compared to 173.9 per 100,000 in Oklahoma. For Blacks, the cancer incidence rate in the US was 170.4 per 100,000 population compared to 192.6 per 100,000 in Oklahoma.

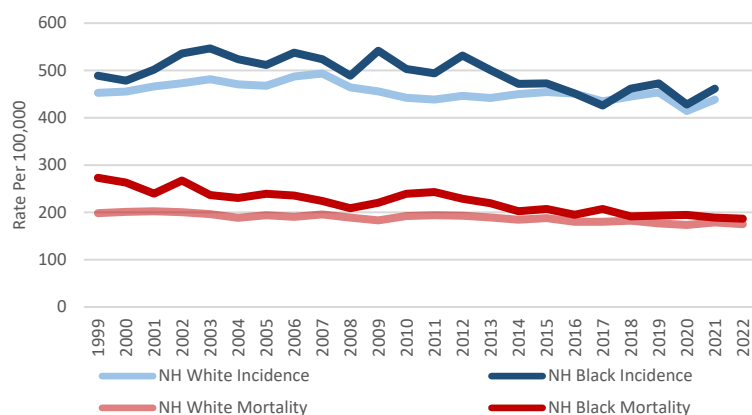
Figure 1: Overall Age-adjusted Cancer Incidence 2017-2021 and Mortality (2018-2022) Rates for the NH Black and NH White Populations in Oklahoma and the United States



Source: CDC Cancer Data Visualization

Figure 1 shows that the Black population in Oklahoma has an overall age-adjusted cancer incidence rate that is slightly higher than of the White population. This rate is very similar to the incidence rate for the US Black population and lower than for the US White population. For mortality rates, the Black population in Oklahoma has an overall age-adjusted cancer mortality rate that is higher than for the White population in Oklahoma, the US Black population, and the US White population. The overall age-adjusted mortality rate of 192.6 per 100,000 persons for the Black population in Oklahoma is 1.3 times higher than for the US White population.

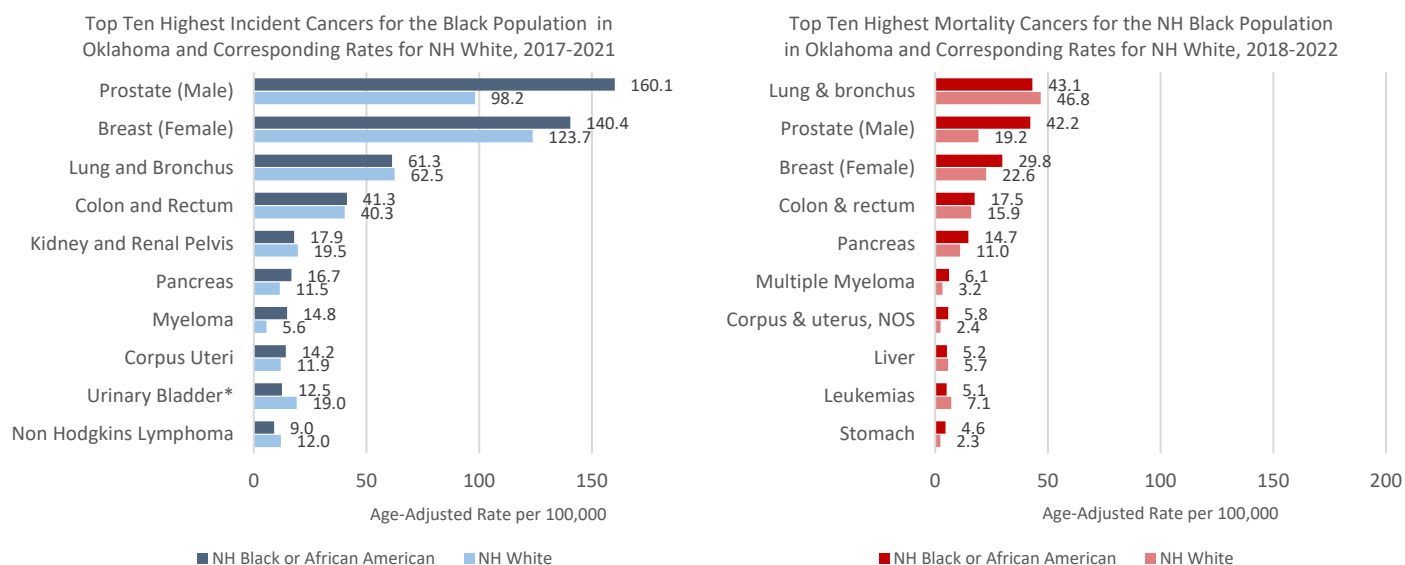
Figure 2: Trend of Overall Age-Adjusted Cancer Incidence (2017-2021) and Mortality (1999-2022) Rates for the NH Black and White Populations in Oklahoma



