It's Our Story to Write

Oklahoma Cancer Prevention and Control Plan
2017-2022

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Dear Fellow Oklahomans:

Cancer remains the second leading cause of death, affecting one out of three Oklahomans during their lifetime and disproportionately affecting some of the most vulnerable citizens. Cancer has touched nearly all our lives. Without much thought, you could likely recall a friend, neighbor, church member, or work associate who has battled the disease. Perhaps cancer has hit you much closer to home with a relative, spouse, or child being affected. You may be struggling with cancer yourself right now; perhaps you are a cancer survivor or you treat those who have a cancer diagnosis.

However, the good news is that participating in healthy behaviors increases the chance of living cancer free. Studies show people can greatly reduce the risk of cancer by choosing a healthier lifestyle, which not only reduces cancer risks but also increases the chances of survival if diagnosed. We must work together to collectively achieve a goal to save lives and reduce disparities in Oklahoma by ensuring the public can make the healthier choice, and by providing actionable health improving information. We can do this by building upon strong cancer prevention and control strategies through a collaboration, which leverages partnerships across government, academia, research, and business. Through collective impact, we can integrate cancer prevention and control into daily activities using awareness, knowledge, technology, and policy.

A team of Oklahoma professionals working in the cancer field has volunteered their expertise, experience, and leadership to revise and develop the second edition of the Oklahoma Cancer Prevention and Control Plan. This plan highlights the need for increased efforts focused on detecting cancers earlier, improving diagnosis and treatment, enhancing survivorship, and improving quality of life for cancer patients through palliative care.

In Oklahoma and throughout the U.S. chronic disease is a major cause of death and disability. Three behaviors (tobacco use, poor diet, and sedentary lifestyle) contribute to four chronic conditions (heart disease/stroke, cancer, diabetes, and lung disease). These four chronic conditions account for more than 60% of all deaths in Oklahoma annually. During the process of developing this plan, a vision emerged calling for broadening the challenge of preventing and controlling cancer to include partners working in other chronic disease fields like heart disease and diabetes. This vision of an Oklahoma Chronic Disease Alliance holds the potential for maximizing efforts by reducing costs, minimizing barriers, and enhancing outcomes to achieve a state of health, an Oklahoma free of chronic disease. It is a tremendous job to tackle the cancer epidemic. Together we can achieve this goal.

We invite you to bring life to the Oklahoma Cancer Prevention and Control Plan by focusing your efforts to reduce and eliminate cancer statewide.

Sincerely,

David Dude, BSN
American Cancer Society
OCCN Chair

Jennifer Roysdon, MS, TTS
Oklahoma Hospital Association
OCCN Co-Chair

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Executive Summary

The Oklahoma Comprehensive Cancer Network (OCCN) first met in 2004 to begin the plan for comprehensive cancer control in Oklahoma. The original network developed a plan that addressed goals through 2010. Since then, a new team with fresh ideas and commitment has come together with renewed energy and leadership.

The Oklahoma State Department of Health (OSDH), Oklahoma Health Care Authority (OHCA), Oklahoma Hospital Association, and American Cancer Society, along with various state and local organizations have joined forces to create a future for Oklahoma that is free from preventable cancer deaths and related health disparities.

This plan was developed to tell our unique story. While all people and cancers are important, we will focus our efforts on reducing the risk of cancer with increased Human Papillomavirus (HPV) vaccinations, decreased obesity, and decreased tobacco use rates. We will also focus on four priority cancer sites including breast, cervical, colorectal, and lung.

This is a dynamic plan that builds on the strength of Oklahoma, our people, and our stories. It is "**Our Story to Write**."

Guthrie, OK

"We must give Oklahoma families the opportunity to thrive and prosper. We must give all Oklahomans the tools necessary to pursue the American dream, and then we must get out of the way."

– Brad Henry, former Governor of Oklahoma

Introduction

Oklahoma is a land of great diversity that includes a population consisting of many racial and ethnic backgrounds living together. Oklahomans possess a fierce independence and share a variety of faiths and cultural practices.

With a total population of less than 4 million, approximately half of Oklahoma's population is concentrated in four areas with the remaining population residing in predominantly rural communities. Rich in resources such as oil and natural gas, Oklahoma has a terrain made for the farming and livestock industry and weather events that are extreme and prolonged.

When Rugged Beauty Creates Barriers

While such variety has created the fabric of the Oklahoma landscape, it has also contributed to lifestyles, which increase the risk for developing numerous chronic diseases including elevating cancer to the second leading cause of death.

Consistently ranking poorly in multiple key health status indicators, Oklahoma has a:

- high prevalence of smoking,
- limited availability of primary care physicians,
- high rate of preventable hospitalizations,
- high prevalence of obesity,
- low rate of fruit and vegetable intake, and
- low rate of physical activity.

Over half a million Oklahomans live in households that are food insecure, and nearly a quarter million live in households with "very low food security," meaning their eating patterns were disrupted and food intake was reduced because they couldn't afford enough food. [1] Due to this, Oklahomans face a high number of diet related chronic health problems such as obesity, heart disease and diabetes.

Food Deserts and Poor Health
Oklahoma Policy Institute

"The term 'food desert' is meant to describe an area without access to healthy and affordable food, but the best way to define that has been up for debate." [2]

Food deserts can develop because of limited access to land and high construction costs that push supermarkets to the suburbs, limiting access to those in the urban areas. They can also develop due to the difficulty in opening or maintaining a grocery store in rural areas due to decreasing populations.

Residents with limited access to healthy food often turn to 'empty calorie' foods with high sugar and fat content. Reliance on this kind of food can lead to obesity and diabetes, which are already at high rates in our state.

Educational programs and healthy eating campaigns that raise awareness of healthy eating habits are important to improve food choices.

Oklahoma has an obligation to ensure fundamental access to healthy food for all Oklahomans.

[1] Oklahoma Health Equity Campaign, Food Security and Health. Accessed at https://www.ok.gov/health2/documents/HERO-FOOD%20SECURITY%20and%20Health,%20FINAL.pdf on February 7, 2018.

Some of the contributing factors to food insecurity include:

- Low median income and high poverty experienced by Oklahomans,[2]
- A high density of fast food establishments and convenience stores in many communities,[1]
- Low access to nutritious foods and a lack of skills in selecting and preparing them,[1]
- Some of the least expensive foods are also the least nutritious, while most healthy foods are more expensive,[1] and
- A food desert is an area that does not readily have access to fresh, healthy, and affordable foods. In Oklahoma 40 of the 77 counties have food deserts of 50% or more with 7 of those 40 counties being 100% food deserts. [2]

Additionally, the U.S. Census' estimates indicate that 1 in 5 Oklahomans do not have health insurance coverage, which has contributed to a low rate of seeking preventative screening services. [3]

Chronic disease is the most common and costly of all health problems. Biology, environment, and social factors interact during an entire lifetime to influence health and disease later in life. Interventions focused on preventing or delaying chronic diseases across the continuum must be implemented with a long-term perspective and sustained effort. A person's risk of developing a chronic disease such as asthma, diabetes, cancer, heart disease, or stroke can be greatly reduced by avoiding tobacco use/exposure, being physically active, and eating well. These chronic diseases are not self-limiting but are ongoing over a long period of time. However, addressing individual behavior is not enough. The consequences of chronic disease are more common when regular medical care is absent. Access to affordable, quality health care (including screening, guideline adherence, and disease maintenance) saves lives, reduces disability, prevents hospitalizations, and lowers medical costs.

Known barriers make gaining access to the health care system and community care difficult. These barriers can create inequitable health outcomes and often impact certain populations (ex: rural, minority, lower income) more frequently than others. Three major types of barriers to the access to care (structural, financial, and personal/cultural) interact in complicated ways.

Structural barriers impede access to care. These barriers relate to the number, type, concentration, location, or organizational structure of health care providers. People who do not have a personal physician or health care provider most often rely upon local emergency rooms (ER) and hospital outpatient clinics for their care. Preventive care, such as annual screenings for chronic disease and continuity of care for a medical problem, is often missing when care is delivered in the ER or urgent care setting.

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[2] US Department of Agriculture, Economic Research Service, USDA - Food Access Research Atlas. 2015. Accessed at https://www.communitycommons.org/ on April 10, 2018.
[3] United States Census Bureau, QuickFacts: Oklahoma. Accessed at https://www.census.gov/quickfacts/fact/table/OK/PST045216 on March 15, 2018.

Finally, reliable, affordable transportation may be a barrier to accessing care or may delay seeking health care until the condition or disease will require advanced or higher cost medical response.

Just as Oklahoma's landscape has been changed by the strength of men and women who call her home, cancer will change the landscape of the lives it touches.

Fort Gibson Lake, Wagoner, OK

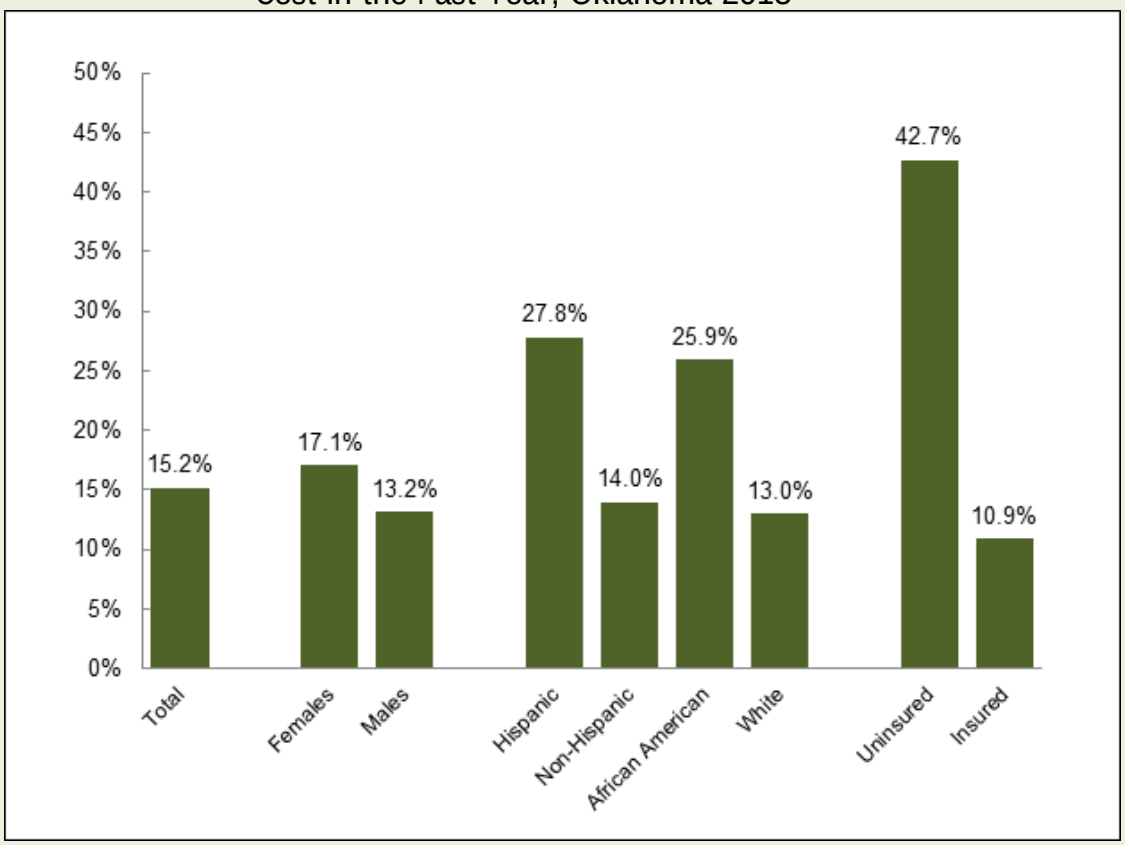
"Anything worth achieving will always have obstacles in the way and you've got to have that drive and determination to overcome those obstacles on route to whatever it is that you want to accomplish."

- Chuck Norris, Martial Artist,
Actor, Producer, Screenwriter, Oklahoman

Financial barriers restrict access to care, as shown in Figure 1. These barriers may inhibit the ability of an individual or group of individuals to pay for needed medical services. Individuals may delay seeking care because of the costs of services. The rise in the cost of health care has far outpaced the rise in income. The result is that it is virtually impossible for most people to pay directly for any sizable portion of their medical bills. Co-payments, eligibility, benefits limits, and underinsurance can be barriers for those who have insurance coverage. Financial barriers may also discourage

health care providers from providing certain services because the cost of providing a service is more than the reimbursement.

Figure 1. Percentage of Adults Who Could Not See a Doctor Because of the Cost in the Past Year, Oklahoma 2015



Data Source: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Accessed at http://www.health.state.ok.us/ok2share/ on January 16, 2018. Behavioral Risk Factor Surveillance System 2015, on Oklahoma Statistics on Health Available for Everyone (OK2Share).

Personal barriers may be related to culture or environment and may prevent people from seeking necessary care. These barriers may also discourage people from following recommended actions after treatment is obtained. Spoken and written language may also present a barrier to obtaining good health outcomes. Health literacy can affect the ability to locate health care providers, complete medical forms, follow treatment recommendations, and self-manage chronic diseases. Additionally, cultural barriers may stem from the health care providers' biases, beliefs, and behaviors. Ultimately, the culture of socially influenced behaviors, such as tobacco use and obesity, creates an environment that impacts the population's health and will continue to increase the need for more health care.

Modification to structural and/or financial barriers can compensate for some personal barriers. However, without improving the population's health, the ever-growing need for care will negatively impact our ability to remove barriers to care.

Chronic Disease Prevention and Health

While causing major limitations in daily living and leading to high costs of health care, the majority of chronic diseases are preventable. Preventing, reducing, and eliminating tobacco use, poor diet, and physical inactivity can prevent or delay disease onset or disease complications. Modifiable risk factors for some chronic diseases are not known; however, early detection through screening can promote treatment and lessen complications, disability, and risk of death.

Intervention strategies focused on common risk factors can prevent or delay multiple chronic diseases but must be implemented with a long-term perspective and sustained effort.

Chronic disease prevention and health promotion are rooted in the following:

- elimination of exposures to risks or modification of risk factors,
- early detection of clinical signs or chronic diseases in their earliest stages,
- the treatment and management of chronic diseases and their debilitating complications, and
- the intentional design of communities to make healthy choices the easy choice.

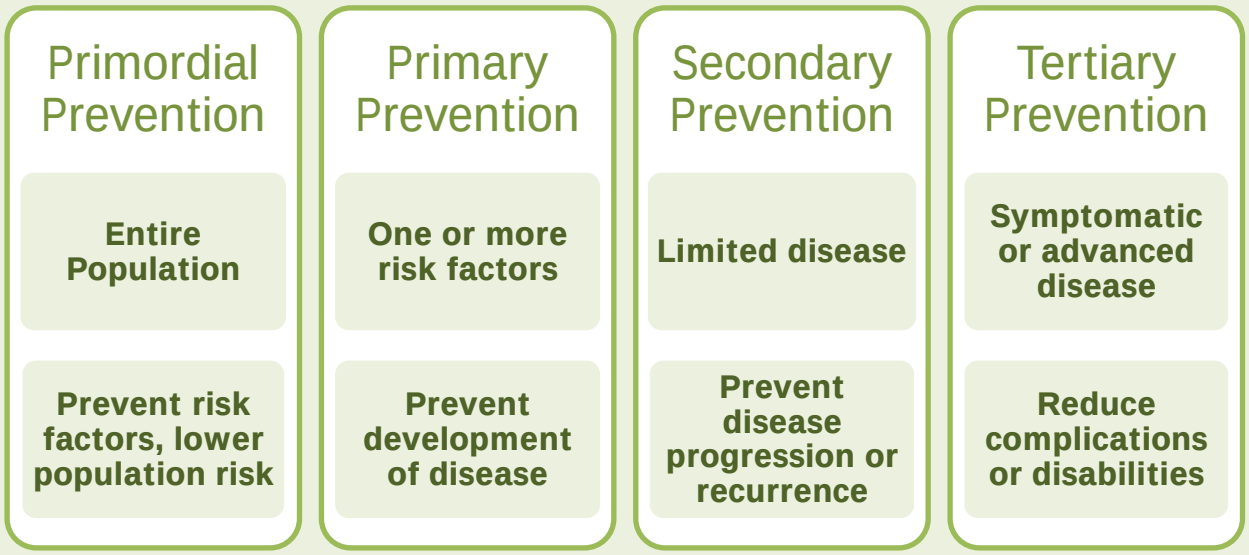
Sequoyah State Park, Wagoner, OK

"But there's the beauty of life beyond the bubble. It's possible for someone to see your wicked bits and still love you."

– Kristin Chenoweth,
Tony Award-winning actress, Oklahoman

The uniqueness of this schema is the addition of primordial prevention, which is health promotion among the entire population that is aimed at maintaining and broadening the health and well-being of the population (Figure 2). [4] The top row indicates the prevention strategy. The middle row indicates the population's disease status. The bottom row identifies the effects that would be expected. Working together, this coordinated approach to chronic disease will span the prevention spectrum.

Figure 2. Classification Schema for Chronic Disease Prevention and Control Methods



[4] Oklahoma State Plan for a Coordinated Approach to Chronic Disease Prevention and Health. Accessed at https://www.ok.gov/health2/documents/Coordinated%20State%20Plan_6_18_13.pdf on March 13, 2018.

Why Are We Doing This?

A comprehensive and coordinated approach in planning and continuing efforts focuses on the following facts:

- Persons are likely to have more than one chronic condition,
- Many chronic diseases have modifiable risk factors in common (tobacco use/exposure, physical inactivity, poor nutrition, and obesity),
- The same populations that are at risk for one chronic disease are often at risk for other chronic diseases,
- Identical intervention strategies can address multiple chronic diseases and risk factors,
- Chronic disease services and programs fulfill a public health role of the agency,
- Social determinants of health impact chronic disease conditions, and
- Prevention, detection, and treatment occur under systems that are not unique to one condition.

Comprehensive and coordinated approaches across programs, initiatives, and efforts are critical for reducing the burden of chronic disease. The approach lends to the prevention, delay, detection, and control of chronic diseases.

