

Cancer in Oklahoma Data Brief Series:

Cancer among the Hispanic Population in Oklahoma

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Introduction

Nationally, 33 states have higher all-cause cancer incidence rates than Oklahoma. However, in terms of all-cause cancer mortality, only 3 states have higher rates than Oklahoma.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 and minority populations in the United States (US), often shoulder a disproportionate burden of cancer compared to the Non-Hispanic White (NHW) population.

No recent reports have summarized cancer incidence and mortality rates for the Hispanic population of Oklahoma, which comprised 11.9% of the state's population of 3,959,353 in 2020.² This data brief rectifies this shortcoming by presenting information on overall and cause-specific cancer incidence and mortality among the Hispanic 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

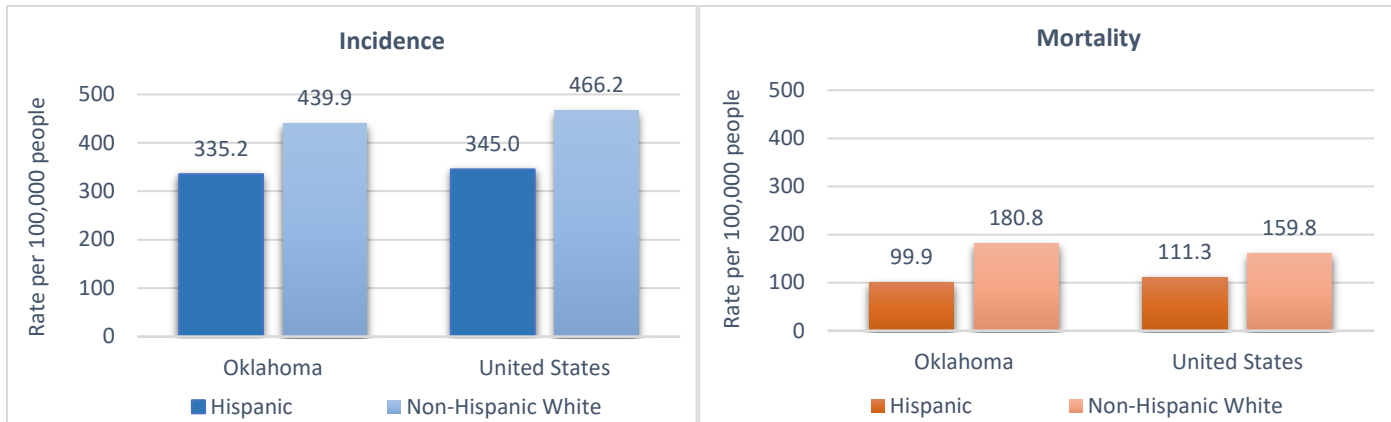
Data for cancer incidence were obtained from the Oklahoma Central Cancer Registry (OCCR), the Centers for Disease Control's (CDC) National Program of Cancer Registries (NPCR), and the NCI's Surveillance, Epidemiology, and End Results (SEER) program. Cancer mortality data were from Oklahoma Vital Statistics 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 Hispanic population, the US NHW and Oklahoma NHW populations serve as comparison groups for the Hispanic population of Oklahoma. The term Hispanic is used to refer to individuals who are Spanish-speaking or of Spanish descent. Despite the heterogeneity of this group, Hispanic is the only category available for cancer surveillance among the Hispanic/Latinx population.³ Consequently, it is the term used throughout this data brief. All analyses characterizing the US included the 50 states and the District of Columbia (DC), and excluded US territories.

Results: Overall, there were 681,033 cancer cases diagnosed between 2014 and 2018 in the US for the Hispanic population. 3,206 of those cases were in Oklahoma. Also, between 2014 and 2018 there were 196,128 cancer deaths in the US among the Hispanic population; 792 of those deaths were in Oklahoma.