Source: OK2SHARE

Figure 2 shows trends of overall cancer incidence and mortality over time for Black and White populations in Oklahoma. Incidence rates in the Black and White populations show similar declines. Among Blacks, the overall Average Annual Percent Change (AAPC) showed a statistically significant decrease of -0.7 (p-value=0.0004). Among Whites, the overall AAPC was -0.4 (p-value=0.0008). When analyzing mortality, there was a steady decrease showing an AAPC of -1.4 (p-value=<0.001) for Blacks and a steady decline, though less steep, AAPC of -0.6 (p-value=<0.001) for Whites. While we are seeing a steeper decline in both incidence and mortality rates, the rates remain consistently higher for the Black population than the White population.

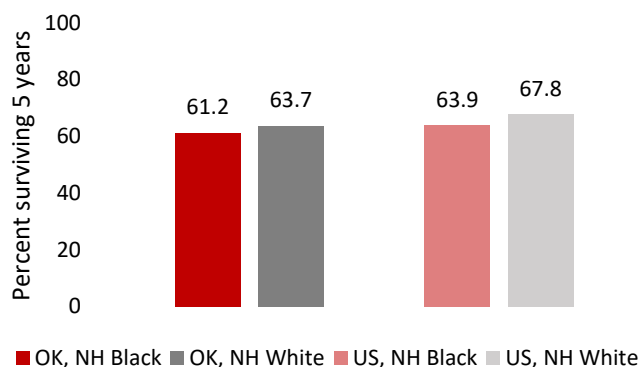
Figure 3: Top Ten Cancers for Incidence and Mortality for the NH Black Population in Oklahoma



*Invasive and in situ; Source: OK2SHARE

Figure 3 ranks the top 10 cancers for incidence and mortality for the Black population in Oklahoma and compares rates for these cancers to the corresponding rates for the White population in Oklahoma. Prostate cancer shows the largest disparity, with incidence rates 1.6 times and mortality rates 2.2 times higher for Black men compared to White men. Among women, breast cancer also shows large disparities, with incidence rates 1.1 times and mortality 1.3 times higher for Black women than White ones. The White and Black populations have virtually identical incidence rates for lung and bronchus cancer, but the White population has a slightly higher mortality rate at 1.1 times compared to the Black

Figure 4: Five-Year Survival All Cancers for NH Black and NH White Populations in Oklahoma and the United States, 2017-



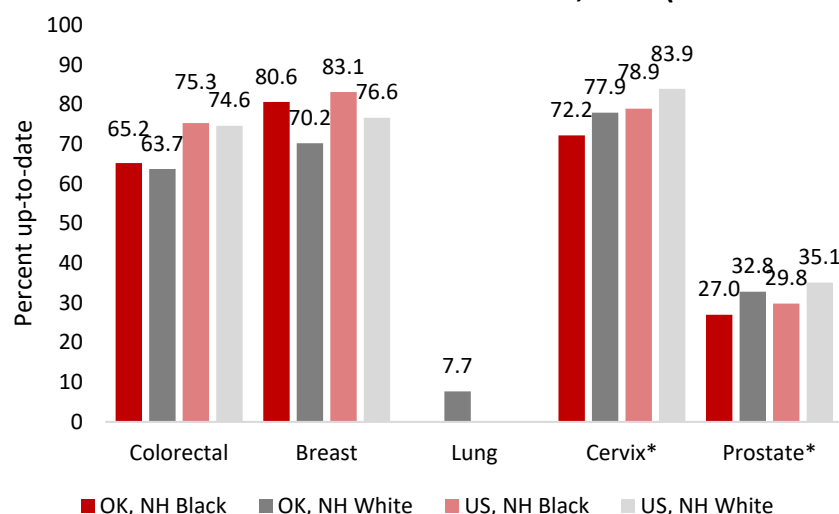
Source: CDC Cancer Data Visualization

population. Other cancers also show disparities in incidence, including pancreas (1.5), myeloma (2.6), corpus & uterus (1.2), and stomach (1.8), and in mortality, including pancreas (1.3), multiple myeloma (1.9), corpus & uterus (2.4), and stomach (2.0). Although cervical cancer does not appear in Figure 3 listing the “top ten” cancer types, it can be prevented through vaccination and detected through screening. The age-adjusted incidence rate for 2017-2021 was lower in Black women compared to White women, (8.2 vs. 9.3 per 100,000). However, the age-adjusted mortality rate was higher in Black Women compared to White women (3.9 vs. 3.5 per 100,000).

Figure 4 shows the five-year survival rates among Blacks and Whites in Oklahoma and the US. Blacks have lower survival rates for overall cancer in both Oklahoma and the US. Additionally, compared to the US, Oklahoma has lower survival for both groups.