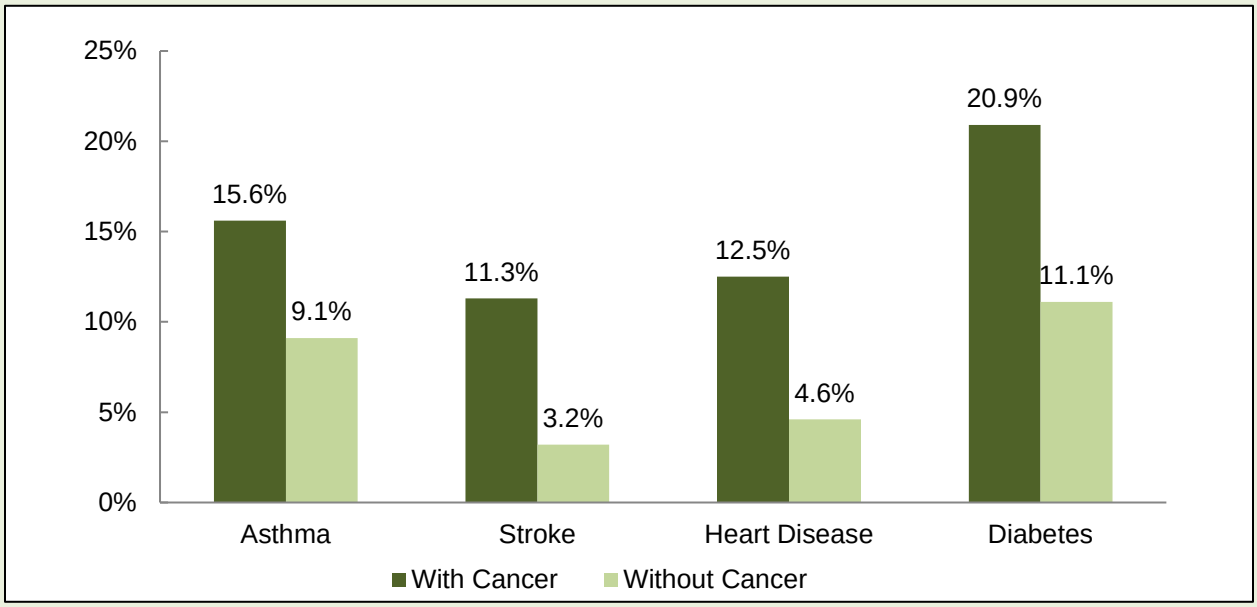
The Oklahoma Comprehensive Cancer Network (OCCN) proposes an approach for preventing and controlling cancer by bringing professionals and organizations fighting chronic diseases and conditions together to comprise the Oklahoma Chronic Disease Alliance (OCDA). The OCDA represents a shift away from a single agency, organization, or group of professionals focused solely on cancer to one of a unified desire to prevent and control cancer while partnering with colleagues pursuing the prevention and control of other leading chronic diseases in Oklahoma.

"We must work together to save lives and reduce disparities in Oklahoma by ensuring the public can make the healthier choice, and by providing actionable health improving information. We can do this by building on strong cancer prevention and control strategies through collaborations which leverage partnerships across government, academia, research, and business. Through collective effort we can integrate cancer prevention and control into daily activities using increased awareness, knowledge, technology, and policy initiatives."

-David Dude, BSN,
American Cancer Society

Figure 3 illustrates that Oklahomans report having both cancer and another chronic disease.

Figure 3. Percentage of Chronic Disease Among Those With and Without Cancer, Oklahoma 2015



Data source: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Accessed at http://www.health.state.ok.us/ok2share/ on January 16, 2018. Behavioral Risk Factor Surveillance System 2015, on Oklahoma Statistics on Health Available for Everyone (OK2Share).

By addressing multiple chronic diseases at the same time, patients will benefit from the more efficient dialogue focusing on barriers and challenges to achieving successful prevention, detection, diagnosis, treatment, and survivorship efforts. Such an approach would be built upon a foundation of open dialogue across multiple chronic disease disciplines, the adoption of evidence-based strategies, and the leveraging of state and local resources toward a seamless process of achieving plan goals and objectives.

What Is in This Plan?

The Oklahoma Cancer Prevention and Control Plan contains data to drive and support decisions. The plan utilizes the four chronic disease domains (Figure 4)[5] to inform practice, create measurable objectives and goals, and engage public health partners. The Oklahoma Cancer Prevention and Control Plan also contains strategies and incentives that focus on four priority areas: breast, cervical, colorectal, and lung.

Figure 4

[5] CDC Chronic Disease Domains. Accessed at https://www.cdc.gov/chronicdisease/resources/publications/four-domains.htm on April 25, 2018.

Oklahoma Cancer Burden Data

In order to identify priority cancers in Oklahoma, the Oklahoma Chronic Disease Alliance- OCCN reviewed Oklahoma cancer data. The OCCN made the decision to focus on screen-able cancers, treatment cost along with disease burden, and cancer with high age-adjusted incidence and mortality. The data review identified three-priority cancers to include lung, breast, and colorectal. Cervical cancer was identified as a priority area as most women receive breast cancer screening and cervical cancer screening during the same office visit.

Table 1. Cancers by Age-Adjusted Incidence and Mortality Rates for Specific Cancer Sites, Oklahoma 2015 and 2016

	AAIR (2015)	Number of Cases	AAMR (2016)	Number of Deaths
Lung	66.9	3,092	49.4	2,300
Female Breast	145.4	3,348	22.2	531
Cervical	8.5	164	2.5	55
Colorectal	41.8	1,844	16.8	752

Data Source: Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018. Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018. Data Note: AAIR= Age-Adjusted Incidence Rate per 100,000 population AAMR= Age-Adjusted Mortality Rate per 100,000 population; AAIR & AAMR for cervical cancer reflect per 100,000 women population.

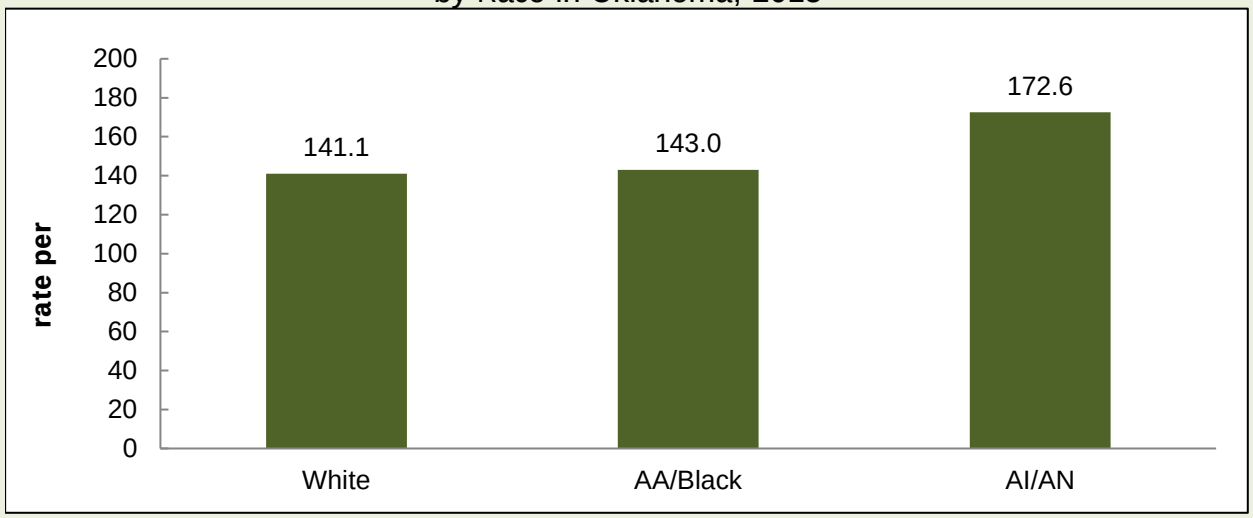
Age-Adjusted Incidence and Mortality Rates

Age adjusted incidence was obtained via queries conducted in the OK2SHARE database with the latest available data for 2015. The overall incidence of the target cancers was recorded along with gender and race-specific values. In order to address race misclassification, the Oklahoma Central Cancer Registry (OCCR) links the race-specific variable with the Indian Health Services (IHS) health surveillance database. The enhanced IHS linked race value was used to accurately describe the incidence rates in Oklahoma.

Age-Adjusted Incidence Rates

Breast

Figure 5. Female Age-Adjusted Cancer Incidence Rates for Breast by Race in Oklahoma, 2015



Data Source: Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018.

For cancer of the breast, the age-adjusted incidence rate for 2015 among Oklahoma women was 145.4/100,000 persons.

The rates of breast cancer differ by race, ethnicity, and age. African American (AA)/Black women and American Indian (AI)/Alaska Native (AN) women have a higher incidence of breast cancer in comparison to White and Hispanic women. [6]

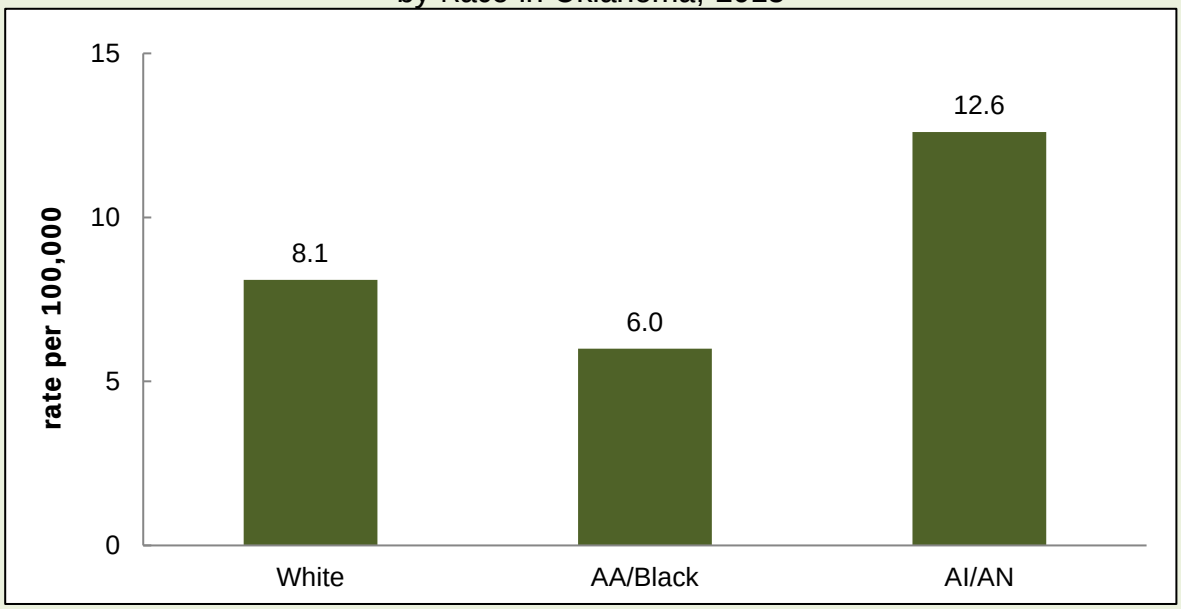
Oklahoma women under 70 years of age have a lower rate of breast cancer than the U.S., but Oklahoma women 70 years and older have a higher incidence than the U.S. [7]

[6] Oklahoma State Department of Health (OSDH), Disease, Prevention, & Preparedness Service, Chronic Disease Service, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018.

[7] Oklahoma State Department of Health (OSDH), Center for the Advancement of Wellness, Oklahoma Breast and Cervical Cancer Annual Report, State Fiscal Year 2017, accessed at https://www.ok.gov/health2/documents/Breast%20Cervical%20Cancer%20Annual%20Report%202017.pdf on March 8, 2018.

Cervical

Figure 6. Female Age Adjusted Cervical Cancer Incidence Rates by Race in Oklahoma, 2015



Data Source: Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018.

For cancer of the cervix, the age-adjusted incidence rate for 2015 among Oklahoma women was 8.5/100,000 persons.

According to the Centers for Disease Control and Prevention (CDC), Hispanic and African-American women have the highest rates of diagnosis and mortality from cervical cancer nationally.[8]

In Oklahoma, American Indian women face higher incidence rates for cervical cancer.[9]

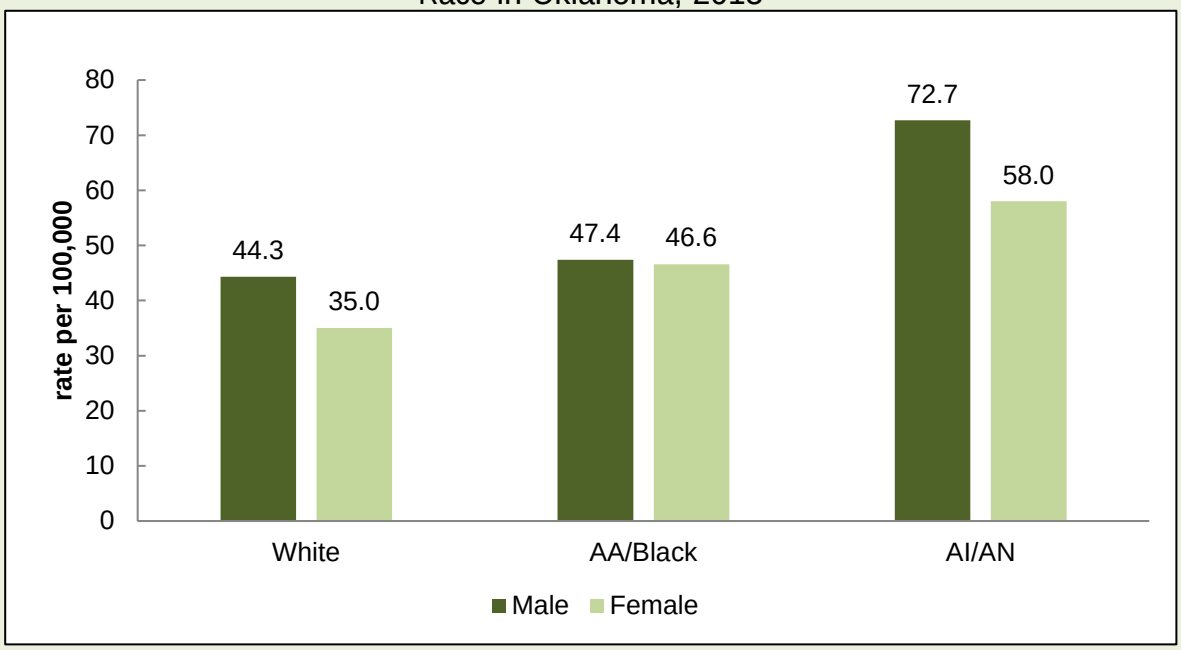
Getting the HPV vaccine and being screened as recommended can help.

[8] CDC Data Visualization Tool. Accessed at https://gis.cdc.gov/grasp/USCS/DataViz.html on March 3, 2018.

[9] Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Vital Statistics 2014, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on March 3, 2018.

Colorectal

Figure 7. Age-Adjusted Incidence Rates for Colorectal Cancer by Gender and Race in Oklahoma, 2015



Data Source: Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018.

For colorectal cancer, the total age-adjusted incidence rate for 2015 was 41.8/100,000 persons.

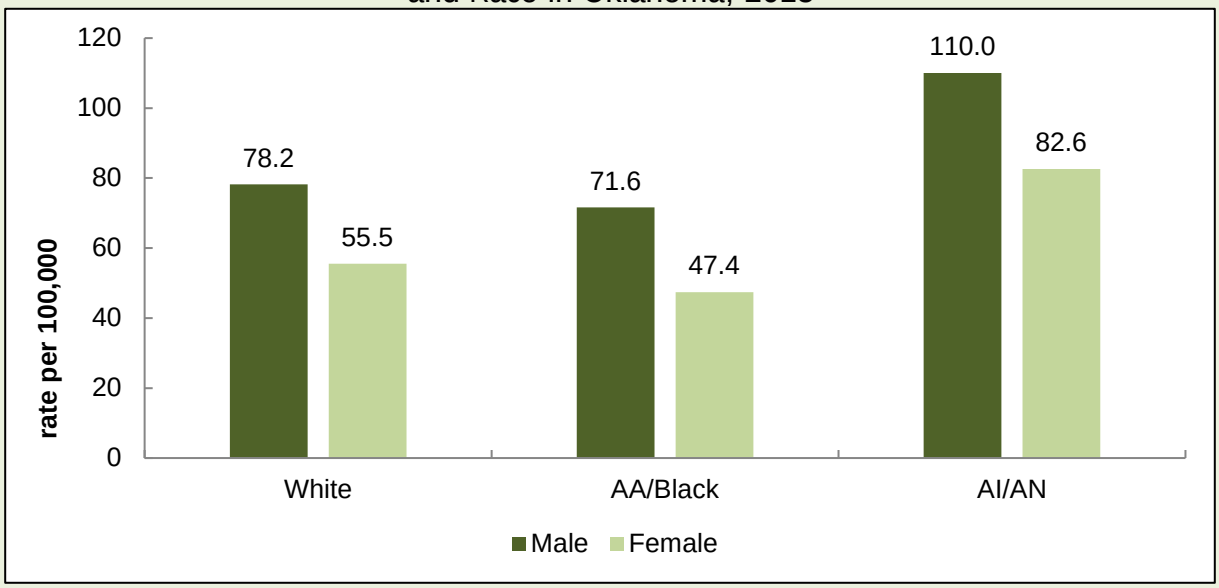
Colorectal cancer is the second leading cause of cancer death in the U.S. when men and women are combined. There is a considerable amount of suffering among more than 135,000 adults diagnosed with colorectal cancer each year.[10]

When adults get screened for colorectal cancer, it can be detected at an early stage where treatment is most likely to be successful; in some cases, it can be prevented through the detection and removal of precancerous polyps.

[10] Centers for Disease Control and Prevention, Colorectal Cancer Statistics. Accessed at https://www.cdc.gov/cancer/colorectal/statistics/index.htm on April 12, 2018.

Lung

Figure 8. Age-Adjusted Incidence Rates for Lung and Bronchus Cancer by Gender and Race in Oklahoma, 2015



Data Source: Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on January 10, 2018.

Cancer of the lung and bronchus had an overall incidence of 66.9/100,000 persons in 2015.

