Cancer in Oklahoma Data Brief Series:

Cancer among the Adult Black Population in Oklahoma

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Introduction

Nationally, Oklahoma ranks 34th worst among all of the states in overall cancer incidence, but 4th worst in overall cancer mortality.[1] Given this troubling gap between Oklahoma's incidence and mortality ranking, examination of cancer incidence and mortality rates among the state's high-risk populations is warranted. In particular, 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 (NHW) population.

The Black population in the US has the highest cancer mortality rates and the lowest survival rates among the nation's major racial or ethnic groups.[2,3] In the US, compared to NHW men, Black men have high incidence rates for cancers of the prostate, colon and rectum, stomach, liver and for myeloma. They also have high mortality rates for nearly every cancer, with mortality rates over 1.5 times higher than NHW men for cancers of the prostate, liver, stomach and for myeloma.[4] Comparing Black women to NHW women in the US, Black women have high incidence rates for cancers of the stomach, liver, cervix and for myeloma. They also have high mortality rates for nearly all cancers, with mortality rates for cancers of the stomach, uterus and cervix being over 1.5 times higher than for NHW women.[5]

Elevated cancer rates for the Black population reflect socioeconomic differences that contribute to increased cancer risk.[3] Relatively low educational attainment, low income and corresponding lack of health insurance coverage are often barriers to high-quality health care.[3] In 2019, 21.2% of the Black population and 9.0% of the NHW population in the US lived below the federal poverty line. For the same year in Oklahoma, the corresponding rates were 28.2% of the Black population and 12.4% of the NHW population.[6] Additionally, in 2019, among persons aged less than 65 years, 11.4% of Black persons and 7.8% of NHW persons in the US were uninsured as were 17.3% of Black persons and 14.2% of NHW persons in Oklahoma.[7] This relative lack of access to healthcare contributes to an increased likelihood of diagnosis with late-stage cancer and a higher risk of cancer death.[3]

No recent reports have summarized cancer incidence and mortality rates for the Black population of Oklahoma, which comprised 7.3% of the state's population of 3,959,353 in 2020.[8] This data brief rectifies this shortcoming by presenting information on overall and cause-specific cancer incidence and mortality among the Black population of Oklahoma. It also examines cancer screening rates for this population and concludes with a brief discussion of the significance of findings on clinical practice and public health policy.

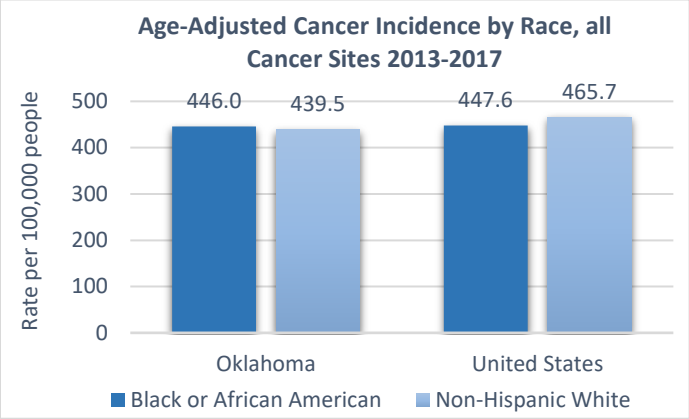
Methods

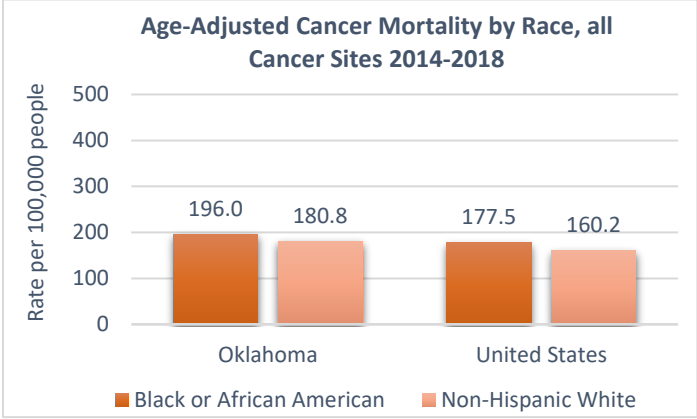
Data for cancer incidence were obtained from the Oklahoma Central Cancer Registry (OCCR), the Centers for Disease Control's (CDC) National Program of Cancer Registries (NPCR), and the NCI's Surveillance, Epidemiology, and End Results (SEER) program. Cancer mortality data were from Oklahoma Vital Statistics and the CDC's National Vital Statistics System (NVSS). Information about cancer screening was obtained from the Oklahoma Behavioral Risk Factor Surveillance System (BRFSS). All data sources used in this brief were publicly available and provided de-identified data.