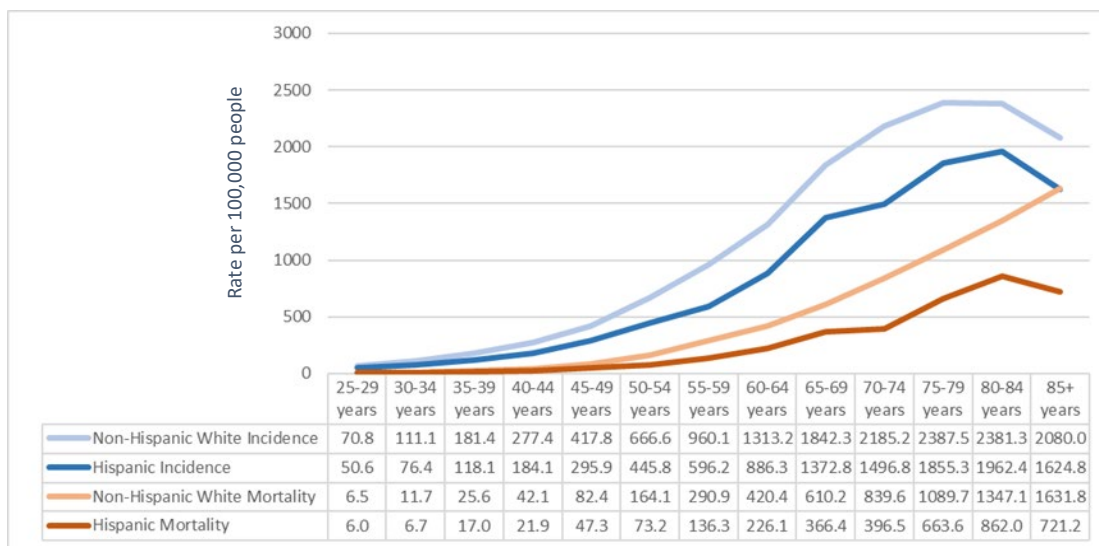
Figure 1: Overall Age-adjusted Cancer Incidence and Mortality Rates for the Hispanic and Non-Hispanic White Populations in Oklahoma and United States, 2014-2018



Source: SEER and CDC (NPCR and NVSS)

Figure 1 shows that for overall cancer incidence and mortality rates, the Hispanic population in both Oklahoma and the US have an overall age-adjusted cancer incidence rate and age-adjusted cancer mortality rate that is lower than for the NHW population. For incidence, the lower rate ratio for the Hispanic population is about the same for both Oklahoma and the US (roughly .75 times lower than for NHW). However, for mortality, the rate ratio for the Hispanic population in Oklahoma (.55 times lower than for NHW) is lower than it is for the US (.69 times lower than for NHW).

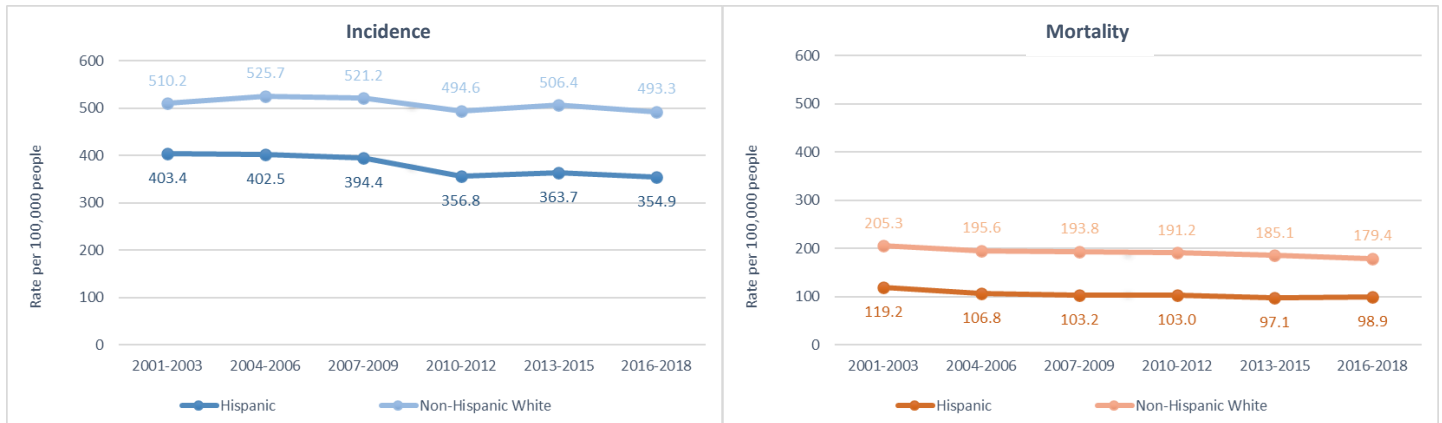
Figure 2: Overall Crude Cancer Incidence and Mortality Rates for the Hispanic and Non-Hispanic White Populations in Oklahoma by Age, 2014-2018



Source: OCCR and Oklahoma Vital Statistics

Figure 2 shows age-specific cancer incidence and mortality rates for the Hispanic and NHW populations in Oklahoma. Rates for the Hispanic population were lower than rates for the NHW population for all ages, for both incidence and mortality.