Race and socioeconomic status are known to influence lung cancer incidence and mortality in the U.S. Consequently, lung cancer incidence and mortality rates are higher among AA/Blacks than Whites.[11]

Higher incidence rates are linked to challenges such as:

- *locations of diagnostic and treatment facilities,*
- *lack of an understanding of lung cancer,*
- *lack of access to primary care,*
- *lack of insurance coverage for screening, and*
- *lack of familiarity of resources from cancer support organizations.* [11]

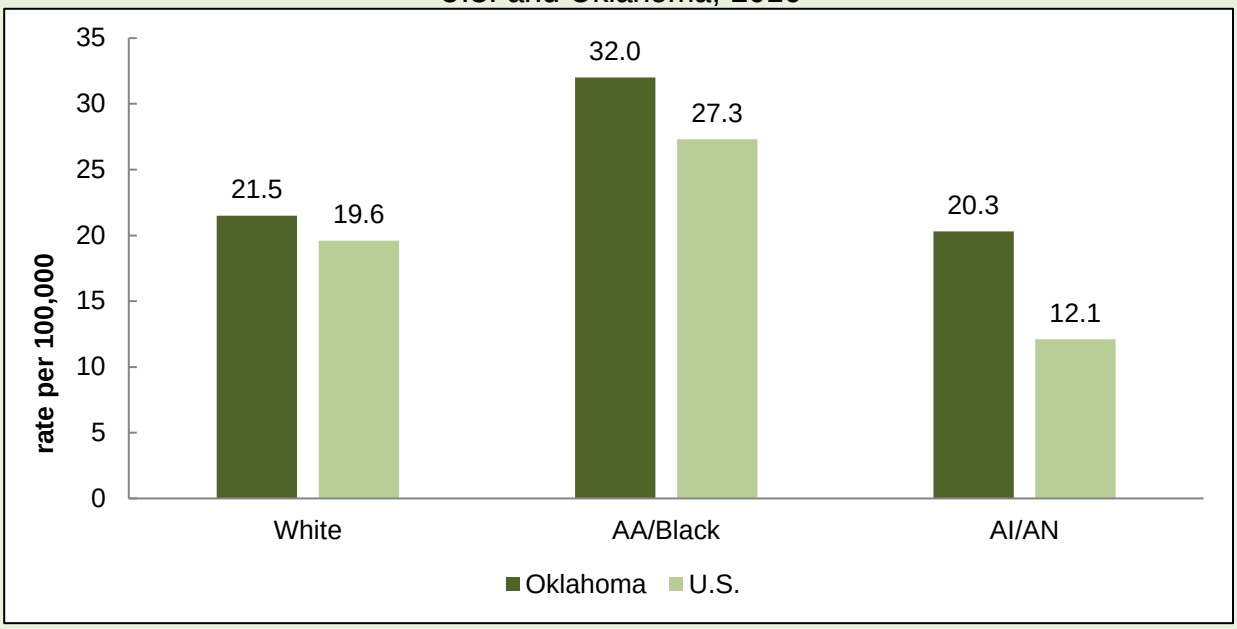
[11] Office of Minority Health, Cancer and African Americans. Accessed at https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=16 on April 18, 2018.

Age-adjusted Mortality Rates

Age-adjusted cancer mortality rates were obtained from the CDC Wonder database, with the latest data available for 2016. The overall incidence of the target cancers was recorded along with gender and race-specific values.

Breast

Figure 9. Age-Adjusted Mortality Rates for Breast Cancer by Race, U.S. and Oklahoma, 2016



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

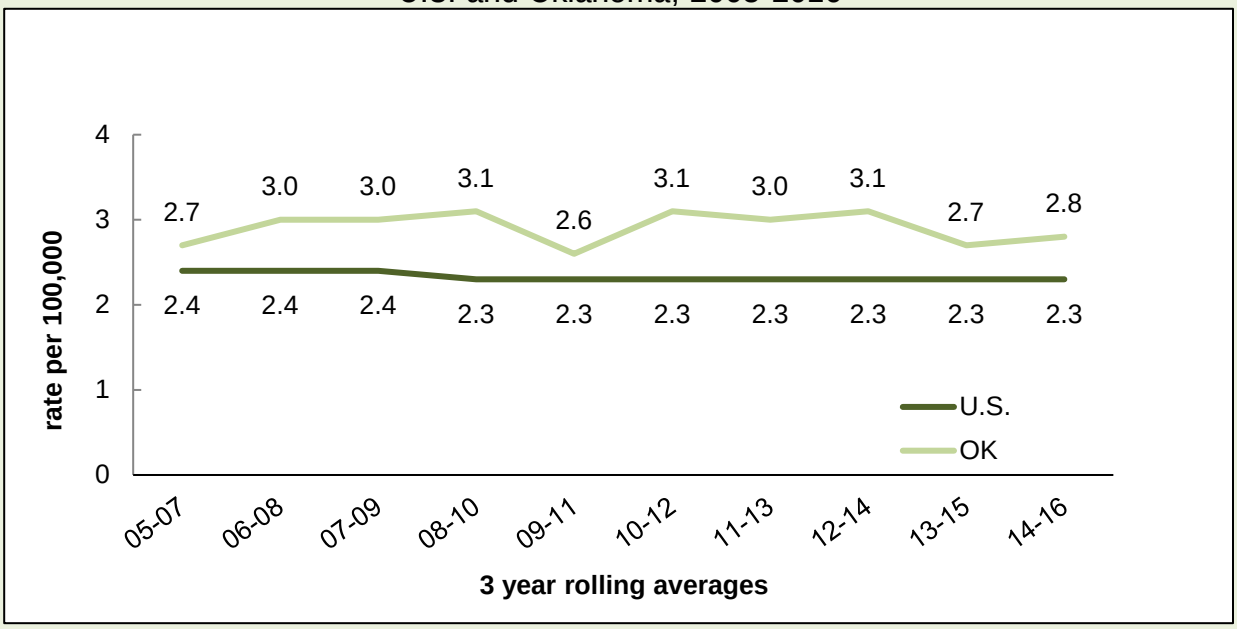
For cancer of the breast, the age-adjusted cancer mortality rate among Oklahoma women for 2016 was 22.2/100,000 persons which is higher than the U.S. rate at 20.1/100,000.

Breast cancer is the most frequently diagnosed cancer among Oklahoma women and is a leading cause of cancer death among women.[7]

African American women have the highest mortality rate of all racial and ethnic groups and are 40% more likely to die of breast cancer than white women.[11]

Cervical

Figure 10. Age-Adjusted Mortality Rates for Cervical Cancer, U.S. and Oklahoma, 2005-2016



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

For cancer of the cervix, the age-adjusted cancer mortality rate for 2016 among Oklahoma women was averaged over three years (2014-2016) at 2.8/100,000 persons which was higher than the U.S. rate at 2.3/100,000 persons. The majority of race data were suppressed due to small number of cases.

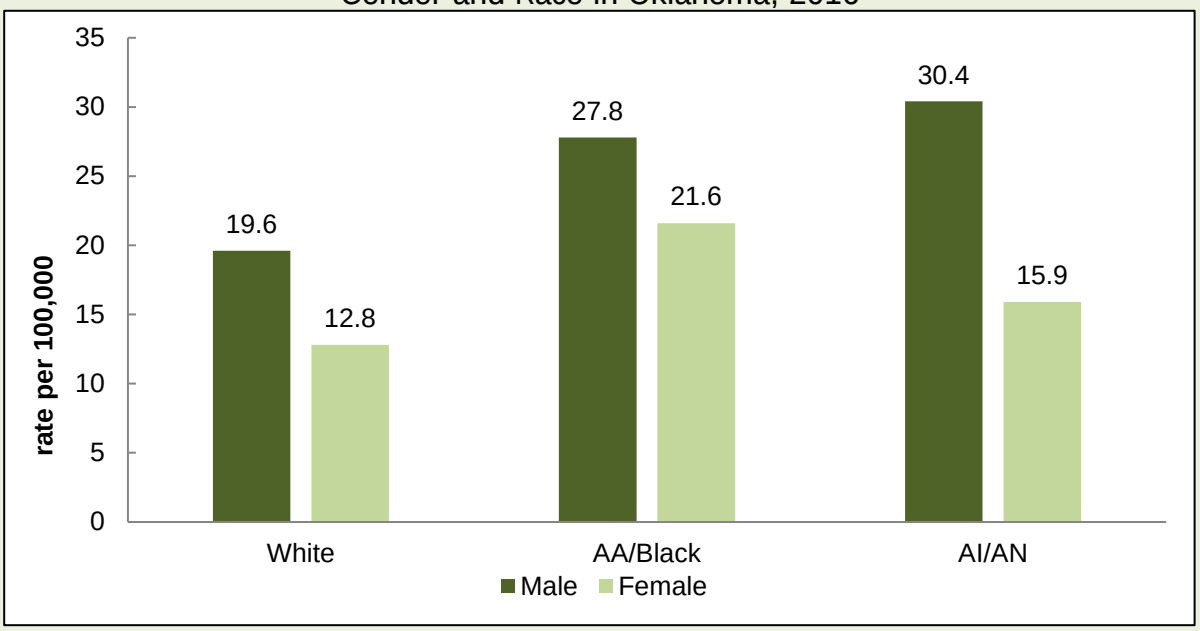
Cervical cancer is not a leading cause of cancer death among Oklahoma females; however, due to advanced detection and treatment, there is no longer a reason any woman should die from cervical cancer.[9]

There are steps that can reduce the risk of cervical cancer which include: getting screened, eliminating tobacco consumption, limiting the number of sexual partners, using condoms, and obtaining the Human Papillomavirus (HPV) vaccines if age appropriate.[12]

[12] American Cancer Society, Cervical Cancer, Accessed at http://www.cancer.org/cancer/cervicalcancer/detailedguide/index on February 15, 2018.

Colorectal

Figure 11. Age-Adjusted Mortality Rates for Colorectal Cancer by Gender and Race in Oklahoma, 2016



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

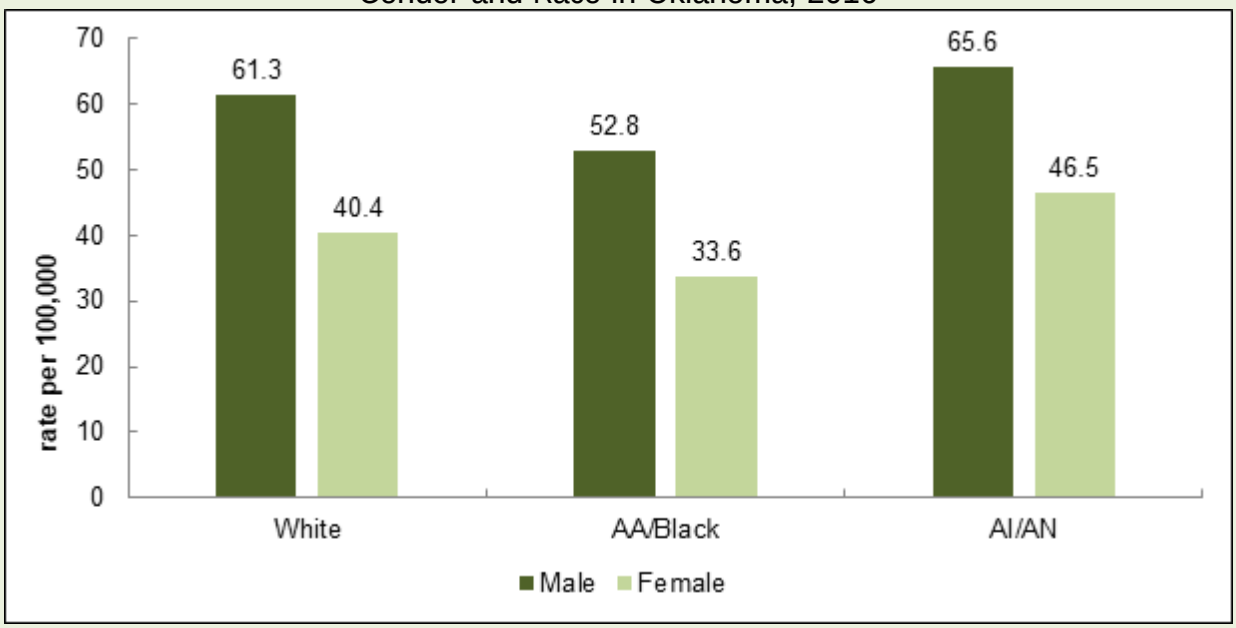
For colorectal cancer, the total age-adjusted cancer mortality rate for 2016 was 16.8/100,000 persons.

Colorectal cancer is the second leading cause of cancer death among cancers that affect both men and women.[10]

African Americans have the highest rates of diagnosis and mortality from colorectal cancer when compared to people of other races and ethnicities.[11]

Lung

Figure 12. Age-Adjusted Mortality Rates for Lung and Bronchus by Gender and Race in Oklahoma, 2016



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

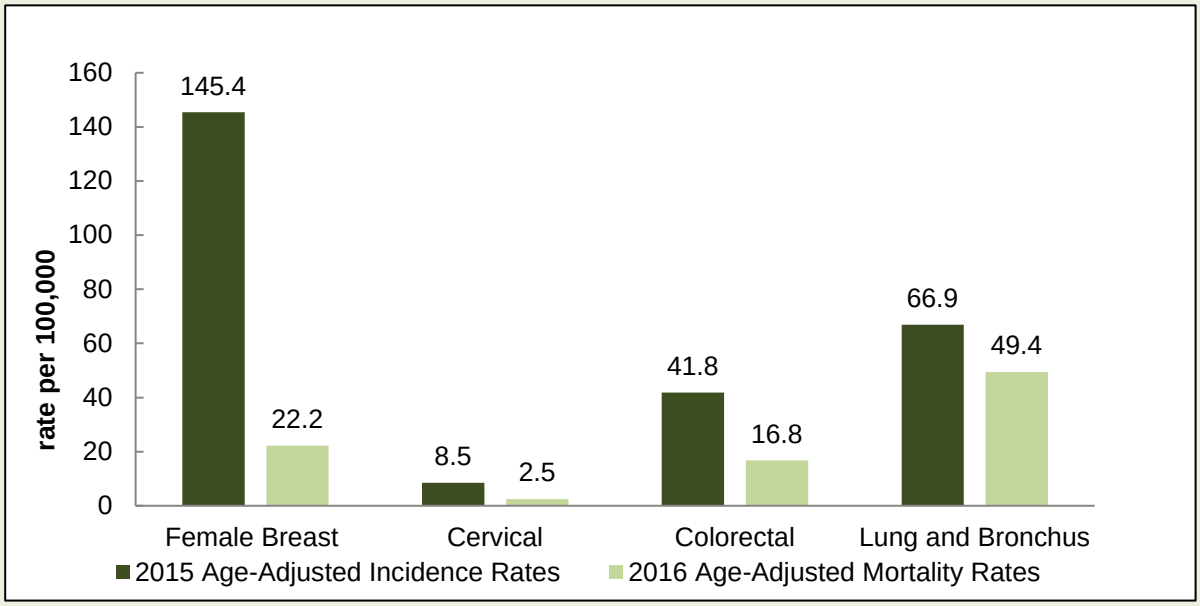
Cancer of the lung and bronchus had an overall age-adjusted mortality rate of 49.4/100,000 persons in 2016.

The 1982 United States Surgeon General's report stated that "Cigarette smoking is the major single cause of cancer mortality [death] in the United States." This statement is as true today as it was then, causing about 7,500 deaths in our state per year. [13]

" Smoking kills more people than alcohol, AIDS, car crashes, illegal drugs, murders, and suicides combined." [13]

[13] Campaign for Tobacco Free Kids. The Toll of Tobacco in Oklahoma. Accessed from https://www.tobaccofreekids.org/problem/toll-us/oklahoma on April 11, 2018.

Figure 13. Cancer Age-Adjusted Incidence and Mortality Rates, Oklahoma 2015 and 2016



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

Stillwater, OK

"Nothing can change me… You go through things. You don't change because things come in your life. You get better because things come in your life."

- Wayman Tisdale,
OU and NBA basketball player,
jazz musician, lost to cancer, Oklahoman

What Can You Do to Help?

The Oklahoma Comprehensive Cancer Network is an inclusive alliance for those who are concerned about and willing to work together to address our cancer burden. Anyone interested in collaborating to actively address the needs in this plan can contact the Comprehensive Cancer Control Program at the Oklahoma State Department of Health. Opportunities are available for anyone and are tailored to individuals and members of specific populations, health professionals, employers, schools, colleges/universities, local health departments, community coalitions, professional organizations, multicultural organizations, faith-based groups, and families.

Organizations working together can ensure that all Oklahomans have access to appropriate and cost-effective health care focused on promoting healthy behaviors, wellness, prevention and reducing risk factors for chronic disease.

Addressing cancer needs in Oklahoma requires the aligning of many individuals, agencies, and public and private organizations. While many health systems, health care professionals, and researchers are working to reduce Oklahoma's cancer burden, there are not enough resources to fully address this important health issue. Improvements must be made in the coordination of information, personnel, resources, and efforts among those working to fight cancer to maximize the ability to impact cancer prevention and control in Oklahoma. This will require developing relationships with public and private health care providers, private industry, and survivors of other chronic diseases or conditions (diabetes, cardiovascular disease, asthma, and stroke) to make the greatest collective impact on the prevention and control of cancer. A strengthened and focused position of partnership will provide the maximum benefit to people in their communities.

Call to Action: It's Our Story to Write

Health begins in our immediate environment, at home, school, work, and community. If we take care of ourselves by avoiding tobacco, maintaining a healthy weight, making good nutrition choices and staying active, we have a head start on health. These choices, along with getting the recommended vaccinations and routine health screenings can greatly improve our health outcomes.

Social Determinants of Health

Social determinants of health are conditions in the environments where people are born, live, learn, work, play, worship, and age. They affect a wide range of health, functioning, and quality of life outcomes and risks. Social, economic, and physical conditions in our various schools, workplaces, and residential environments affect our social interaction, sense of security, and well-being.[14] Resources that enhance our quality of life can have a significant influence on population health outcomes. These resources include safe and affordable housing, access to education, public safety, and availability of healthy food, local emergency/health services, and environments free of life-threatening toxins. [15,16]

Health Disparities and Cancer

Health disparities refer to differences in health between groups of people. These differences in health may be seen among people of various races and ethnicities, residents of rural areas, women, men, children, and adolescents, the elderly, people with disabilities, and the uninsured. [17]

Health disparities in cancer can be reduced by expanding access to cancer screening tests, high-quality treatment, and better follow-up after treatment, and by increasing awareness about healthy lifestyle choices that can lower the risk of getting or

[14] Social Determinants of Health. Accessed at https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health on February 7, 2018.

[15] Tulsa Health Department: Narrowing the Gap. Accessed at http://www.tulsa-health.org/sites/default/files/page_attachments/Life%20Expectancy%20Report.pdf on April 12, 2018.

[16] Averill, M. (2015, September). Life expectancy gap between ZIP codes in Tulsa County narrows. Accessed at http://www.tulsaworld.com/news/health/life-expectancy-gap-between-zip-codes-in-tulsa-county-narrows/article_ac6aa8b5-3163-5308-9b13-c6c32328dae1.html on April 12, 2018.