To ensure the stability of estimates and confidentiality, CDC and SEER 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. CDC and SEER data is limited to invasive incident cancers, except bladder cancer, which also includes *in situ* cancers. BRFSS estimates were suppressed for stability if the unweighted sample size for the denominator was less than 50 or if the Relative Standard Error was above 0.3. All unknown values were excluded, and resulting percentages were weighted averages estimated from the sample and population sizes.

In this data brief, the US Black, US NHW and Oklahoma NHW populations serve as comparison groups for the Black population of Oklahoma. The racial category "Black" is defined as anyone with a reported race of "Black" or "African American", including those of Hispanic ethnicity. Analyses characterizing the US included the 50 states and the District of Columbia (DC), and excluded US territories.

Figure 1: Overall Age-adjusted Cancer Incidence and Mortality Rates for the Black and NHW Populations in Oklahoma and the United States

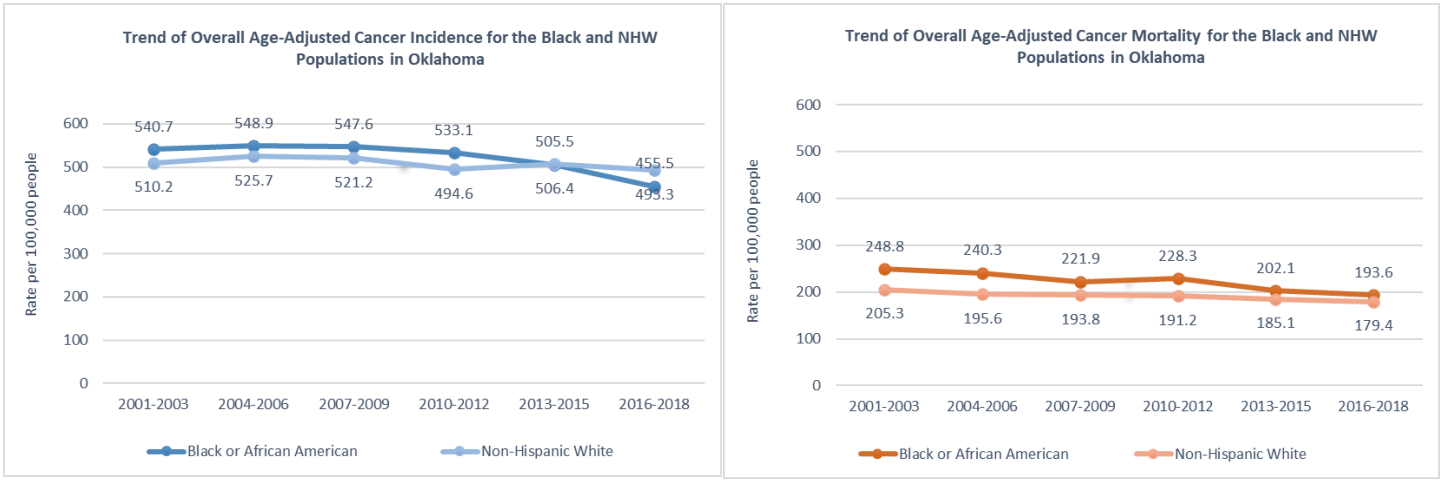




Source: SEER and CDC (NPCR and NVSS)

For incidence rates, Figure 1 shows that the Black population in Oklahoma has an overall age-adjusted cancer incidence rate that is slightly higher than for the NHW population in the state. This rate is very similar to the incidence rate for the US Black population, and lower than for the US NHW population. For mortality rates, Figure 1 shows that the Black population in Oklahoma has an overall age-adjusted cancer mortality rate that is higher than for the NHW population in Oklahoma, the US Black population, and the US NHW population. The overall age-adjusted mortality rate of 196.0 per 1000,000 persons for the Black population in Oklahoma is 1.2 times higher than for the US NHW population.