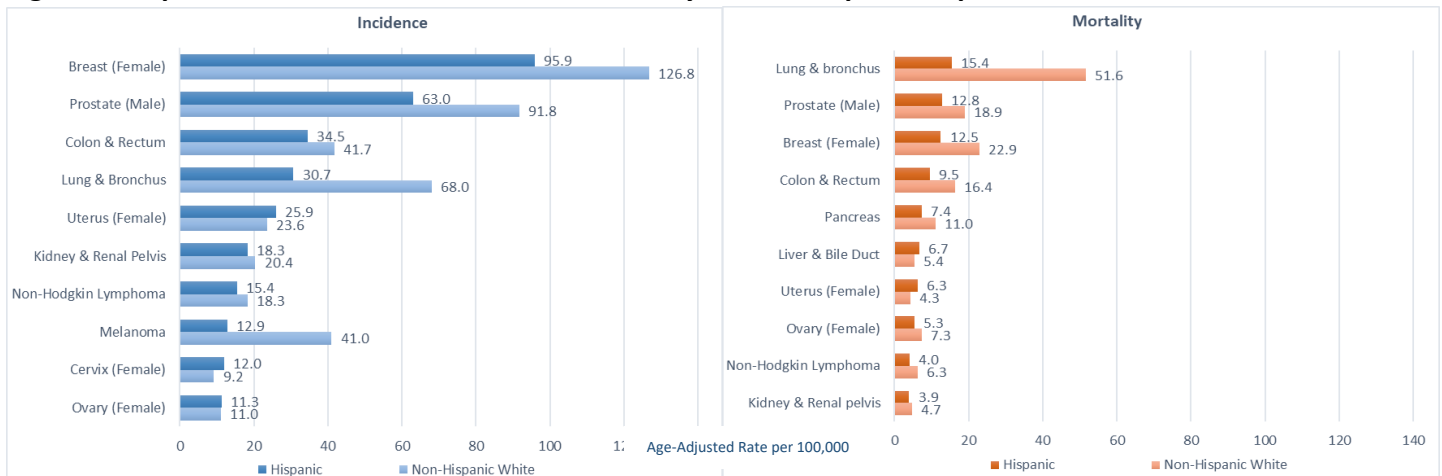
Figure 3: Trend of Overall Age-Adjusted Cancer Incidence and Mortality Rates for the Hispanic and Non-Hispanic White Populations in Oklahoma, 2001-2018



Source: OCCR and Oklahoma Vital Statistics

Figure 3 shows trends of overall cancer incidence and mortality over time for the Hispanic and NHW populations in Oklahoma. For both overall cancer incidence and mortality, the figure shows that rates for the Hispanic population were consistently lower than rates for the NHW population over time. Additionally, there is a significant decrease in overall cancer incidence and mortality for the Hispanic and the NHW populations over time.

Figure 4: Top 10 Cancers for Incidence and Mortality for the Hispanic Population in Oklahoma