[17] Centers for Disease Control and Prevention, Health Disparities in Cancer. Accessed at https://www.cdc.gov/cancer/dcpc/resources/features/cancerhealthdisparities/index.htm on September 18, 2017.

Tulsa's Story

Every community has a unique story to tell. With a long, storied past, full of pride and heartache, Tulsa is no different.

During a 2003 summit, one participant exclaimed, "I don't know why we are meeting. We have the best health care in America right here in Tulsa, and this concern we have for the uninsured is not that big of a deal." Data provided by the OU College of Public Health told a different account.

Oklahoma was the only state where (at that time) health status had not improved for the last 25 years. Even more significant was the fact that there was a 14-year life expectancy difference between north and south Tulsa, in a distance of about 4 miles.

North Tulsa had few physicians and virtually no specialty care. There was also a lack of healthy food options and safe places for physical activity. [15]

Since 2003, "more than $46 million have been invested in at least five new or improved clinics and centers that offer more convenient and affordable access to residents with both economic and transportation challenges." These changes, along with other system and community efforts have narrowed the life expectancy gap from 13.8 to 10.7 years. [16]

having cancer come back. Additionally, social and economic factors which impact health, such as poorer housing, education, and lack of transportation can affect health disparities in cancer.

Behavioral Health and Cancer

Oklahomans dealing with behavioral health issues are another population that can get lost in the health care environment. According to the National Behavioral Health Network for Tobacco and Cancer Control:

- More than 50% of patients with terminal cancer have at least one psychiatric disorder. [18]
- Individuals with a mental illness may develop cancer at a 2.6 times higher rate on account of late stage diagnosis and inadequate treatment and screenings.[10]

Patients with behavioral health disorders are frequently hesitant to discuss their behavioral health issues with their primary care providers or other specialty care providers. They tend to see the health field as compartmentalized which can undermine the effectiveness of cancer care for those who need it. Because of this, those with serious mental illnesses have poorer outcomes following a cancer diagnosis. [19]

To address this and other chronic disease issues, the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) has partnered with the OHCA to expand upon the patient-centered medical home model and existing behavioral health case management and system of care infrastructure to provide coordinated primary and behavioral health integration. [20] The OCCN has a vested interest in this partnership and will offer ongoing support as needed. Regardless of social determinants, access to care and other risks, we must keep in mind that while we can reduce our risk, we cannot prevent all cancers completely.

[18] National Behavioral Health Network Tobacco Cancer Control. Accessed at http://www.thenationalcouncil.org/consulting-best-practices/national-behavioral-health-network-tobacco-cancer-control/ on February 7, 2018.
[19] The Lesser Discussed Killer Cancer. Accessed at http://www.thenationalcouncil.org/lesser-discussed-killer-cancer on February 7, 2018.
[20] Oklahoma Health Homes Learning Collaborative. Accessed at https://www.ok.gov/odmhsas/Mental_Health_/Oklahoma_Health_Homes_Learning_Collaborative/ on February 7, 2018.

Cancer Doesn't Discriminate

You can make healthy lifestyle choices to reduce your risk such as eliminating tobacco use, being physically active, and making healthy food choices. You can also have access to resources such as good health insurance and routine screening. But since we cannot fully prevent all cancers, it can still be a part of many families' stories.

Families like the Watkins.

Larry Watkins called their family's cancer story "lightning strikes" due to the aggressive nature of the cancers and the lack of family history or risk. They also call it an opportunity to grow as a family; to grow together in strength and character.

Donna Watkins fought breast cancer for 2 years before it took her life. Larry fought colon cancer for 3 years before it took his life.

Whatever they call it, there is another chapter to write.

Cancer Doesn't Discriminate: Jennifer (Watkins) Roysdon

My mom, Donna, was the picture of health. She led an active lifestyle in the country, caring for our land and animals. She ate food that was grown in my grandparent's garden and never used tobacco. Living less than an hour away from Oklahoma City, she had good health insurance and access to the best health care. Still, in 1987, at the age of 41, she was diagnosed with breast cancer. Just two short years later, on July 4, 1989 at the age of 43, she was gone.

My dad, Larry, was also the picture of health. Aside from having a stressful job, he was physically active and ate well. He had the best health care, getting routine physical exams and screenings, and excellent financial resources. But in 2013, at 66, he was diagnosed with Stage 3 colon cancer, despite having routine colonoscopies.

At 68, after a year in remission, he was diagnosed again, this time with Stage 4 colon cancer.

November 29, 2016, at the age of 70, days after his cancer spread to his brain, he lost his fight.

Programs and Resources in Cancer Prevention and Control

The Center for the Advancement of Wellness

The Center for the Advancement of Wellness (the Center) at the Oklahoma State Department of Health works to reduce obesity and tobacco use in Oklahoma by working with communities, workplaces, schools, and other groups to enact policy, environmental, systems and social norm changes. The Center's staff members serve as content specialists in the areas of tobacco control, physical activity, and nutrition.

The Center also houses the state's chronic disease prevention programs including cancer, diabetes and heart disease. This service area unifies chronic disease prevention efforts and create efficiencies in delivering programs.

Comprehensive Cancer Control Program

Comprehensive Cancer Control (CCC) is a process through which communities and partner organizations pool resources to reduce the burden of cancer. These combined efforts help to—

- reduce cancer risk,
- find cancers sooner,
- make treatments better, and
- increase the number of people who survive cancer.

Oklahoma Central Cancer Registry

The Oklahoma Central Cancer Registry (OCCR) is the central database of information on all cancers diagnosed or treated in Oklahoma since January 1, 1997. The statewide registry enables researchers, policymakers, and consumers to obtain incidence data. In addition, the information allows both private and public health agencies to study cancer trends and develop cancer prevention and/or control programs based on data. The OCCR has received the gold certification from the North American Association of Central Cancer Registries (NAACCR). This certification is based on quality, completeness and timeliness of data collected for 1997-2014.

Breast and Cervical Cancer Early Detection Programs

Oklahoma has three Breast and Cervical Cancer Early Detection Programs (BCCEDPs): Cherokee Nation Breast and Cervical Cancer Early Detection Program, Kaw Nation Women's Health Program, and OSDH's Take Charge! Program. These three screening programs receive funding through a cooperative agreement with the CDC. At least 60% of the funds are for direct services. Support services such as health education and data collection constitute up to 40% of the funds. No more than 10% of the funds for support services can be used for administrative costs. Funds from the CDC cooperative agreement cannot be used for treatment.

The screening programs serve low-income, uninsured, and underinsured women. The screening programs provide access to breast and cervical cancer screening services including a clinical breast exam, mammogram, pelvic examination, Pap test and HPV co-testing as appropriate. The purpose is to facilitate earlier screening, ensure prompt diagnosis, and improve access to treatment for breast and cervical cancer. The three screening programs work in partnership with each other to ensure Oklahoma women are enrolled in the screening program that best fits their needs. The programs often promote all screening programs together on small media products.

Women with abnormal findings on breast and/or cervical cancer screening examinations receive a referral and access to diagnostic services. The three screening programs encourage women in need of diagnostic or treatment services to apply for Oklahoma Cares (SoonerCare Medicaid program). The Cherokee Nation BCCEDP will often provide diagnostic services for women that are screened regardless of their eligibility for Oklahoma Cares. Take Charge! provides diagnostic services for women that are screened through the program and are ineligible for Oklahoma Cares.

"My ability to survive personal crises is really a mark of the character of my people. We must react with a tenacity that allows us again and again to bounce back from adversity."

– Wilma Mankiller, former Principle Chief of the Cherokee Nation, Lost to Cancer, Oklahoman

Robbers Cave, Wilburton, OK

Oklahoma Cares (Breast and Cervical Cancer Treatment Program)

In January 2005, the State of Oklahoma began providing Medicaid benefits to uninsured women under 65, who have been identified through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and are in need of treatment for breast or cervical cancer.

Oklahoma Cares is a partnership of the OSDH, the OHCA, the Cherokee Nation, the Kaw Nation of Oklahoma, and the Oklahoma Department of Human Services (OKDHS) to provide treatment for breast and cervical cancer and pre-cancerous conditions to eligible women. Oklahoma Cares was established as a result of the National Breast and Cervical Cancer Prevention and Treatment Act of 2000.

Services through Oklahoma Cares:

- Breast and cervical cancer and pre-cancer diagnosis and treatment,
- Medicaid coverage that includes the full range of services (not only cancer treatment), and
- Medicaid eligibility continues until the woman is no longer in need of breast or cervical cancer treatment.

Oklahoma Tobacco Research Center (OTRC)

Created in 2008 with Tobacco Settlement Endowment Trust (TSET) funding, the mission of the OTRC is to reduce, and ultimately eliminate, tobacco-related morbidity and mortality in Oklahoma through research that informs interventions and policies with a particular emphasis on addressing tobacco-related health disparities. The OTRC faculty are conducting federally funded research that is helping to move the Stephenson Cancer Center closer to earning designation status from the National Cancer Institute (NCI), which will open the door to significant external resources to support cancer research.

Tobacco Settlement Endowment Trust Cancer Research Program (OTCRP)

The mission of the OTCRP is to decrease the burden of cancer by promoting, coordinating and supporting innovative cancer research. It was established in 2011 and funded with a five-year, $30 million grant. The grant was renewed in 2015 for $20 million over the next 5 years. The OTCRP supports TSET Phase I Clinical Trials Program at the Stephenson Cancer Center, recruits scientists to Oklahoma, awards research grants to Oklahoma scientists, and leverages funds to advance behavioral and cessation research in Oklahoma.

Stephenson Cancer Center at the University of Oklahoma

The Stephenson Cancer Center at the University of Oklahoma (OU) is Oklahoma's only comprehensive academic cancer center. As a nationally recognized leader in research and patient care, Oklahomans no longer need to travel out of state to receive state-of-the-art clinical care.

The experts at the Stephenson Cancer Center are exploring new treatments and breakthroughs with advanced research and clinical trials right here at home. The cancer care teams focus on treating people, not patients.

The Stephenson Cancer Center has also recently received recognition as an NCI designated Comprehensive Cancer Center.

Clinical Trials Program

The Stephenson Cancer Center is a nationally-recognized leader in conducting clinical trials research for new cancer therapies. The Stephenson Cancer Center annually ranks among the top three cancer centers in the nation for the number of patients participating in NCI-sponsored clinical treatment trials and is one of 30 designated lead centers nationally in the Institute's National Clinical Trials Network.

In collaboration with the TSET, the Stephenson Cancer Center is decreasing the burden of cancer in Oklahoma by supporting innovative laboratory, clinical and populations-based research.

The Stephenson Cancer Center has 250 research members who are conducting more than 215 cancer research projects at multiple institutions across Oklahoma. This research is supported by $48.3 million in annual funding from the NCI, the American Cancer Society (ACS) and other sponsors.

"If we cannot count on ourselves to do the right thing, how can we count on anyone or anything else? Self-government won't work without self-discipline."

- Paul Harvey,
Radio Broadcaster and Commentator,
Cancer Caregiver, Oklahoman

Seward, OK

"It's great to be home. As long as I've got that red dirt under my feet, I feel pretty good."

-Vince Gill,
Country Musician,
Singer-Songwriter,
Oklahoman

Mulhall-Orlando, OK

The Cancer Control Continuum				
Risk Reduction	Human Papillomavirus (HPV) Vaccines			
Risk Reduction	Obesity (Physical Activity and Nutrition)			
Risk Reduction	Tobacco			
FOCUS				
	Breast	Cervical		Lung
Prevention / Risk Factors	Healthy Nutrition Limit Alcohol Avoid Tobacco	HPV Vaccines	Healthy Nutrition Limit Alcohol Avoid Tobacco	Avoid Tobacco and Environmental Smoke
Early Detection	Mammogram Breast Ultrasound Breast Magnetic Resonance Imaging (MRI) Clinical Breast Exam	Pap Smear	Fecal Occult Blood Test (FOBT) Sigmoidoscopy Colonoscopy	Low-dose computed tomography
Diagnosis	Breast Biopsy	Colposcopy Cervical Biopsy	FOBT Sigmoidoscopy Colonoscopy	Imaging Tests Needle Biopsy
Treatment	The most common types of cancer treatment include: • Surgery • Radiation • Chemotherapy • Targeted Therapy			
Crosscutting Issues				
Communication	Use health campaigns to promote healthy lifestyle changes and increased patient personal health advocacy.			
Health Disparities	Numerous factors contribute to the complexity of disparate populations. Communities can identify themselves based on the issues that concern them. Increased engagement with these communities will improve cancer actions and outcomes.			
Patient Centered Care Coordination	Increase patient empowerment and patient-centered communication throughout the cancer continuum.			
Policy	Public interventions or changes that transform circumstances to improve access to health care and environments.			
Surveillance	Utilize data to make informed decisions about patient care and public health initiatives to include a clear understanding of the effects of co-morbidities and management of cancer.			
Survivorship	Assure that quality of life resources are available throughout the cancer continuum.			
Technology	Electronic Health (or Medical) Records (EHR/EMR) use to increase compliance for routine screening and improved communication between providers.			

Risk Reduction

Orlando, OK

"Everyone tried to define this thing called Character. It's not hard. Character is doing what's right when nobody's looking."
- J.C. Watts,
former U.S. Representative
in the majority leadership,
OU Sooners Quarterback, Oklahoman

"Many cancer deaths could be prevented by following a balanced diet, staying physically active, eliminating tobacco use, following routine cancer screening recommendations, obtaining preventative vaccinations, and avoiding exposure to the sun or indoor tanning devices."
-David Dude,
American Cancer Society

Risk Reduction: HPV Vaccine

Key Facts

According to the CDC, approximately 1 in 4, or 79 million, Americans are infected with HPV. Every year, nationally over 27,000 women and men are affected by a cancer caused by HPV – that's a new case every 20 minutes. [21]

HPV is a group of over 150 related viruses which is broken down by type or strain. HPV is transmitted through intimate skin-to-skin contact. HPV is very common, and nearly all sexually active individuals have HPV at some point in their life. It can be spread with no signs or symptoms, and many people with HPV are unaware they are infected. HPV can also develop years after having sex with someone who is infected. [22]

There is no cure or treatment for HPV, and most of the time it goes away on its own. Still, some types of HPV infection (16, 18, 31, 33 and 45) cause cervical cancer and other types of cancer including vulva, vagina, penis, anus, and oropharyngeal cancer. [23]

Dr. Joan Walker
University of Oklahoma Health Sciences Center
Oklahoma City, OK

In Oklahoma, 150 to 200 women are diagnosed with cervical cancer and another 50-80 women die from cervical cancer annually. Since almost all cervical cancers are caused by HPV, it is time to do something about our vaccination rates.

The CDC recommends an HPV vaccination rate of 80%. For every year that rate is not achieved, more Oklahoma women will develop cervical cancer and be at risk of dying from this disease.

Primary and secondary prevention is almost 100% protective against cervical cancer, and yet Oklahomans are unaware of the prevention opportunities, unaware of their risk of HPV related cancers, or assume it is unaffordable or unavailable to them.

There is no general test for HPV infection, but there are several HPV tests that are used in conjunction with cervical cancer screening. Almost all cervical cancers are caused by HPV. It is important to note that cervical cancer can be prevented by HPV vaccination and risk reduction. Lack of routine Pap tests, tobacco use, and a history of multiple sexual partners are also risk factors for the development of cervical cancer. [24]

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[21] Centers for Disease Control and Prevention, HPV Vaccines, Vaccinating your Preteen or Teen, Assessed at http://www.cdc.gov/hpv/parents/vaccine.html on February 7, 2018.

[22] Centers for Disease Control and Prevention, What is HPV? Accessed at http://www.cdc.gov/hpv/parents/whatishpv.html , on February 28, 2018.

[23] Centers for Disease Control and Prevention, Human Papillomavirus (HPV), The Link Between HPV and Cancer, Accessed at http://www.cdc.gov/hpv/parents/cancer.html on February 7, 2018.

[24] Centers for Disease Control and Prevention, Human Papillomavirus (HPV), Accessed at http://www.cdc.gov/std/hpv/default.htm on February 7, 2018.

To reduce the incidence of cervical cancer and HPV in the population as a whole, the CDC recommends all girls and boys who are 11 or 12 years old should get the recommended series of HPV vaccine. The vaccination series can be started as early as age 9. The CDC recommends that 9-14 years old should have two HPV vaccine doses while teens and young adults still need three doses of HPV vaccine. Three doses are still recommended for people with certain immunocompromising conditions aged 9 – 26 years. [25]

Studies have shown that a strong, clear recommendation from a health care provider is associated with HPV vaccination. [26]

Data

According to the 2016 CDC National Immunization Survey, nationally, 65.1% of females ages 13-17 have received one or more doses of HPV vaccine and 49.5% have completed the entire course.[20] In Oklahoma, 63.8% of females ages 13-17 received one or more dose of HPV vaccine, which is slightly lower than the national percentage. Of note, only 43.6% Oklahoma females ages 13-17 completed the entire course, which is also lower than the national percentage. [17]

Nationally, among males ages 13-17, 56.0% have received one or more doses of HPV vaccine, and 37.5% have completed the entire course.[20] In Oklahoma, 50.3% have received one or more doses of HPV vaccine; while 35.0% have completed the entire course, which are both lower than the national percentage. [17]

Lead Organization

- Oklahoma Health Care Authority
- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Increase the number of Oklahoma females and males who receive the HPV vaccine in accordance with the National Advisory Committee on Immunization Practices (ACIP) recommendations.

Measurement

Baseline Data Oklahoma, 2016

- 63.8% of females aged 13-17 received one or more dose of HPV vaccine
- 43.6% of females aged 13-17 completed the entire course of HPV vaccine
- 50.3% of males ages 13-17 received one or more doses of HPV vaccine
- 35.0% of males aged 13-17 completed the entire course of HPV vaccine

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[25] Centers for Disease Control and Prevention, Human Papillomavirus (HPV) Infection, Accessed at https://www.cdc.gov/std/tg2015/hpv.htm on April 4, 2018.

[26] Walker TY, Elam-Evans LD, Singleton JA, et al. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2016. MMWR Morb Mortal Wkly Rep 2017;66:874–882. DOI: http://dx.doi.org/10.15585/mmwr.mm6633a2. Accessed on April 12, 2018.

Targets by 2022

- Increase to 80.6% the number of females aged 13-17 who complete the entire course of HPV vaccine
- Increase to 87.0% the number of males aged 13-17 who complete the entire course of HPV vaccine

Initiatives and Strategies

1. Increase knowledge of parents regarding accurate and effective use of HPV vaccine.

a. Engage community-based organizations and faith-based organizations to implement a comprehensive, innovative, culturally appropriate cervical cancer communications campaign program targeted at all parents of young children to help them to understand the importance of HPV vaccination.