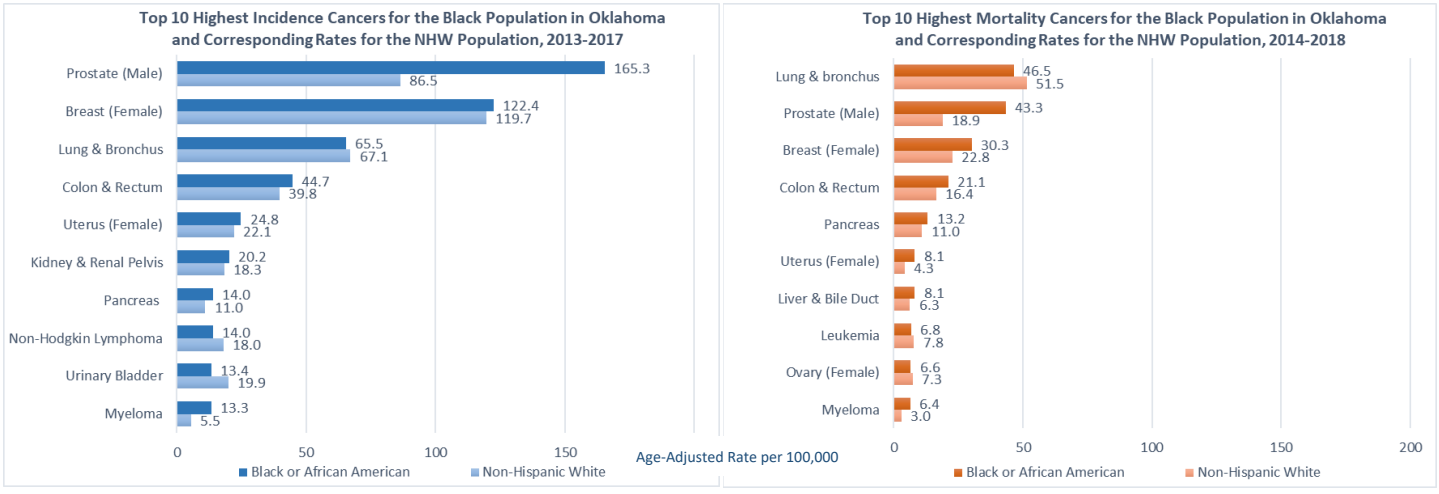
Figure 2: Trend of Overall Age-Adjusted Cancer Incidence and Mortality Rates for the Black and NHW Populations in Oklahoma, 2001-2018



Source: OCCR and Oklahoma Vital Statistics

Figure 2 shows trends of overall cancer incidence and mortality over time for the Black and NHW populations in Oklahoma. For overall cancer incidence, the figure shows that rates for the Black population were slightly higher than rates for the NHW population from 2001 to 2013. In contrast since 2013, overall age-adjusted cancer incidence rates for the Black population dropped slightly below those for the NHW population. For overall cancer mortality, over time, the rates for the Black population have been consistently higher than those for the NHW population. There is, however, a significant decrease in overall cancer mortality for the Black population in the most recent years.

Figure 3: Top 10 Cancers for Incidence and Mortality for the Black Population in Oklahoma