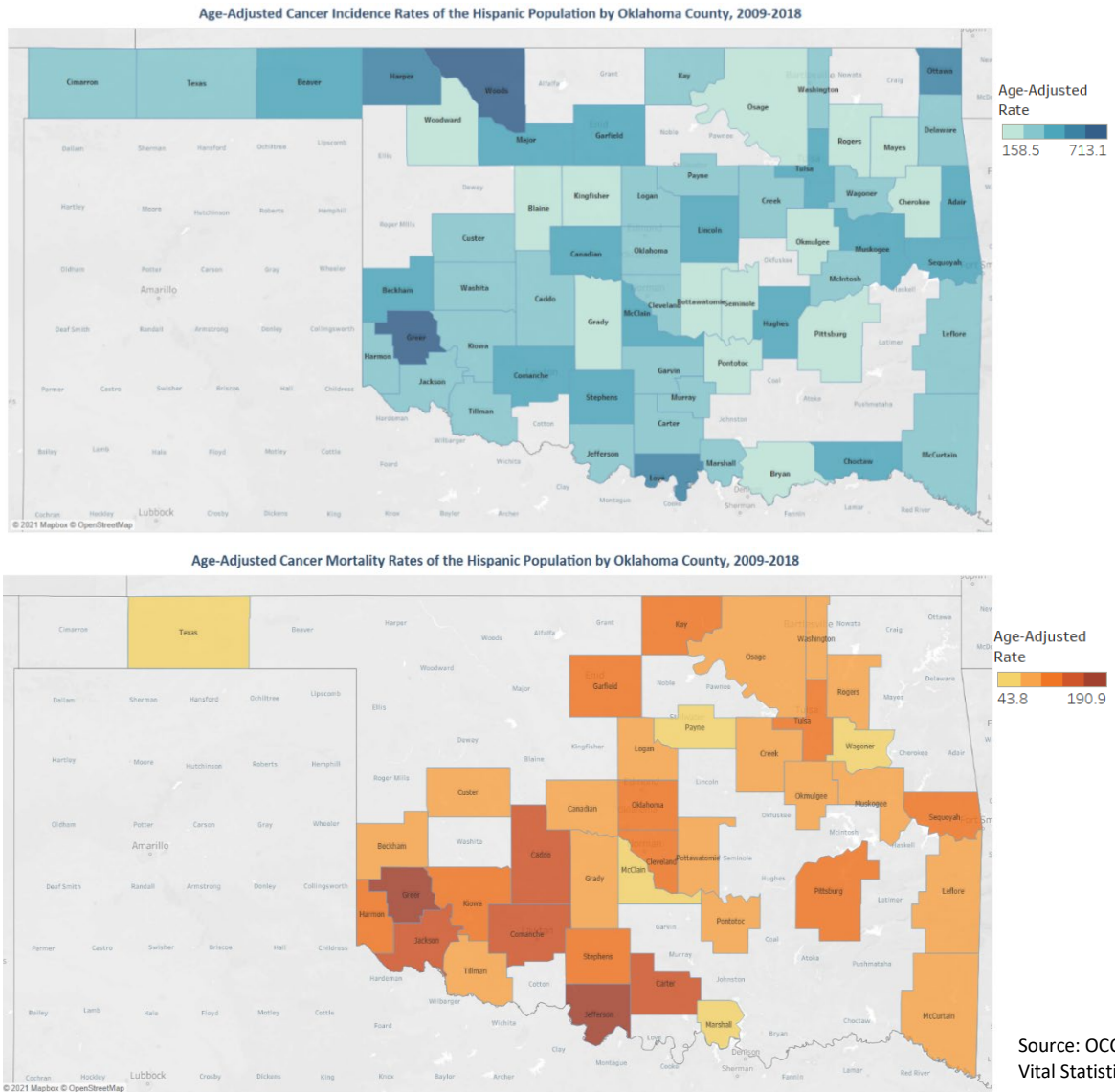


Source: OCCR and Oklahoma Vital Statistic

Figure 4 ranks the top 10 cancers for incidence and mortality for the Hispanic 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, all the rates for the Hispanic population are lower than for the NHW population in terms of

both incidence and mortality. The top 10 cancer types for which the incidence rate is higher in the Hispanic population than in the NHW population are cancers of the uterus (1.1 times), cervix (1.3 times) and ovary (1.03 times), all of which are gynecological cancers. The top 10 cancer types for which the mortality rate is greater in the Hispanic population than in the NHW population include cancers of the liver and bile duct (1.2 times) and uterus (1.5 times).

Figure 5: Overall Age-adjusted Cancer Incidence and Mortality by Oklahoma County among the Hispanic Population, 2009-2018



Source: OCCR and Oklahoma Vital Statistics

Figure 5 maps the overall age-adjusted cancer incidence and mortality for the Hispanic populations by county in Oklahoma. Counties without shading represent those with suppressed cancer rates. This figure shows that all-cause mortality rates for the Hispanic population are highest in southwestern counties. For more detailed rates, refer to Appendix 1 for incidence and mortality tables of the underlying number of cases and deaths, crude and age-adjusted rates, and rate differences between the Hispanic and NHW populations for each county in Oklahoma.