2. Increase HPV vaccination rates for Oklahoma males and females.

a. Facilitate legislation to require HPV vaccine for all Oklahoma females and males in accordance with the recommended guidelines similar to other required and recommended childhood and adolescent vaccinations.

3. Increase cervical cancer screenings that include HPV testing.

a. Coordinate and collaborate with health care providers to increase cervical cancer screenings that include HPV testing utilizing the current U.S. Preventive Services Task Force Guidelines in geographic areas of high cervical cancer incidence and mortality.

4. Develop patient navigation system to facilitate access to care for women diagnosed with cervical cancer in a timely fashion.

a. Coordinate with health care systems to encourage participation with electronic health records and obtain data sharing agreements.

Risk Reduction: Obesity (Physical Activity and Nutrition)

Key Facts

Obesity has been linked to an increased risk of 13 different cancers and is estimated to contribute to approximately 40% of new cases of cancer (nationwide) each year. Obesity has also been linked to poorer survival rates, while increased physical activity has been associated with increased survival. [27]

Data

In 2016, Oklahoma's adult obesity rate was 32.8%, the 9th highest in the nation. Our adolescent rate in 2017 was 17.1%. [28]

Lead Organization(s)

- Oklahoma State Department of Health, Center for the Advancement of Wellness;
- Tobacco Settlement Endowment Trust

Objective

Reduce adolescent and adult obesity prevalence.

America's HEALTHIEST Campus, Stillwater, OK

Sharing her love for good health and physical fitness, Ann Hargis is committed to health and wellness and makes it a priority in her life. She has taken a leadership role in OSU's wellness efforts and the university's position as America's **HEALTHIEST** Campus.®

Wellness programming has increased under the leadership of Pres. and Mrs. Hargis. In 2008, Oklahoma State University (OSU) was the first Big 12 and state-funded university in Oklahoma to become a tobacco-free campus. While programming in wellness has traditionally focused on physical activity and nutrition, the university hired the nation's first dedicated, system-wide Chief Wellness Officer, while expanding emotional health services, creating OSU's Pet Therapy Program.

Ann believes the benefits of wellness are to find purpose, to live a life of vitality, happiness and meaning. "The life choices we make directly impact how we are able to live our lives.

OSU is committed to helping the entire campus population learn, understand and practice the benefits of wellness.[30]

[27] Cancer and Obesity. Accessed at https://www.cdc.gov/vitalsigns/obesity-cancer/ on April 12, 2018.
[28] Behavioral Risk Factor Surveillance System 2016

Measurement

Baseline Data Oklahoma

- 17.1% (2017) - Adolescent (high school) obesity prevalence
- 32.8% (2016) - Adult obesity prevalence

Targets by 2022

- Reduce adolescent obesity prevalence to 15.3%
- Reduce adult obesity prevalence 29.5%
- Increase the percent of adults who participated in 150 minutes or more of aerobic physical activity per week to 51.3%
- Increase adult median intake of fruits per day to 1.3
- Increase adult median intake of vegetables per day to 2.1
- Increase the percentage of adolescents who ate fruit or drank 100% fruit juices two or more times daily in the past 7 days to 22.4%
- Increase percentage of adolescents who ate vegetables three or more times daily in past 7 days to 10.3%

Initiatives and Strategies

1. Increase the percentage of the population that has participated in physical activity.

a. Develop and maintain a scalable Health in All Policies-based partnership [29] framework to address obesity through the targeting of contributing social determinants of health and reducing disparities throughout the state of Oklahoma.

b. Build capacity related to evidence-based and promising practices connected with addressing obesity and implementing Health in All Policy models/approaches (OSU). [30]

c. Create a community asset mapping process to identify and monitor obesity reduction efforts currently in place for determining gaps and opportunities to supplement local obesity efforts.

d. Utilize current surveillance and evaluation systems to collect readily available data and house in a central database.

e. Communicate with non-traditional partners to determine applicable work that addresses obesity-related social determinants of health for inclusion in the statewide obesity asset map.

[29] Health in All Policies: A Guide for State and Local Governments. Accessed at https://www.apha.org/topics-and-issues/health-in-all-policies on April 25, 2018.

[30] Oklahoma State University America's HEALTHIEST Campus – Accessed at http://americashealthiestcampus.okstate.edu/ on February 28, 2018.

Risk Reduction: Tobacco

Key Facts

The 1982 United States Surgeon General's report stated that "Cigarette smoking is the major single cause of cancer mortality [death] in the United States." This statement is as true today as it was then, causing about 7,500 deaths in our state per year. [13]

Tobacco use is responsible for one in three cancer deaths each year in Oklahoma, ranking us 10th nationally in smoking attributable cancer deaths. [31]

Oklahomans spend approximately $1.62 billion per year on smoking-related health cost, while the tobacco industry spends an estimate of $162.6 million dollars annually to market tobacco products in Oklahoma. [13]

Each year about 2,100 Oklahoma children become new daily smokers. 88,000 of Oklahoma youth (alive today) will ultimately die prematurely due to tobacco use. [13]

If no one smoked, one in three cancer deaths would not happen.

– J. Taylor Hays, M.D., Mayo Clinic, Nicotine Dependence Center

Ronnie Trentham
Stilwell, OK

As a six-time cancer survivor, Ronnie knows the dangers of tobacco use. He began using tobacco as a teen because his buddies did it and while he only "chewed" for 15 years, he believes it was the cause of the squamous cell carcinoma in his cheek, jaw, hard palate, neck and lymph nodes.

Ronnie works tirelessly with kids, telling them the painful stories of what cancer has done to his family. And hearing that even with surgery, his chances of survival were only 15%. He keeps his sense of humor when he tells the story where, during the initial surgery, a portion of his jaw bone was removed and replaced with a portion of his leg bone. "Months after the surgery, I kept feeling something funny in my mouth. I finally asked my wife to look at it for me. She began laughing and finally told me I had leg hair growing in my mouth."

Ronnie knows if he can reach even one kid with his story, that's one potential life saved.

[31] Tieulent, J., Sauer, A., Siegel, R. et al. (2016). State level cancer mortality attributable to cigarette smoking in the United States. JAMA Internal Medicine, 176 (12): 1792-1798. Accessed from https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2571615 on February 7, 2018.

Lead Organizations

- Oklahoma Hospital Association
- Oklahoma State Department of Health, Center for the Advancement of Wellness
- Oklahoma Tobacco Settlement Endowment Trust

Objective

Reduce adolescent and adult tobacco prevalence.

Measurement

Baseline Data Oklahoma

- 12.5% - Adolescent (high school) smoking prevalence
- 19.6% - Adult smoking prevalence

Targets by 2022

- Reduce adolescent (high school) smoking prevalence to 11%.
- Reduce adult smoking prevalence to 15.8%.

Initiatives and Strategies

1. Prevent initiation of tobacco use by youth and young adults.

a. Enact key public policy measures to increase prices on tobacco products by 2022.

b. Fully implement evidence-based health communications mass media campaigns according to Center for Disease Control and Prevention (CDC) Best Practices for Comprehensive Tobacco Control Programs by 2022.

c. Maintain compliance with laws to prevent illegal sales of tobacco to youth as evidenced by Synar compliance rates greater than 90%.

2. Protect all Oklahomans from exposure to secondhand smoke

a. Extend state law to eliminate smoking in all indoor public places and workspaces, except in private residences, through a comprehensive state law eliminating exemptions by 2022.

3. Increase by 5% annually the percentage of Oklahoma adults and youth who successfully quit tobacco use.

a. Increase the number of hospitals and health systems, health care professionals, and community-based clinics that effectively implement the U.S. Public Health Service Clinical Practice Guideline for treating tobacco dependence by 2022 as evidenced by a 10% annual increase in the number of providers completing direct referrals to the Oklahoma Tobacco Helpline (OTH) via fax or EMR.

b. Increase tobacco-free properties at all workplaces including private businesses, state agencies, tribal governments, local governments, hospitals, school districts, universities and colleges, career technology centers and faith-based organizations by 2022.

c. Increase by 20% the percentage of smokers utilizing OTH services (treatment reach) by 2022.

4. Increase knowledge of emerging products.

a. Develop a tracking system for the sale of electronic cigarettes/devices to youth under the age of 18.

b. Routinely conduct assessments that highlight the actual usage of emerging products.

OSU
First Big 12 institution and state-funded university
in Oklahoma to adopt a tobacco free policy
Stillwater, OK

Priority Cancer Areas

Purcell, OK

"With the exception of my wife and children, there's nothing I value more than my Oklahoma heritage."
- James Garner, Actor, Oklahoman

"Once cancer is identified, it is critical to ensure that all citizens have access to financial coverage for timely and appropriate cancer treatment."
-Jennifer Roysdon, Oklahoma Hospital Association

Priority: Breast Cancer

Key Facts

Breast cancer is the most frequently diagnosed cancer among Oklahoma women and is a leading cause of cancer death among women. [6]

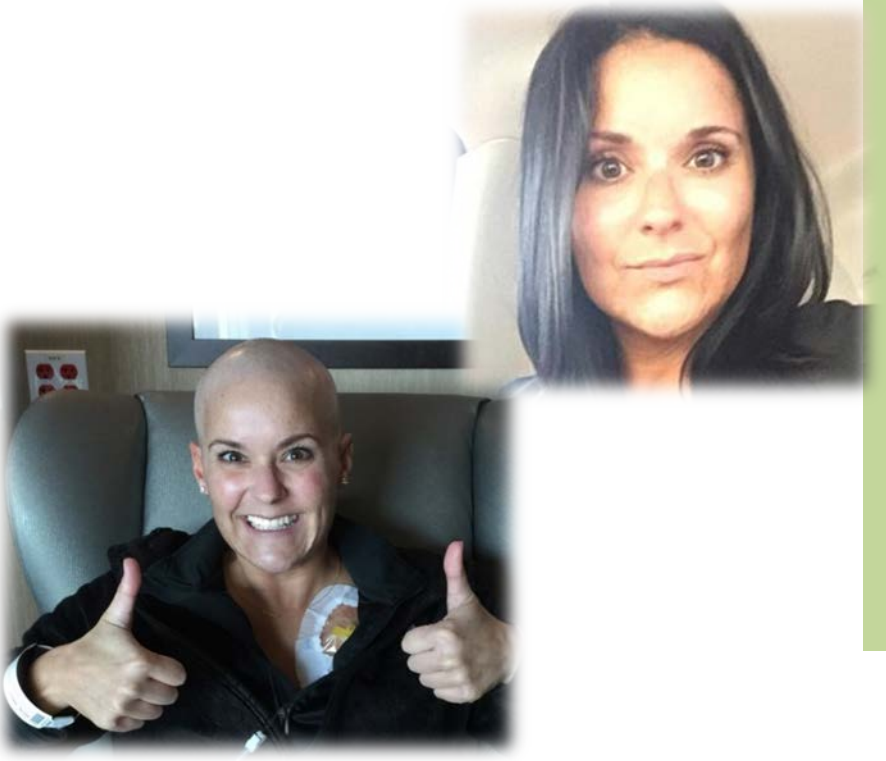
Data

In 2015, in Oklahoma 3,348 new cases of female breast cancer were diagnosed. Men can get breast cancer, but it is very uncommon. Less than 1% of breast cancers occur in men. During 2015, in Oklahoma 28 new cases of breast cancer occurred in males. [6]

The rates of breast cancer differ by race, ethnicity, and age. AA/Black women and AI/Alaska Native women have a higher incidence of breast cancer in comparison to White and Hispanic women.[6] Oklahoma women under 70 years of age have a lower rate of breast cancer than the U.S., but Oklahoma women 70 years and older have a higher incidence than the U.S.[7]

Lead Organization

- Oklahoma Health Care Authority
- Oklahoma State Department of Health, Center for the Advancement of Wellness



Amity Ritze
Tulsa, OK

On December 30, 2015, at the age of 35, Amity was diagnosed with Stage 4 Breast Cancer. A pet scan also showed 7 tumors on her bones – sternum, breast bone, T3 spine, left 3rd rib, right scapula, right hip bone and skull.

Amity remains optimistic and busy with law school between treatments but admits that she struggled with the idea of "looking like a cancer patient." The loss of her gorgeous, long jet-black hair was tough. "It was hard because I didn't recognize the girl in the mirror anymore."

Through it all, Amity has maintained a hopeful spirit and positive attitude. She says "staging isn't a death sentence; it is just a measurement of how far the cancer has spread from the primary site." Her cancer isn't "curable, but it's treatable and the outlook is very positive."

Amity's advice is this: "Take everything day by day, don't look into the future… Focus on what you can control today."

Objective

Facilitate access to high quality breast cancer services (preventive, screening, diagnostic, treatment, and counseling) to all Oklahoma women regardless of income, race, employment, or insurance status.

Measurement

Baseline Data Oklahoma 2016

- 74.4% women age 50-74 reported have had a mammogram within the past two years.

Targets by 2022

- Increase to 78.1% the proportion of women who receive breast cancer screenings based on the most recent United States Preventive Services Task Force (USPSTF) guidelines of females aged 50 to 74 years.

Initiatives and Strategies

1. Increase the number of providers who refer patients for high quality breast cancer screenings.

a. Coordinate and collaborate with health care providers, health systems, tribal nations, and community organizations to increase high quality breast cancer screenings utilizing the current USPSTF Guidelines for Breast Cancer Screening.

b. Utilize policy approaches and health systems change to improve implementation of breast guidelines and practices for health care professionals.

c. Encourage patient navigation services to assist with access to screening and timely diagnostic services.

2. Increase the number of women who get high quality breast cancer screenings.

a. Promote and support OHCA Connect 4 Health initiative that includes targeted messaging to females 50 – 74 years of age to remind about mammograms every two years.

b. Decrease structural barriers (transportation, availability, and accessibility) that limit access to breast cancer screening, diagnostic, and treatment services.

Priority: Cervical Cancer

Key Facts

Cervical cancer is not a leading cause of cancer death among Oklahoma females; however, due to advanced detection and treatment, there is no longer a reason any woman should die from cervical cancer. There are steps that can reduce the risk of cervical cancer which include: getting screened, stopping tobacco consumption, limiting the number of sexual partners, using condoms and receiving the HPV vaccination (if age appropriate). [12]

Data

In 2015, 164 new cases of cervical cancer were diagnosed in Oklahoma, and the mortality rate continues to be higher than the U.S. Oklahoma women report receiving a Pap test less frequently compared to the U.S. Oklahoma also has a lower percentage of persons receiving HPV vaccination in comparison to the U.S. [32]

Jennifer Winget
Oklahoma City, OK

Jennifer was diagnosed with Stage 1A cervical cancer at the age of 40. She had not been for Pap screening in some time, but went to her primary care physician, and then was seen at the OU Dysplasia Clinic through the OSDH BCC program.

She had very few symptoms at the time of her biopsies. An excision of the cervix found her cancer and was cured with a simple hysterectomy in October 2016.

Jennifer's story highlights the importance of women continuing to get Pap testing even after they are finished having children.

In order to prevent cervical cancer, women, their children and loved ones should be vaccinated against HPV and continue age-based screenings.

[32] Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Vital Statistics 2014, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on March 3, 2018.

Lead Organization

- Oklahoma Health Care Authority
- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Facilitate access to high quality cervical cancer services (preventive, screening, diagnostic, treatment, and counseling) to all Oklahoma women regardless of income, race, employment, or insurance status.

Measurement

Baseline Data Oklahoma 2016

- 78.8% women age 21-65 who have had a Pap test in the past 3 years.

Targets by 2022

- Increase to 82.7% the proportion of women who receive cervical cancer screenings based on the most recent USPSTF guidelines

Initiatives and Strategies

1. Increase the number of providers who refer patients for high quality cervical cancer screenings.

a. Coordinate and collaborate with health care providers, health systems, tribal nations, and community organizations to increase high quality cervical cancer screenings utilizing the current USPSTF Guidelines for Cervical Cancer Screening.

b. Utilize policy approaches and health systems change to improve implementation of cervical guidelines and practices for health care professionals.

c. Encourage patient navigation services to assist with access to screening and timely diagnostic services.

2. Increase the number of women who get high quality cervical cancer screenings.

a. Decrease structural barriers (transportation, availability, and accessibility) that limit access to cervical cancer screening diagnostic and treatment services.

Priority: Colorectal Cancer

Key Facts

Colorectal cancer is the second leading cause of cancer death in the U.S. when men and women are combined and is a cause of considerable suffering among the more than 135,000 adults diagnosed with colorectal cancer each year.[10]

When adults get screened for colorectal cancer, it can be detected early at a stage when treatment is most likely to be successful, and in some cases, it can be prevented through the detection and removal of precancerous polyps.[33]

About 1 in 3 adults between 50 and 75 years old – about 23 million people – are not getting tested as recommended. [33]

There are several recommended screening test options: colonoscopy, stool tests (guaiac fecal occult blood test [FOBT] or fecal immunochemical test [FIT]), and sigmoidoscopy.

Ultimately, the best test is the one that gets done.

Cynthia Branham & Meagan Carter
Bartlesville, OK

Cynthia was diagnosed with Stage 4 colon cancer at the age of 50. Her diagnosis came after years of telling her primary care doctor about her family history of colon cancer and him putting off referring her for a colonoscopy because "it could wait."

On January 20, 2012 she was admitted to the ER with severe pain in her right side. A CT scan revealed she had colon cancer that had metastasized to her liver.

Cynthia had cancer treatment through June 2012 and kept her spirits up by spending time with her family, church friends and loved pets.

She passed on July 19, 2012.

Her daughter Meagan's message is "Be a strong advocate for yourself even if your doctor is not your advocate. If you are concerned about it, especially if you have strong family history, get the testing done. If your doctor refuses to agree, find a new doctor who will do the screening. Knowledge is not just power, it is also peace of mind."

[33] American Cancer Society, Colorectal Cancer. Accessed at https://www.cancer.org/cancer/colon-rectal-cancer.html on February 15, 2018.

Data

In 2015, 1,884 new cases of colorectal cancer were diagnosed in Oklahoma. Colorectal cancer mortality rates have decreased considerably in Oklahoma and the U.S. since 2003. However, we still see an increase in mortality rates with age. It is the highest among people aged 75-84. [34]

The rates of colorectal cancer differ by gender, race and age. In Oklahoma, colorectal cancer incidence rates are higher among men, and particularly among the AI/AN and AA/Black population. [34]

Lead Organization

- American Cancer Society

Objective

Overcome barriers that create inequitable health outcomes by increasing the number of Oklahomans who get evidence-based colorectal screening.