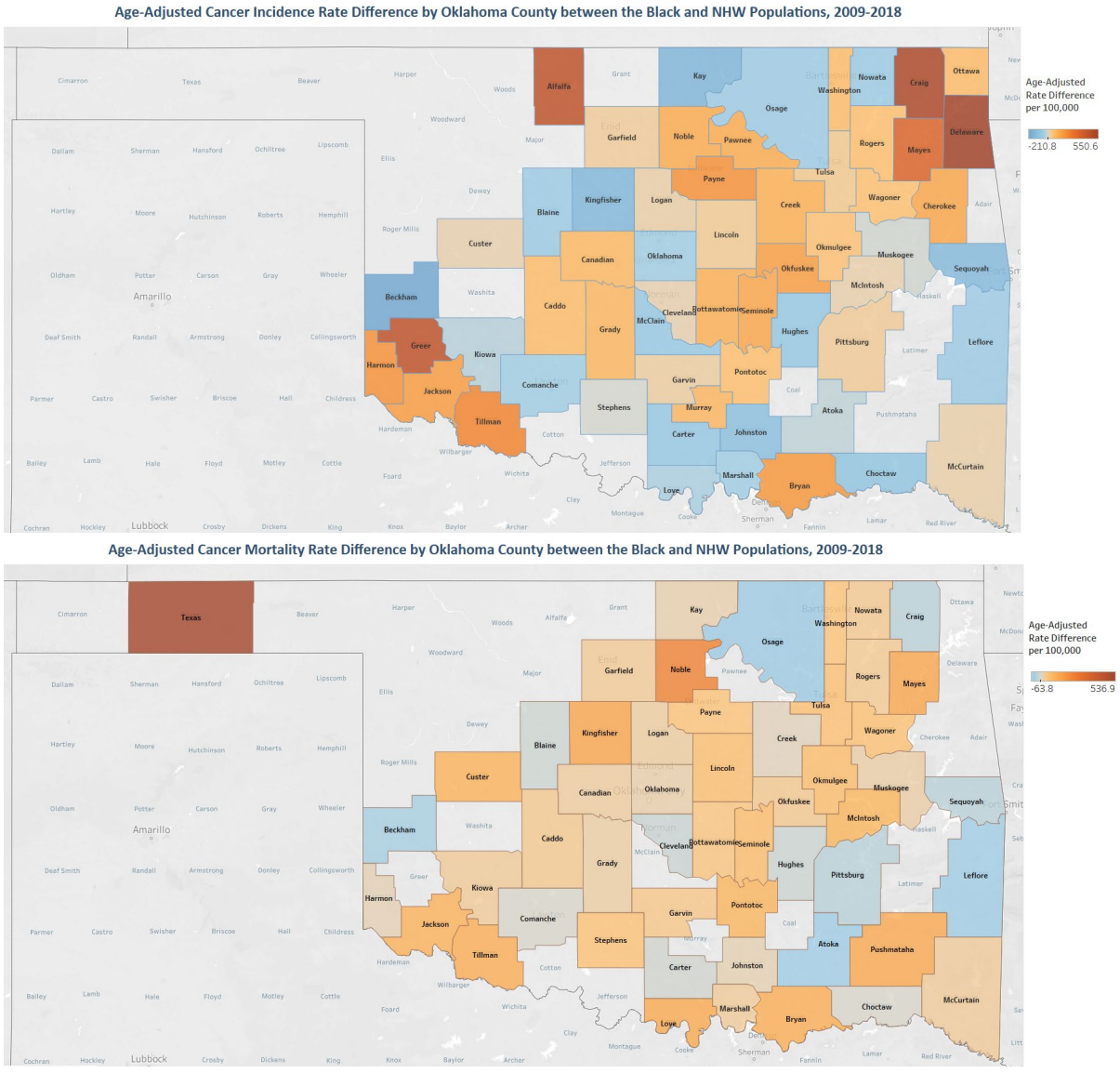


Source: SEER and CDC (NPCR and NVSS)

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 NHW population in Oklahoma. Notably, the top 4 cancers for

incidence match the top 4 cancers for mortality, and these 4 cancers have much higher rates than the others. Among these top 4 cancer types, prostate cancer has substantially higher incidence (1.9 times) and mortality (2.3 times) rates for the Black population than for the NHW population. Also, among the top 4 cancers, gaps between Black and NHW incidence rates compared to mortality rates widen for breast cancer and colorectal cancer. In fact, breast cancer and colorectal cancer mortality rates are both 1.3 times higher for the Black Population than the NHW population. An additional top 10 cancer for which the incidence rate for the Black population is markedly higher than for the NHW population is myeloma (2.4 times). Additional top 10 cancers for which the mortality rate is markedly greater for the Black population than for the NHW population include uterine cancer (1.9 times) and myeloma (2.1 times).