Figure 6: Cancer Screening for the Hispanic and Non-Hispanic White Populations in Oklahoma and the United States, 2020

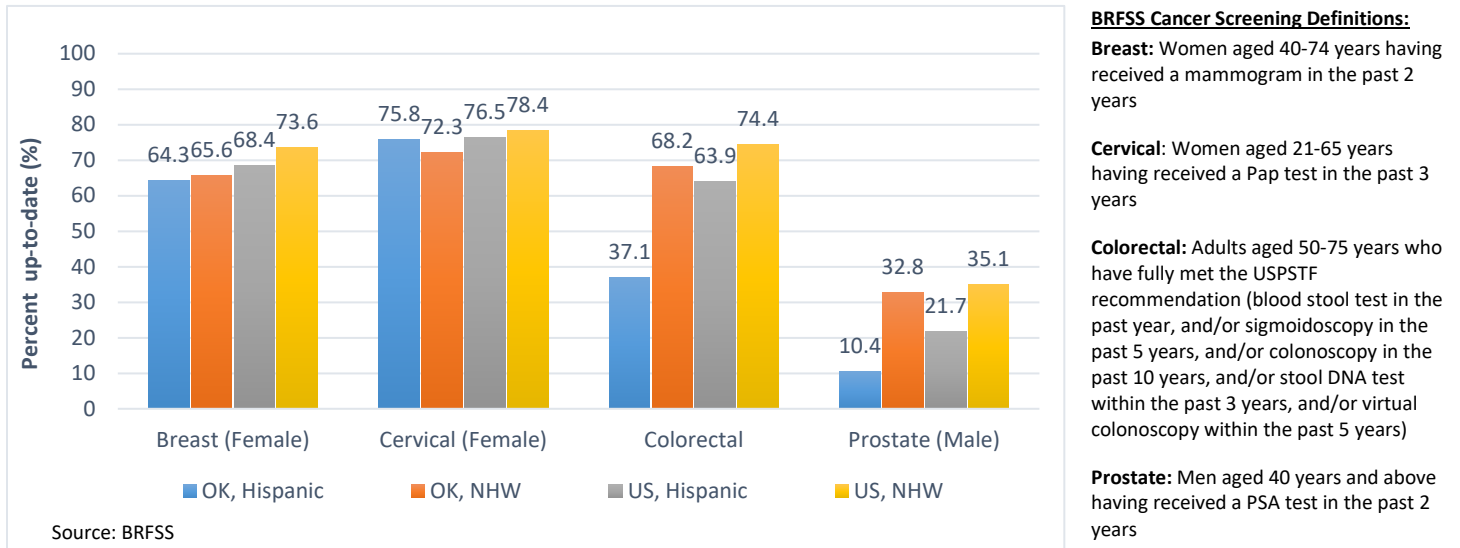


Figure 6 shows that when comparing Hispanic persons to NHW ones in Oklahoma and the US, Hispanic women in Oklahoma are the least likely to be up-to-date with breast cancer screening. For cervical cancer screening, Hispanic women are more likely to be up-to-date than NHW women in Oklahoma, but less likely to be up-to-date than Hispanic or NHW women in the United States. The figure also shows that the Hispanic individuals in Oklahoma are the least likely of the four groups to be up-to-date with colorectal cancer screening by a wide margin. Hispanic men in Oklahoma are also the least likely of the 4 groups to have had prostate cancer screening.