Measurement

Baseline Data Oklahoma 2016

- 59.4% of adults aged 50-74 years reported having had an FOBT in the past year or a sigmoidoscopy in the past 5 years plus FOBT in the past 3 years, or a colonoscopy in the past 10 years

Targets by 2022

- Increase to 62% the number of adults who have had an FOBT in the past year or a sigmoidoscopy in the past 5 years plus FOBT in the past 3 years, or a colonoscopy in the past 10 years. The screenings are based on the most recent USPSTF guidelines

Initiatives and Strategies

1. Increase the number of partnerships to support increasing colorectal screenings.
   a. Partner with health insurers in Oklahoma to create a reminder card system.
   b. Actively partner with FQHCs to create system change that would update organizational policies and implement evidence-based interventions.

Additionally, the plan will support The National Colorectal Cancer Roundtable (the Roundtable) efforts in Oklahoma.

The Roundtable was established by the ACS and the CDC in 1997. It is a national coalition of public, private, and voluntary organizations along with invited individuals who are dedicated to reducing the incidence and mortality from colorectal cancer in the

[34] Oklahoma State Department of Health (OSDH), Disease, Prevention, and Preparedness Service, Chronic Disease Service, Oklahoma Central Cancer Registry (OCCR) 2015, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at http://www.health.state.ok.us/ok2share/ on March 3, 2018.

U.S. through coordinated leadership, strategic planning, and advocacy. The ultimate goal is to increase the use of effective colorectal cancer screenings among the entire population, as age appropriate.

The Roundtable's 80% by 2018 strategic plan provides a practical blueprint for achieving the goal of routine screening 80% of adults aged 50 and older for colorectal cancer by 2018.

The strategic plan outlines four key goals to achieve 80% by 2018:

- Consumers – Move consumers to action,
- Systems – Activate providers, payers and employers to increase screening,
- Policy – Increase access and remove barriers to screening, and
- Process – Maintain momentum.

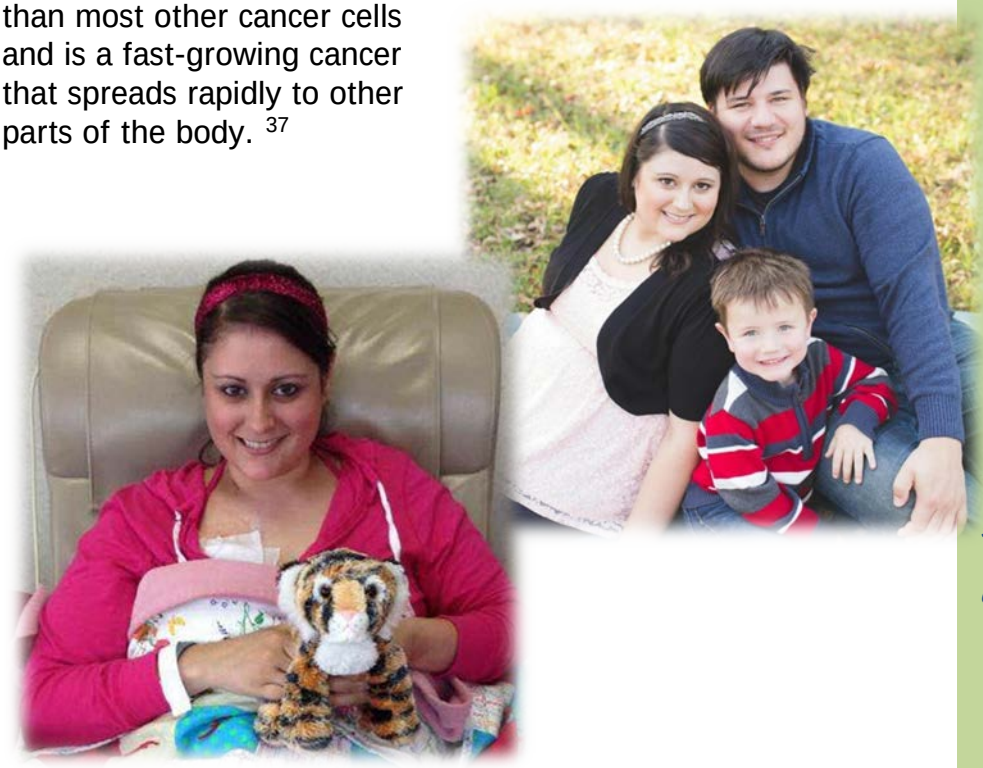
Priority: Lung Cancer

Key Facts

The two main types of lung cancer are small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). These categories refer to what the cancer cells look like under a microscope. [35]

NSCLC is the most common type of lung cancer, making up 80-85% of all cases. It typically spreads more slowly than SCLC. [36]

SCLC makes up 10-15% of all lung cancer cases. It is a type of neuroendocrine tumor with cells that are smaller in size than most other cancer cells and is a fast-growing cancer that spreads rapidly to other parts of the body. [37]



Danielle James
Moore, OK

On May 1, 2013, just 10 days after her 25th birthday, Danielle was diagnosed with Stage 4 NSCLC Adenocarcinoma. At the time, her doctors gave her just six months to live but that didn't stop her.

Thanks to research, multiple treatment options and clinical trials, she continues to fight. "This year of life I celebrated my 3rd year of life with cancer! I will never be in remission but I am fighting and surviving and beating the odds every day!"

Danielle's advice to anyone facing cancer is, "when I was diagnosed with cancer I lost everything. But I have come to realize that I gained so much more. Life is so much more beautiful when you realize how fragile it is. We were never guaranteed a good life or good health or 80 years. We believe we are entitled to success. However, the truth is, every day is a gift. Every good and perfect gift is from above. Take life one day at a time. Never take a day for granted."

[35] Basic Information About Lung Cancer. Accessed at http://www.cdc.gov/cancer/lung/basic_info/index.htm on February 7, 2018.
[36] American Cancer Society, What is Non-Small Cell Lung Cancer? Accessed at https://www.cancer.org/cancer/non-small-cell-lung-cancer/about/what-is-non-small-cell-lung-cancer.html on April 12, 2018.
[37] American Cancer Society, What is Small Cell Lung Cancer. Accessed at https://www.cancer.org/cancer/small-cell-lung-cancer/about/what-is-small-cell-lung-cancer.html on April 12, 2018.

Data

Lung cancer is the leading cause of cancer death and the second most diagnosed cancer in both men and women in the U.S. In 2015, 14% of all cancer diagnoses and 26% of all cancer deaths were due to lung cancer.[37] After increasing for decades, lung cancer rates are decreasing nationally, as fewer people smoke cigarettes.[37]

Cigarette smoking is the number one cause of lung cancer. It can also be caused by using other types of tobacco, breathing secondhand smoke, being exposed to substances such as asbestos or radon, and having a family history of lung cancer.[35]

Lead Organizations

- Oklahoma Hospital Association
- Oklahoma Lung Cancer Initiative
- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Decrease the number of preventable lung cancers by increasing the number of Oklahomans who successfully quit using tobacco.

Increase the number of health care providers who are proactively referring tobacco-using patients for recommended lung cancer screening guidelines.

Decrease the stigma placed on lung cancer patients and survivors by providing effective and sensitive education through public awareness campaigns.

Measurement

Baseline Data Oklahoma 2016

- The adult smoking rate for Oklahoma is 19.6%

Targets by 2022

- Decrease the number of tobacco users in Oklahoma to 15.8%
- Connect with and support the awareness and referrals to at least four lung cancer screening programs that comply with best practices

Initiatives and Strategies

1. Increase by 10% the number of referrals to the Oklahoma Tobacco Helpline (OTH).

a. Partner with health care providers to proactively refer tobacco using patients to the OTH via electronic and/or fax referrals.

2. Increase lung cancer screening rates.

a. Increase knowledge, attitudes and behaviors regarding referral to lung cancer screening by physicians through increased education regarding risk factors and recommended screening options.

b. Develop and maintain a list of lung cancer screening facilities across Oklahoma to share with providers to improve referral rates.

3. Decrease the stigma placed on lung cancer patients and survivors.

a. Led by the Oklahoma Lung Cancer Initiative, we will support the “Erase the Stigma” awareness campaign to address the causes of lung cancer, increase awareness of other risk factors, and increase support for all lung cancer patients, survivors, and caregivers.

Cross-Cutting Issues

Stillwater, OK

"The person that I ultimately have become, things that helped me do some things I've done athletically were really shaped here in this town [Henryetta, OK]. I learned about hard work. I learned about integrity. I learned about character. I learned about your word meaning something.
It was a lifestyle that was foreign to me. It helped teach me to embrace the difficult times. No one goes through life and not have some setbacks."

- Troy Aikman,
Quarterback, OU, UCLA and the Dallas Cowboys,
Pro Football Hall of Fame inductee,
Sportscaster, Oklahoman

Cross-Cutting issues address areas such as Communication, Policy and Technology which apply across multiple health issues.

Cross Cutting: Communications

Key Facts

As recommended in the Comprehensive Cancer Control Media Plan Guidance Manual,[38] the communication plan will contain strategies such as:

- public relations,
- individual and group instruction,
- paid, earned, and social media, and
- owned media.

In developing the plan, we will be reviewing

- background and justification (Environmental Scan),
- communication objectives,
- audiences,
- messages,
- settings and channels,
- activities,
- partners and resources,
- tasks and timeline,
- budget, and
- tracking and evaluation plans.

Lead Organizations

- Oklahoma Hospital Association
- Oklahoma State Department of Health
- Tobacco Settlement Endowment Trust

Objective

Using a collaborative approach, we aim to speak with a single voice regarding reducing cancer risk, increasing early detection, improving access to quality and effective cancer treatment and improving quality of life for cancer survivors.

Shape Your Future Oklahoma

Shape Your Future is dedicated to improving community health.

We encourage parents, children, and all Oklahomans to live healthier lives every day by eating more fruits and vegetables, getting the appropriate amount of physical activity and being tobacco free.

Through contests, healthy holidays, bite-sized tips and more, Shape Your Future reveals how simple lifestyle changes can improve your health and your future.

For more information, go to www.shapeyourfutureok.com

Eat Better

Move More

Be Tobacco Free

Participating in sports is an excellent way for children to get exercise.

[38] Comprehensive Cancer Control Media Plan Guidance. Accessed at https://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/Media%20Plan%20Guidance%20%20%2007%2008%202014.pdf on April 25, 2018.

Initiatives and Strategies

1. Increase awareness of public health campaigns that promote healthy lifestyle changes.

a. Support campaigns such as Shape Your Future, which focuses on behavior change in the priority risk reduction areas.

- Eat Better,
- Move More, and
- Be Tobacco Free.

b. Limit alcohol consumption.

c. Disseminate chronic disease and health improvement fact sheets through the partnership network.

2. Increase provider awareness of new evidence-based interventions and health improvement activities.

a. Dissemination of new evidence-based interventions via a quarterly newsletter.

- Share with the Oklahoma State Medical Association (OSMA), Oklahoma Osteopathic Association (OOA), Oklahoma Nursing Association (ONA), Oklahoma Society of Clinical Oncology (OSCO), Oklahoma Medical Group Management Association (OKMGMA), Insurance Providers and the Oklahoma Insurance Department (OID), Oklahoma Health Care Authority (OHCA) – Health Coaches, Chronic Disease Management, Health Access Network, and others as appropriate
- Continuing Medical Education (CMEs)
- Research
- Other

b. Improve health care professionals' knowledge of tobacco related diseases and health improvement resources through regular Oklahoma Hospital Association updates.

c. Find ways to partner with Health Account Managers (i.e. Pharmaceutical companies, health care organizations, etc.) to provide communication and education to physicians.

3. Increase the number of physicians who understand and actively refer patients for recommended cancer screening.

a. Promote the use of the "Health Card" kit [39] and promotional pieces with primary care providers.

[39] Health Card Kit. Accessed at http://www.everydaychoices.org/card-info/ on February 7, 2018.

Cross Cutting: Genomics

Key Facts

An estimated 5–10% of all cancers are due to hereditary genetic mutations.[40] Genetic tests are recommended for implementation in practice based on systematic review of clinical practice guidelines and are covered by the Centers for Medicare and Medicaid Services (CMS). [41] Hereditary breast and ovarian cancer (HBOC) and Lynch Syndrome are two hereditary cancer syndromes covered under genomic testing applications.

Data

Breast cancer: 72% of women who inherit the BRCA1 mutation and around 69% of women who inherit the BRCA2 mutation will develop breast cancer by age 80 years.[40]
Ovarian cancer: 44% of women who inherit the BRCA1 mutation and 17% of women who inherit the BRCA mutation will develop ovarian cancer by age 80 years.[40]

Colorectal cancer: Lynch syndrome accounts for an estimated 2-4% of all colorectal cancers in United States.[42] Among those with Lynch syndrome, colorectal cancer is approximately 54% to 70% for men and approximately 42% to 52% for women, and average age of onset is 44 to 61 years.[43]

William C. Dooley, M.D., F.A.C.S.
The G. Rainey Williams Professor and Chair in Surgical Breast Oncology

We are entering a new era of cancer care which hinges on rapid advances coming from genomics called "precision medicine." The first area of importance is the ability to screen for inherited genetic disorders such as BRCA1, BRCA2, Lynch Nyan, Cowdens, and other syndromes. The next area is to be able to see what mutations during a patient's life caused the cancer and/or gives the cancer the ability to rapidly grow. From these studies we can focus treatment to only drugs which will work and to eliminate marginal or useless toxic therapies. Early indications are that we may well gain insight into disparities in cancer care from these same studies.

Lead Organization

[40] Understanding genetic Testing for Cancer. *American Cancer Society*. Accessed at https://www.cancer.org/cancer/cancer-causes/genetics/understanding-genetic-testing-for-cancer.html on March 19, 2018
[41] Dotson WD, Douglas MP, Kolor K, et al. Prioritizing genomic applications for action by level of evidence: A horizon-scanning method. *Clin Pharmacol Ther* 2014; 95: 394–402
[42] Evaluation of Genomic Applications In Practice and Prevention (EGAPP) Working Group. Recommendations from EGAPP Working Group: genetic testing strategies in newly diagnosed individuals with colorectal cancer aimed at reducing morbidity and mortality from Lynch syndrome in relatives. *Genet Med* 2009 Jan; 11(1): 35–41
[43] Polinsky C, Brandt R, Tucci R, McHugh T. Lynch syndrome: Identifying patients at risk for HNPCC. Oncology Nurse Advisor 2011 April;: 13-18

- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Reduce breast, ovarian and colorectal cancer incidence and mortality by overcoming barriers and advancing health system change to promote cancer genomic best practices.

Initiatives and Strategies

1. Promote the use of cancer risk assessment and risk-appropriate referral for genetic services for adults in primary care clinics and cancer centers.
    - **a.** Develop and promote an educational and resources web page on genetic counseling, testing, and risk management services associated with HBOC and Lynch Syndrome for patients and providers.
    - **b.** Educate providers to promote genetic testing referrals.
    - **c.** Assess Oklahoma behaviors associated with HBOC and Lynch Syndrome through the Behavioral Risk Factor Surveillance System (BRFSS).
    - **d.** Assess number of genetic testing referral by developing questions through the BRFSS.

"I want my permanent address to be in Oklahoma. Someday, when I get married and have kids, that's where I want to raise my kids."

- Carrie Underwood, American Idol 2005 winner, singer-songwriter, Oklahoman

Cross Cutting: Health Disparities

Key Facts

There has been significant progress in cancer treatment, screening, diagnosis, and prevention over the past several decades. However, addressing health disparities including higher cancer mortality rates, less frequent use of proven screening tests, and higher rates of late stage diagnosis in certain populations is an area where progress has not kept pace.[44]

Research focused on cancer disparities and equity is needed to understand why certain people may be more likely to develop or die from cancer.[11,45]

Lead Organization

- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Using a collaborative approach, we aim to increase the understanding of the dynamics of cancer-related health disparities across Oklahoma.

Initiatives and Strategies

1. Increase collaborative efforts between communities and health care systems to identify disparate populations in need of improved cancer screening and treatment.
   a. Support ongoing research programs that focus on eliminating health disparities.
   b. Identify and disseminate population and literacy appropriate health information.

Greta Shepherd – Stewart, Oklahoma City, OK

Differences in the breast cancer burden of African American women compared to White American women are well-documented.

Additionally, controversies have emerged regarding age-appropriate mammographic screening guidelines and how these surveillance recommendations influence future breast cancer disparities.

Disparities like these affect Greta, and too many women like her.

Greta is a triple negative breast cancer (TNBC) survivor. TNBC makes up 10 – 20% of all breast cancers.

Patients with TNBC require a different type of treatment because they are estrogen receptor negative, progesterone receptor negative and human epidermal growth factor receptor negative.

When Greta was diagnosed, she told her clinical care team "All I know to do is fight." And that is just what she did.

[44] National Cancer Institute, Cancer Health Disparities Research. Accessed at https://www.cancer.gov/research/areas/disparities on February 7, 2018.
[45] Guide to Understanding Triple Negative Breast Cancer. Accessed at https://www.tnbcfoundation.org/wp-content/uploads/2015/07/LBBCGuideUnderstandingTripleNegPrint2013.pdf on February 7, 2018.

Cross Cutting: Patient-Centered Care Coordination

Key Facts

The Institute of Medicine (IOM) defines patient-centeredness as "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions."[46] Over time, other organizations and individuals have elaborated on the attributes of patient-centered care. In the cancer setting, some of the attributes of patient-centered care include:

- patient education and empowerment,
- patient-centered communication, which involves the patient, family, and friends; explains treatment options; and includes patients in treatment decisions to reflect patients' values, preferences, and needs,
- coordination and integration of care, and
- provision of emotional support as needed, such as relieving fear and anxiety and addressing mental health issues.

Effective patient-clinician communication and shared decision making are key components of patient-centered care. These components require that informed, activated, and participatory patients and family members interact with a patient-centered care team that has effective communication skills and is supported by an accessible, well-organized, and responsive health care system. As described by the National Cancer Institute's (NCI's) monograph *Patient-Centered Communication in Cancer Care*, the primary functions of patient-centered communication are to:

- foster healing relationships,
- exchange information,
- respond to emotions,
- manage uncertainty,
- make decisions, and
- enable patient self-management.[47]

Language Makes a Difference, Jennifer Roysdon

It is easy to fall into the habit of speaking only in clinical jargon when working with cancer patients and survivors. However, it is critical to remember that they are mothers, fathers, sons, and daughters - real people. The language we use makes a difference.