Figure 5 shows that both Black and White persons in Oklahoma have lower screening rates than their US counterparts. Black women have a higher proportion up-to-date with breast cancer screening, but not cervical cancer screening. For colorectal cancer screening, Black and White persons in Oklahoma have lower screening rates than their US counterparts. For Lung cancer screening, only the White population has a sample size large enough to estimate. For Prostate, despite having higher incidence and mortality rates, they have lower rates than NH White men, and Oklahoma men have lower screening rates than US men overall.

Figure 5: Colorectal, Breast, and Cervix* Cancer Screening for the NH Black and NH White Populations in Oklahoma and the United States, 2022 (*Cervix and Prostate 2020)



Source: CDC BRFSS

BRFSS Cancer Screening Definitions:

Breast: Women aged 50-74 years who have received a mammogram in the past 2 years

Colorectal: Adults aged 50-75 years who have fully met the USPSTF recommendation (blood stool test in the past year and/or blood stool test in the past 3 years and sigmoidoscopy in the past 5 years, and/or colonoscopy in the past 10 years)

Lung: Adults aged 55 to 80 who have a significant smoking history (30 pack-years or more) and are either current or former smokers (within 15 years of quitting)

Cervical: Women aged 21-65 years having received a Pap test in the past 3 years

Prostate: men aged 40 and older who have reported ever having a PSA test within the last 2 years

Conclusions and Implications for Practice and Policy

Findings from this report demonstrate that the need remains to improve cancer outcomes and eliminate barriers to high-quality health care for the Black population of Oklahoma. However, some progress is being made. A trend toward decreasing disparity in cancer incidence and mortality rates was observed for the Black population in Oklahoma compared to the White one. Moreover, the gap between Blacks and Whites for colorectal cancer shows very similar rates of incidence and, particularly, mortality. Still, the disparity in overall cancer survival for the Black population in Oklahoma persists, as does this population's disparities in incidence and mortality for cancers of the pancreas, myeloma, corpus & uterus, stomach, and others. Screening rates for breast cancer are higher for Black women compared to White women in the state, and the breast cancer screening rate for Black women has reached the Healthy People 2030 goal of 80.3% of females aged 50-74 who received a breast cancer screening.⁹ Additionally, both Black and White persons in Oklahoma exceeded the Healthy People 2030 goal of 68.3% completing recommended colorectal screening,⁹ but still have lower colorectal cancer screening than Black and White persons nationally. Cervical cancer screening rates remain low among Black and White women in Oklahoma, falling below the Healthy People 2030 goal of 79.2% of women being screened for cervical cancer appropriately.⁹

Additional efforts are needed to increase the receipt of evidence-based cancer screening. Patient demand for evidence-based cancer screenings could be increased through cancer education and awareness programs partnering with the Black population of Oklahoma. Access to cancer screenings could be increased by continuing to fund programs such as the National Breast and Cervical Cancer Early Detection Program (NBCEDP), which provides community-based breast and cervical cancer screenings to low-income women. Funding similar community-based cancer screening programs for colorectal cancer, lung cancer, and other evidence-based cancer screenings using the NBCEDP's model as a framework would benefit many Oklahomans, especially low-income and medically underserved populations in the state. Cancer screening could be improved through programs that keep healthcare providers up to date with the latest cancer screening guidelines and give them feedback on how frequently their patients receive appropriate screening tests.

Programs to reduce or eliminate financial barriers to receipt of high-quality cancer care, including access to clinical trials, are warranted.¹⁰ Financial concerns cause many individuals with symptoms to delay health care, which can be devastating. Moreover, financial hardship affects a large proportion of individuals who undergo cancer treatment, including over 50% of those with lung or colorectal cancer, and the proportion reporting financial hardship is greatest for Black cancer patients.¹¹ Funding for research should be increased to help ensure diversity among patients enrolled in clinical trials, as this helps to improve cancer outcomes. Funding also should be increased to support research aimed at better understanding why many cancers, including prostate cancer, breast cancer, and others, are particularly lethal among Black patients.

Addressing tobacco use, obesity, and alcohol consumption remains essential, as these factors collectively represent the leading preventable risks for developing cancer in the US. Tobacco alone contributes to nearly one-third of all cancer deaths, while obesity and excessive alcohol intake are linked to cancers of the liver, breast, colon, and pancreas, among others. These risks are preventable through sustained public health efforts, including stronger regulations on tobacco and alcohol sales, improved access to cessation and weight management programs, public education campaigns, and policies promoting healthier lifestyles. Vulnerable populations, such as youth, low-income communities, and minorities, are particularly at risk and require targeted interventions. A comprehensive, multi-faceted strategy is crucial to reduce these behaviors and reduce cancer incidence nationwide.

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