Figure 7: Up-to-date HPV Vaccination for the Hispanic and Non-Hispanic White Populations ages 13-17 in Oklahoma and the United States, 2019

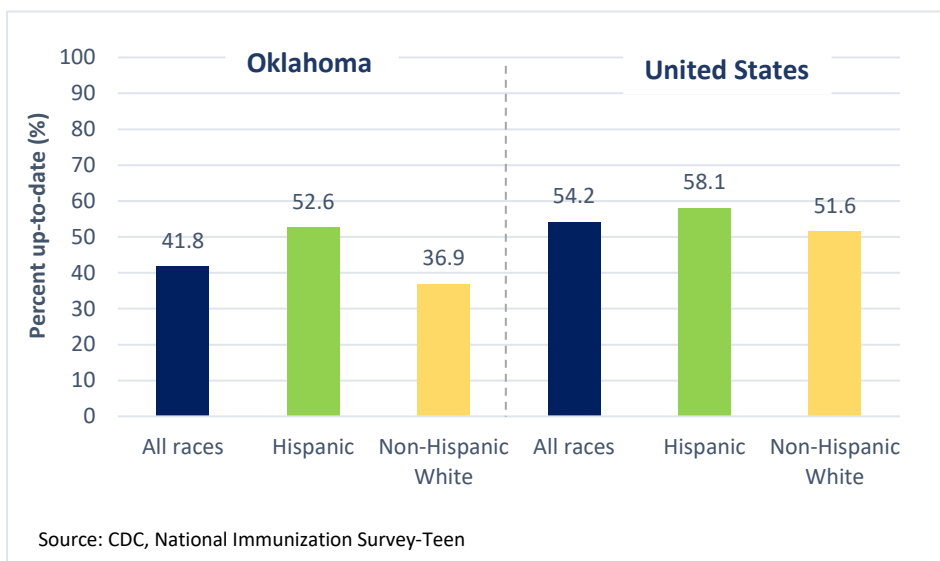


Figure 7 shows the percentage of adolescents ages 13-17 who received all recommended doses of the human papillomavirus (HPV) vaccine in 2019. Oklahoma adolescents of all races or ethnicities had lower rates than their counterparts in the US. However, the proportion of Hispanic adolescents in Oklahoma who were up-to-date on HPV was higher than for NHW adolescents in Oklahoma. Yet, compared to Hispanic adolescents in the US, Hispanic adolescents in Oklahoma had a lower proportion of being up-to-date with HPV vaccination.

Conclusions and Implications for Practice and Policy

In Oklahoma, the Hispanic population has lower cancer incidence and mortality rates than the NHW population overall and for most specific types of cancer. However, findings from this report demonstrate that there is a pressing need to address specific cancer types among this population, including liver and gynecologic cancers. Hispanic individuals are especially vulnerable to cancer inequalities because of disproportionate levels of poverty, a higher percentage of individuals who lack health insurance coverage, and other barriers to optimal health.³ Among patients aged 18 to 64 years who were diagnosed with cancer from 2014-2017, Hispanic individuals were more than twice as likely as NHW individuals to be uninsured.³ Additionally, social and cultural barriers to evidence-based cancer screening can lead to higher cancer incidence and mortality rates. Factors such as lack of knowledge and misconceptions, fear and stigma about cancer can lead to lower rates of cancer screening and avoidance of health care, and consequently lead to cancer disparities among the Hispanic population.^{4,5}

Timely receipt of evidence-based cancer screening can improve cancer outcomes. The Hispanic population lags other groups on breast cancer screening, and has alarmingly low rates of screening for colorectal cancer and prostate cancer. Patient demand for evidence-based cancer screenings could be increased by creating culturally tailored cancer education and awareness programs through partnerships with Hispanic communities across 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. Cancer screening also could be improved through programs that keep health care providers up-to-date with the latest cancer screening guidelines and gives them feedback on how frequently their patients are receiving appropriate screening tests.

Programs to reduce or eliminate financial barriers to high-quality cancer care are warranted. Financial concerns cause many individuals with symptoms to delay health care, which can be devastating in terms of cancer outcomes.⁶ Importantly, the expansion in 2021 of Medicaid coverage in Oklahoma for individuals between the ages of 19-64 through the Affordable Care Act will help reduce financial barriers to cancer-related preventive care for many low-income individuals in the state.

Clinical trials advance cancer treatment, so it is imperative that clinical trials enroll participants from diverse backgrounds. Funding for research should be directed in ways that ensure diversity among patients enrolled into cancer clinical trials. Also, funding should be directed towards research that aims to gain a better understanding of why some cancers, such as liver cancer and gynecological cancers, are particularly lethal among Hispanic patients.

These and additional actions are needed in order to achieve the ambitious, but worthy, goal of eliminating cancer disparities among the Hispanic population of Oklahoma.

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