When diagnosed with cancer, most are ready to fight, and that's what we want them to do. However sometimes the best answer is to wait. In prostate cancer, we call it "watchful waiting" but we have to be careful not to make them feel that we are "doing nothing."

Unfortunately, there are also times when treatment just wasn't enough and cancer becomes terminal. While the patient may be ready to go home and die in peace, they are unready to sign a DNR because of the feeling they are giving up or their clinical team won't help at all. Using the term "AND" or "Allow Natural Death" can help to ease that perception.

Balance comes with meeting their physical, mental, emotional, and spiritual needs.

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[46] IOM. Crossing the quality chasm: A new health system for the 21st century. Washington, DC: National Academy Press; 2001. http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf

[47] Epstein, R., M.D. and Street Jr., R., PhD. Patient-Centered Communication in Cancer Care: Promoting Healing and Reducing Suffering. Accessed at https://healthcaredelivery.cancer.gov/pcc/pcc_monograph.pdf on 4-12-18.

These six functions dynamically interact to influence the quality of patient-clinician interactions and may ultimately influence patients' health outcomes. They are skills that need to be developed, utilized, and maintained across the cancer care continuum.

Lead Organization

- American Cancer Society
- Oklahoma Health Care Authority

Objective

Increase access to cancer patient-centered care coordination and patient navigators across the continuum of cancer care from outreach to end-of-life.

Initiatives and Strategies

1. Educate the community and health care professionals about the patient navigator's role across the continuum of care.

a. Engage patient navigator participation in the Comprehensive Cancer Program to support ongoing provider education opportunities.

b. Number of cancer centers that work together with patients to develop comprehensive care summary and follow-up plan after completing treatment.

Paoli, OK

"Courage has to do with controlling fear and it seems to me that focus has a way of overcoming anxiety."

- General Tommy Franks,
Commander of U.S. Central Command, U.S. Invasions of Afghanistan and Iraq, Oklahoman

Cross Cutting: Policy

Key Facts

By implementing policy approaches, we can develop practices to prevent cancer and establish clinical-community linkages that reduce the cancer burden.

Lead Organization

- American Cancer Society – Cancer Action Network
- Oklahoma Tobacco Research Center – Policy Division
- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Policy changes maximize public health cancer prevention and control resources by extending the impact of interventions to reach populations instead of individuals.[48]

Initiatives and Strategies

1. Protect all Oklahomans from exposure to secondhand smoke.
   a. Increase the proportion of voluntary smoke-free policies as evidenced by a 20% increase in Excellence level certifications in all 7 Certified Healthy Oklahoma categories by 2022.

2. Support an increase in the Oklahoma Cigarette Tax.
   a. Increase the cigarette excise tax rate in Oklahoma to reduce consumption and lower health care costs.[49]

Tobacco Tax Increase Oklahoma, American Cancer Society

"The $1-per-pack cigarette tax increase signed into law March 29, 2018 by Oklahoma Governor Mary Fallin will help to discourage tobacco use and save lives from cancer and other serious tobacco-related diseases in the state.

"The state's $1 per pack increase is projected to save an estimated 10,200 lives, keep 17,300 kids from becoming addicted and prompt more than 18,700 adults to quit. It's not only the right move for the physical health of the state, but its fiscal health as well. The increase will generate an estimated $144.8 million in new annual revenue and save the state $767 million in long-term health care costs.

"Considering that one-third of all cancer deaths can be attributed to tobacco use, reducing its consumption is absolutely critical in the fight against cancer.

"Oklahoma's $1- per-pack increase will take the state from being ranked 36th in the nation for its cigarette tax rate to 15th." [49]

[48] Policy, Systems, and Environmental Change Resource Guide. Accessed at https://www.cccnationalpartners.org/new-resource-policy-systems-and-environmental-change-resource-guide on April 23, 2018.
[49] Oklahoma cigarette tax increase will reduce suffering and death from cancer. https://www.acscan.org/releases/oklahoma-cigarette-tax-increase-will-reduce-suffering-and-death-cancer on April 23, 2018.

Cross Cutting: Surveillance and Epidemiology

Key Facts

Public health surveillance data should be studied to identify and address cancer related risk factors and other chronic diseases in conjunction with cancer. We will then be able to provide a holistic approach to implement data-driven decisions which support policy, systems and environmental approaches to prevent cancer and decrease cancer burden.

"Super Sam" Bilby, Tahlequah, OK

Super Sam is an astonishing 8-year-old little brother, twin-brother, son and superhero. He has a huge heart, giant smile, and larger than life personality. Sam loves dressing up and entertaining people in his numerous costumes. He has an 'old soul' which fuels his love of The Jackson 5 and Elvis.

Sam is also fighting cancer. In October 2016, he was diagnosed with Acute Lymphoblastic Leukemia Pre B, or ALL.

Sam's diagnosis was devastating. He spent a month in the hospital receiving his first of many rounds of treatments.

Sam's family suddenly had a 'new normal' to adjust to. Trips to Tulsa; finding food he could and would eat; trying to maintain a 'normal schedule' for his siblings; keeping him apart from the crowds at church so he didn't catch anything; had all become a new way of life.

The Bilby's were given some great news in the spring of 2017; Sam was declared to be in remission but will continue his treatments until March 2020.

"I strongly believe that God chose the strongest person in our family, our church and community to fight this battle. What He has in store next for Sam, only God knows, but we all believe it's something incredible so he can continue to touch lives and inspire others as a survivor."

- Super Sam's Dad, Greg Bilby

"Super Sam" Bilby (Continued)

Sam's cancer has been something his entire family has fought together, from his twin sister Maddison and older brother Logan to his parents Greg and Melissa. They will tell you that this journey is something you can't do alone.

Some friends of ours whose child was also diagnosed with cancer gave us some simple advice; "Just Say Yes." Your friends and family want to help. Strangers will want to help. Don't rob them of that blessing. The outpouring of support will humble you but also give you the strength to make it to the end of the day.

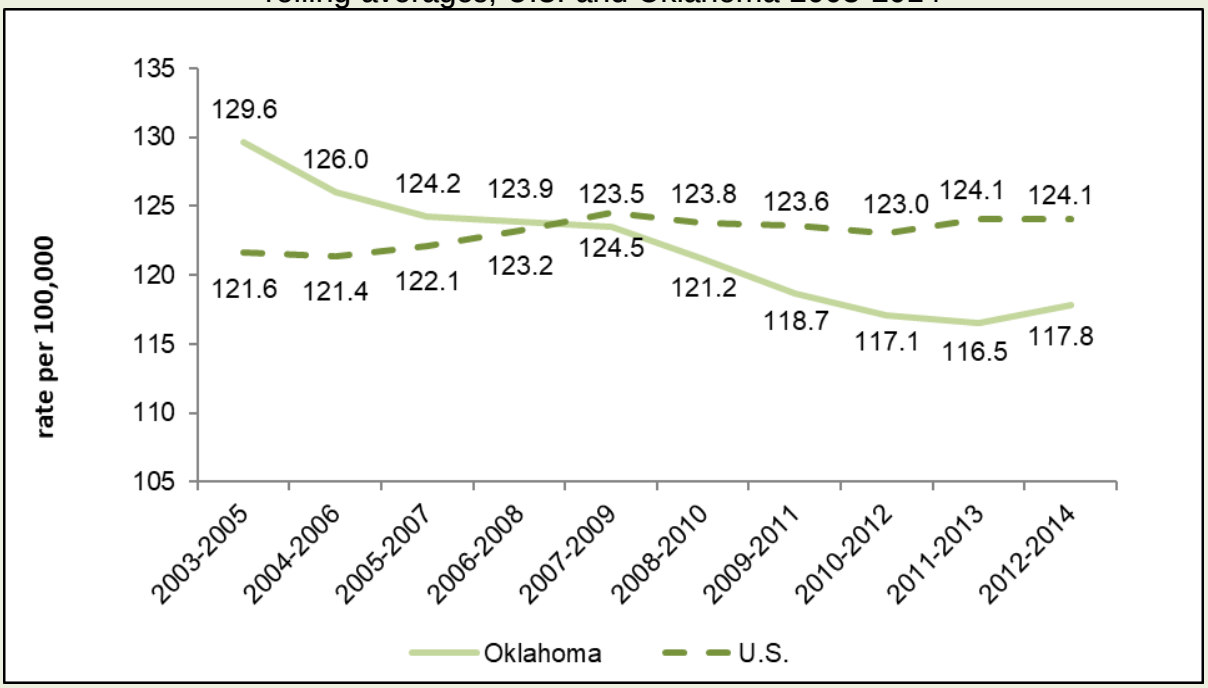
The biggest piece of advice Super Sam's family wants to share is this... After the bombshell is dropped and you feel your world is shattered and scattered beyond repair; you are not alone. Some folks feel it's not fair that a loved-one, especially a child, is diagnosed with cancer. But God was with you before the diagnosis. He will be with you during the battle. He will be with your no matter what. Just be still and listen. He can send blessings and the right people your way, if you let Him.

Data

Breast Cancer

The incidence for invasive breast (excluding in situ) cancer among women in Oklahoma has been steadily decreasing since 2003 and starting in 2008 is lower than the U.S. incidence rate (Figure 14). Based on Figure 5, incidence rates were the highest among AI/AN women in Oklahoma, and incidence rates among White and AA/Black women are very similar in 2015. Within Oklahoma, the mortality rates for breast cancer were the highest among AA/Black women; however, the mortality rate among AI/AN women in Oklahoma is much higher than the U.S. in 2016 as seen in Figure 9.

Figure 14. Female Invasive Breast Cancer Age-Adjusted Incidence Rates, 3-year rolling averages, U.S. and Oklahoma 2003-2014



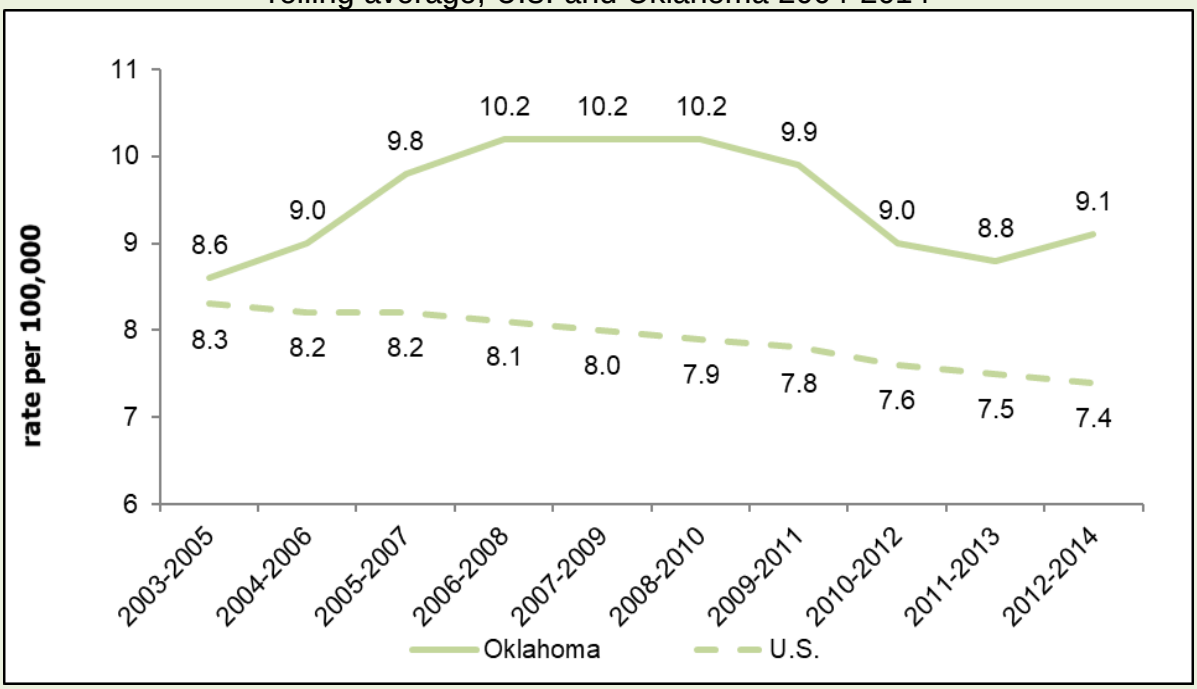
Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

Patients with Triple Negative Breast Cancer (TNBC) require a different type of treatment because they are estrogen receptor negative, progesterone receptor negative and human epidermal growth factor receptor negative. [45]

Cervical Cancer

The incidence rates for invasive cervical cancer have been decreasing steadily in the U.S.; however, the rates in Oklahoma have not followed the same trend. In Oklahoma, the incidence rates started to decline in 2009 (Figure 15). Based on Figure 6, incidence rates were the highest among AI/AN women in Oklahoma (2015). Mortality rates for cervical cancer remain higher than the U.S. and started to slightly increase in 2013 as seen in Figure 10.

Figure 15. Cervical Cancer Age-Adjusted Incidence Rates among Women, 3-year rolling average, U.S. and Oklahoma 2004-2014



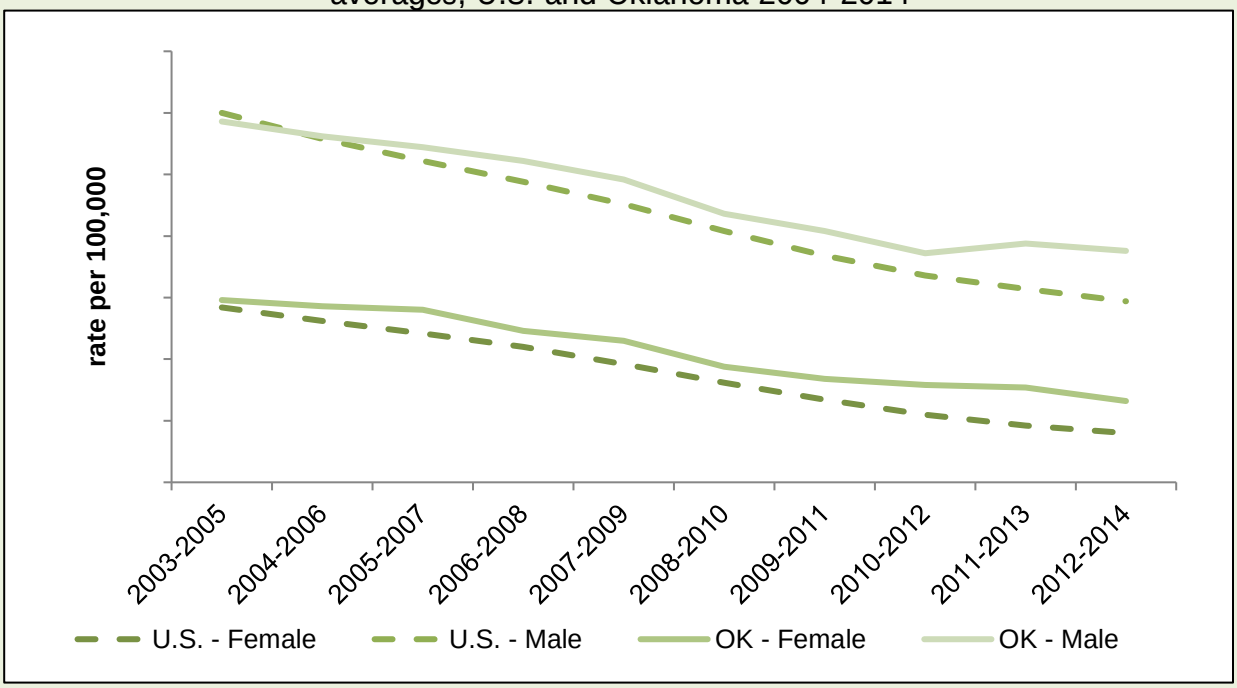
Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

Cervical cancer can be found early, or even prevented, by having regular Pap tests. If detected early, cervical cancer is one of the most successfully treatable forms of cancer.

Colorectal Cancer

The rates of invasive colorectal cancer have been declining over time in both the U.S. and Oklahoma among both men and women in the last decade since 2003 (Figure 16), but Oklahoma remains slightly above the national rates. Based on data presented in Figure 7, incidence in Oklahoma was highest among AI/AN males and lowest in White females in 2015. Mortality from colorectal cancer was highest among AI/AN males and lowest among White females in 2016 as seen in Figure 11.

Figure 16. Invasive Colorectal Cancer Age-Adjusted Incidence Rates, 3-year rolling averages, U.S. and Oklahoma 2004-2014



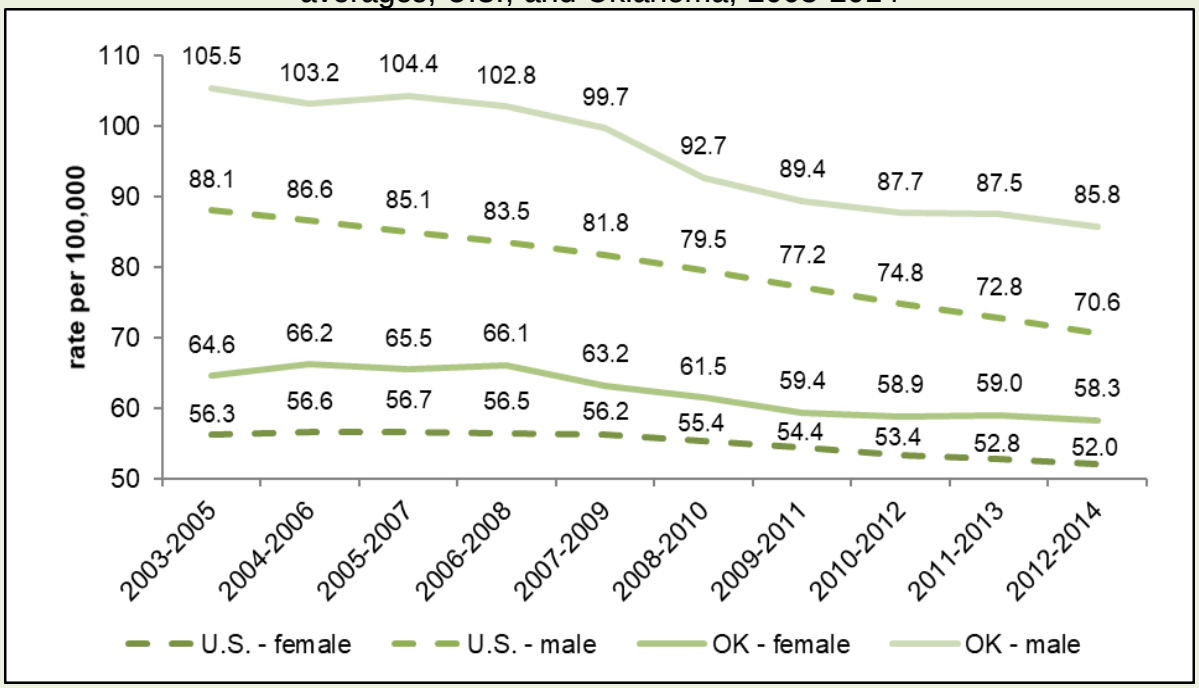
Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

Excluding skin cancer, colorectal cancer is the third leading cause of cancer in the U.S. However, due to the significant improvements in testing, more than a million people in the U.S. are colorectal cancer survivors. [33]

Lung and Bronchus Cancer

The rates of invasive lung and bronchus cancer have been declining over time in both the U.S. and Oklahoma among both men and women in the last decade since 2003 (Figure 17). In spite of this decline, incidence rates in Oklahoma remained higher than the U.S. as a whole across all years. Based on data presented in Figure 8, incidence in Oklahoma was highest among AI/AN males and lowest in AA/Black females in 2015. Mortality from lung and bronchus cancer was highest among AI/AN males and lowest among AA/Black females in 2016 as seen in Figure 12.