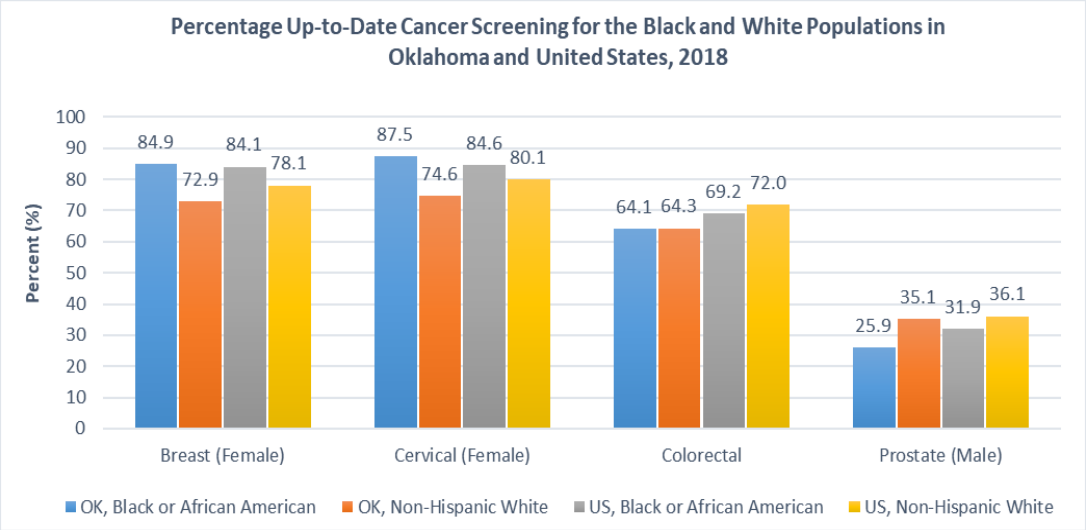
Figure 4: Overall Age-adjusted Cancer Incidence and Mortality Rate Differences by Oklahoma County between the Black and NHW Populations, 2009-2018



Source: OCCR and Oklahoma Vital Statistics

Figure 4 maps the overall age-adjusted rate difference between the Black and NHW populations in Oklahoma for both cancer incidence and mortality. Counties shaded in dark orange represent those with a higher rate for the Black population than for the NHW population. Counties with no shading represent those with suppressed cancer rates. In this figure, for overall cancer incidence of the 58 counties with shading, 37 counties have a higher incidence rate for the Black population than for the NHW population. For overall cancer mortality, of the 52 counties with shading, 39 counties have a higher mortality rate for the Black population compared to the NHW population. This figure shows that the gap between incidence and mortality for the Black population in Oklahoma compared to the NHW population is also an issue at the county level. For more detailed rates, refer to Appendices 1 and 2 for incidence and mortality tables and maps by county for the Black population in Oklahoma.

Figure 5: Cancer Screening for the Black and NHW Populations in Oklahoma and the United States, 2018



BRFSS Cancer Screening Definitions:

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

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

Prostate: Men aged 40 years and above having received a PSA test in the past 2 years

Source: BRFSS

Figure 5 shows that in Oklahoma and the US, higher proportions of Black women than NHW women are up-to-date with breast cancer and cervical cancer screening. The figure also shows that both Black and NHW adults in Oklahoma are less likely to be up-to-date with colorectal cancer screening than Black and NHW adults in the US. Notably, Black men in Oklahoma are the least likely of the 4 groups to have had prostate cancer screening.

Conclusions and Implications for Practice and Policy

Findings from this report demonstrate that there is a pressing need to improve cancer outcomes and eliminate barriers to high-quality health care for the Black population of Oklahoma. One approach to improving cancer outcomes would be to increase 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 could provide much benefit to the population and especially to low-income and medically underserved populations. Cancer screening could be improved through programs that keep health care providers up-to-date with the latest cancer screening guidelines and give them feedback on how frequently their patients are receiving appropriate screening tests.

Programs to reduce or eliminate financial barriers to receipt of high-quality cancer care, including access to clinical trials, are warranted. Financial concerns cause many individuals with symptoms to delay health care, which can be devastating.[9] 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.[10]

Funding for research should be increased to help ensure diversity among patients enrolled into cancer 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.

These and additional actions are needed, if, as a state, we are truly serious about achieving the ambitious, but worthy, goal of eliminating cancer disparities among the Black population of Oklahoma.

Suggested Citation: Sambo AB, Campbell JE, Hunsucker LA, Pharr SF, Carter HF, and Doescher MP. Cancer in Oklahoma Data Brief Series: Cancer among the Black Population in Oklahoma. Community Outreach and Engagement, Stephenson Cancer Center, OU Health. 2021 Sept; 1(1).

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