Figure 17. Lung and Bronchus Cancer Age-Adjusted Incidence Rates, 3-year rolling averages, U.S., and Oklahoma, 2003-2014



Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on January 10, 2018.

We must find ways to offer hope and encouragement to stop tobacco use through effective treatments. We must also promote early, evidence-based screening for lung cancer and "Erase the Stigma" that many lung cancer survivors feel.

Lead Organization

- Oklahoma State Department of Health, Center for the Advancement of Wellness

Objective

Utilize data to make informed decisions about patient care and public health initiatives, such as cancer screening programs. The data collected on cancer, risk factors and comorbidities will form a foundation for cancer research, treatment advances, and prevention efforts.

Initiatives and Strategies

1. Inform the public and health care professionals about the cancer incidence and mortality in Oklahoma.

a. Disseminate the annual Oklahoma Cancer Burden report and cancer data fact sheets through the partnership network and through regular updates when data is made available or by April each year.

2. Use cancer data for program planning and evaluation by state and local partners.

a. Disseminate the annual Oklahoma Cancer Burden report through the partnership network.

b. Disseminate an annual evaluation report and provide presentations among the partnership network.

3. Use chronic disease, including cancer and risk factors, data for program planning and evaluation by state and local partners.

a. Disseminate the annual Oklahoma Chronic Disease and Risk Factors Burden report through the partnership network.

Cross Cutting: Survivorship

Key Facts

A person is considered a cancer survivor from the time of diagnosis through the rest of his or her life. Family members, loved ones and caregivers are also a part of that experience.

More people are surviving cancer than before. This has created a need to develop education, resources and support for these survivors in order to increase their quality of life after treatment.[50]

Cancer survivors deal with the physical and emotional effects from cancer treatment and will also need supportive, comprehensive follow-up care after treatment ends.

Lead Organization

- American Cancer Society
- University of Oklahoma, Stephenson Cancer Center

Darla Thompson
Pryor, OK

Inoperable Hodgkin's disease at 23.

*That was Darla's **first** cancer diagnosis. Nearly 30 years later, she is still beating the odds, but those years haven't passed uneventfully. She has also dealt with a splenectomy, lumpectomy, hysterectomy, undefined spots on her brain and lungs, and most recently, a thyroidectomy – all related to her initial diagnosis, new tumor growth or the treatments she received.*

When Darla couldn't find local information, she contacted the American Cancer Society. They provided a tremendous amount of information and resources.

Over the last 30 years, Darla has given back by serving as the Relay for Life chair for 10 years and implementing support groups such as I Can Cope®, CanSurmount, Look Good… Feel Better®, Reach to Recovery® and a cancer support group.

Darla says her diagnoses have motivated her to hurry. "I want to hurry and raise more money for research… for all those who can't wait and will lose their lives… for those who will come after I am long gone. We all need to hurry."

[50] George Washington University Cancer Institute, Survivorship Series. Accessed at https://smhs.gwu.edu/gwci/survivorship/ncsrc/national-cancer-survivorship-center-toolkit on February 15, 2018.

Objective

Increase the number of cancer patients who receive support from the time of diagnosis and improve the quality of life for all cancer survivors through survivorship care.

Initiatives and Strategies

1. Increase the number of providers who share survivorship focused resources with cancer patients during and after treatment.

- **a.** Educate providers on resources such as the National Cancer Survivorship Resource Center Toolkit and the Facing Forward Series.

2. Increase the number of cancer survivors who reduce their risk for recurrence by quitting tobacco.

- **a.** Partner with cancer care providers to implement proactive referrals (of tobacco users) to the OTH.

3. Maintain a statewide Cancer Resource Directory

- **a.** Partner with cancer centers and other health care providers to promote the availability and benefits of the Cancer Resource Directory.
- **b.** Ensure that updated cancer resource information is provided to community partners such as the ACS, OTH and 211 on an annual basis.

Survivorship Programs and Resources:

- American Cancer Society Cancer Support -https://www.cancer.org/treatment.html
- CDC Cancer Survivorship – https://www.cdc.gov/cancer/survivorship/index.htm
- George Washington University Survivorship Series
  - National Cancer Survivorship Resource Center toolkit - https://smhs.gwu.edu/gwci/survivorship/ncsrc/national-cancer-survivorship-center-toolkit
  - Patient Navigation - https://smhs.gwu.edu/gwci/survivorship/ncsrc/national-cancer-survivorship-center-toolkit
  - Provider CME options - https://smhs.gwu.edu/gwci/survivorship/ncsrc/elearning
- LIVE**STRONG** Cancer Support - https://www.livestrong.org/we-can-help
- Local Resources provided by Cancer Centers
- National Cancer Institute Facing Forward Series - https://cancercontrol.cancer.gov/ocs/resources/ffseries.html

Cross Cutting: Technology

Key Facts

Electronic Health (or Medical) Records (EHR/EMRs) can be used by providers to link patients to improved access to care and to optimize the use of specialty care.

EHRs allow for integration of evidence-based screening and treatment guidelines into the practice workflow, facilitating system-level changes to reduce tobacco use, increase risk reduction strategies and increase recommended screening rates. [51]

Improved Care Coordination and Decision Making

Leveraging an EHR allows for the standardization of data, physician order sets, care plans, and helping to implement common treatment of patients using evidence-based medicine. It also provides access to experts for rural health care providers by sharing best practices and allowing for specialized care through telemedicine. [52]

EHRs can help providers make efficient, effective decisions about patient care through:

- improved aggregation, analysis, and communication of patient information,
- clinical alerts and reminders,
- support for diagnostic and therapeutic decisions, and
- built-in safeguards against potential adverse events

EHRs also have the potential to increase adherence to guidelines. They can be used to remind clinicians to document risk behaviors, deliver brief advice, prompt clinicians to recommend behavior change, connect patients with resources and increase routine screenings.

Ultimately, EHRs have become the new standard for oncology care delivery, bringing new opportunities to measure quality in real time and follow practice patterns as providers and patients seek ways to integrate this technology along with other forms of digital engagement

Accurate Information, Better Outcomes

LaWanna Halstead, VP of Clinical and Quality Initiatives Oklahoma Hospital Association

The use of EHRs and technology within health care is becoming an essential factor in improving health care delivery and patient outcomes.

EHRs improve care coordination by providing accurate information for patients who are seeing multiple specialists for various chronic diseases and transitioning between treatment settings. They are also crucial for the sustainability of treatment protocol changes, providing reminder prompts and increasing screening referrals.

Technology also makes it possible for providers to improve communication between their patients and other colleagues in order to enhance access to treatment advances.

[51] Linder, J. A., Rigotti, N. A., Schneider, L. I., Kelley, J. H. K., Brawarsky, P., & Haas, J. S. (2009). An Electronic Health Record–Based Intervention to Improve Tobacco Treatment in Primary Care: A Cluster-Randomized Controlled Trial. *Archives of Internal Medicine*, *169*(8), 781–787. http://doi.org/10.1001/archinternmed.2009.53

[52] Benefits of EHRs. Accessed at https://www.healthit.gov/providers-professionals/benefits-electronic-health-records-ehrs on February 15, 2018.

to produce more satisfaction in the process of care along with measurably better outcomes. [53]

Lead Organization

- Oklahoma Hospital Association
- Oklahoma Primary Care Association
- Project ECHO®, Oklahoma State University Center for Health Sciences

Objective

Increase the number of providers and cancer care providers who understand the benefits of using technology effectively to treat cancer and improve patient outcomes.

Initiatives and Strategies

1. Improve the understanding of available provider resources through EHR assessments.
   a. Review health system EHR's to determine available screening and documentation tools.
   b. Train providers on effective screening and documentation tools.

2. Increase the number of providers who use technology to improve patient care.
   a. Communicate effective tools regarding cancer prevention, treatment and survivorship.
   b. Partner with Oklahoma State Tribal Alliance on Health (OSTAH) to share electronic information on various clinical trials with rural providers and cancer patients.
   c. Encourage providers to participate in cancer-related Project ECHO® clinics to help inform best and up-to-date practices related to cancer.

"It's necessary to stay physically and mentally fit to keep yourself in the game. We are the only ones who can put limits on ourselves."
- T. Boone Pickens, Oil Industry Business Magnate and Financier, Oklahoman

Purcell, OK

[53] Fisch, M.J., Chung, A.E., Accordino, M.K., (2016). Using Technology to Improve Cancer Care: Social Media, Wearables, and Electronic Health Records. 2016 *ASCO Educational Book,* 200-208. https://media4.asco.org/176/edbook/pdfs/EDBK_156682.pdf

State Plan Evaluation

The Oklahoma Comprehensive Cancer Control Program is responsible for developing and implementing the evaluation for the Oklahoma Cancer Prevention and Control Plan 2017-2022. The evaluation plan outlines measures for short-term, intermediate, and long-term outcomes.

Data note: Baseline for most recent data available differs between indicators due to varying timeframe for implementation of survey. Data sources used are: National Immunization Survey-Teen (NIS-Teen), Behavioral Risk Factor Surveillance System (BRFSS), Youth Risk Behavior Surveillance System (YRBSS), Oklahoma Central Cancer Registry (OCCR) and Centers for Disease Control and Prevention Wonder (CDC Wonder).

Intermediate-term Outcomes				
State-level Indicator	**Baseline (year)**	**2022 Targets**	**Data Source**	**Time Frame**
Prevention				
Human Papillomavirus (HPV)				
Percent of females aged 13-17 vaccinated with HPV UTD vaccines *	43.6 (2016)	80.6	NIS-Teen	Annually
Percent of males aged 13-17 vaccinated with HPV UTD vaccines *	35.0 (2016)	87.0	NIS-Teen	Annually
*UTD (Up to Date) – Includes those with ≥3 doses, and those with 2 doses when the first HPV vaccine dose was initiated before age 15 years and time between the first and second dose was at least 5 months minus 4 days.				
Obesity (Physical Activity and Nutrition)				
Percent of adults who participated in 150 minutes or more of aerobic physical activity per week	46.6 (2015)	51.3	BRFSS	Biennially
Adult median intake of fruits per day	0.9 (2015)	1.3	BRFSS	Biennially
Adult median intake of vegetables per day	1.8 (2015)	2.1	BRFSS	Biennially
Percent of adolescents who ate fruit or drank 100% fruit juice one or more times daily in past 7 days	20.3 (2017)	22.4	YRBSS	Biennially
Percent of adolescents who ate vegetables one or more times daily in the past 7 days	9.3 (2017)	10.3	YRBSS	Biennially
Percentage of adults with obesity	32.8 (2016)	29.5	BRFSS	Annually
Percentage of adolescents with obesity	17.1 (2017)	15.3	YRBSS	Biennially

Tobacco				
Percent of adults who currently smoke	19.6 (2016)	15.8	BRFSS	Annually
Percent of adolescents (high school) who currently smoke	12.5 (2017)	11.0	YRBSS	Biennially
Early Detection and Diagnosis				
Percentage of adults age 50-75 who have had a FOBT in the past year or a sigmoidoscopy in the past 5 years plus FOBT in the past 3 years, or a colonoscopy in the past 10 years	59.4 (2016)	62.0	BRFSS	Biennially
Percent of women age 50-74 years who have had a mammogram in past two years	74.4 (2016)	78.1	BRFSS	Biennially
Percent of women aged 21-65 who have had a PAP test in past 3 years	78.8 (2016)	82.7	BRFSS	Biennially
Percent of high-risk individuals who have been screened for lung cancer	Available in 2018 (2017 data)	TBD	BRFSS	Annually
Survivorship/Quality of Life				
Among those who have ever been diagnosed with cancer, percent of adults who have reported that poor physical or mental health kept them from doing usual activities such as self-care, work, or leisure, on 14 or more of the past 30 days	24.1 (2016)	22.9	BRFSS	Biennially

Long term Outcomes				
State- Level Indicator	**Baseline (year) 2016**	**2022 Targets**	**Data Source**	**Time Frame**
Mortality				
Age-adjusted cancer mortality rate	182.0/ 100,000	170.5	CDC Wonder	Annually
Age-adjusted female breast cancer mortality rate	22.2	20.5	CDC Wonder	Annually
Age-adjusted cervical cancer mortality rate	2.5	2.4	CDC Wonder	Annually
Age-adjusted colorectal cancer mortality rate	16.8	16.2	CDC Wonder	Annually
Age-adjusted lung cancer mortality rate	49.4	41.3	CDC Wonder	Annually
Incidence	**Baseline (year) 2015**	**2022 Targets**	**Data Source**	**Time Frame**
Age-adjusted cancer incidence rate	486.4/ 100,000	453.5	OCCR	Annually
Age-adjusted female breast cancer incidence rate	145.4	138.4	OCCR	Annually
Age-adjusted cervical cancer incidence rate	8.5	7.7	OCCR	Annually
Age-adjusted colorectal cancer incidence rate	41.8	33.0	OCCR	Annually
Age-adjusted lung cancer incidence rate	66.9	54.5	OCCR	Annually

Oklahoma Chronic Disease Alliance – Oklahoma Comprehensive Cancer Network

Chair / Co-Chair	Key Reviewers
David Dude, BSN Health Systems Manager, State-Based American Cancer Society	William C. Dooley, MD, FACS Professor, Department of Surgery Stephenson Cancer Center University of Oklahoma
Jennifer Roysdon, MS, TTS Tobacco Treatment Systems Coordinator Oklahoma Hospital Association	Douglas C. Foster, DO, FACOS Associate Professor of Surgery Oklahoma State University
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	Jennifer L Vidrine, PhD Associate Director, Cancer Prevention and Control Director, Oklahoma Tobacco Research Center

Oklahoma Comprehensive Cancer Network Members	
Amity Ritze	Cancer Survivor
Ashley Watts	Stephenson Cancer Center
Brian Maves, PharmD, MS	Pfizer
Cameron Collins	OU Physicians
Carolyn Reconnu-Shoffner	Oklahoma Health Care Authority
Cheryl Moore, RN, CCM	Oklahoma Health Care Authority
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Darla Thompson	Cancer Survivor

J. Doug Matheny, MPH, CHES	Oklahoma Tobacco Research Center
Gail Sams	American Cancer Society
Greta Stewart	Cancer Survivor
Janice Dietrich RN, BSN	Health Care Service Corporation
Jenny K. Banner, MA	Founder, Oklahoma Lung Cancer Initiative
Joseph R. Johnson, D.O.	Oklahoma State University, Project ECHO
Joy Leuthard	Cancer Caregiver
Kacy Lowe	Leukemia and Lymphoma Society
Kasey Volpe	American Cancer Society
Kathy Musson	Oklahoma Society of Clinical Oncology
Katie Heggemeier	Merck
Linda Berlin	Health Care Service Corporation
Lindsey Diel	American Cancer Society
Margie Burkhart	Cherokee Nation
Mark Beutler	American Cancer Society
Ronnie Trentham	Cancer Survivor
Sara Low	OU Health Sciences Center
Sydney Tomlinson	Oklahoma Hospital Association
Tanya Henson, MPA	Oklahoma Health Care Authority
Tara M Jackson, MPH	Oklahoma State University, Project ECHO
Terri Bailey	American Lung Association

Special thanks go to the dedicated staff at the Oklahoma State Department of Health for their continued support and dedication to this plan.

Appendix A - Definitions

Health Disparities – A difference in health that is closely linked with social or economic disadvantage. Health disparities negatively affect groups of people who have systematically experienced greater social or economic obstacles to health. These obstacles stem from characteristics historically linked to discrimination or exclusion such as race or ethnicity, religion, socioeconomic status, gender, mental health, sexual orientation, or geographic location. Other characteristics include cognitive, sensory, or physical disability.

Prevention – Making healthy choices such as avoiding tobacco, limiting alcohol consumption, maintaining a healthy weight, and protecting your skin from the sun are all ways to help prevent cancer. Receiving the full round of HPV vaccine as well as screening for cervical and colorectal cancers as recommended are also ways to contribute to cancer prevention.

Early Detection – The use of screening tests to detect cancers early often leads to more effective treatment with fewer side effects. Patients whose cancers are found early are more likely to survive than are those whose cancers are not found until symptoms appear.

The following screening tests have been found to detect cancers accurately and decrease the chances of dying from cancer.

- **Breast Cancer:** Mammography/ Clinical Breast Exam (CBE)
- **Cervical Cancer:** Pap test + Human Papilloma Virus (HPV) test
- **Colorectal Cancer:** Fecal Occult Blood Test (FOBT) + Sigmoidoscopy/Colonoscopy
- **Lung Cancer:** Low-Dose Computed Tomography (LDCT)

Diagnosis – Rates of newly diagnosed cancer cases (incidence) are one way to measure progress against cancer. Another important measure is the proportion of cancers diagnosed at a late stage. he stage of a cancer shows how far the disease has progressed. The earlier stage at diagnosis, the better the chances for a cure.

Treatment – There are various options regarding how to treat your cancer, based on your diagnosis and staging. [54]

Types of Cancer Treatment

- **Surgery** is used to diagnose and treat cancer.
- **Radiation Therapy** uses high-energy particles or waves to damage or destroy cancer cells.
- **Chemotherapy** refers to the use of medications or drugs to treat cancer.

[54] American Cancer Society Treatment and Side Effects. Accessed at http://www.cancer.org/treatment/treatmentsandsideeffects/index on March 3, 2018.

- **Hormone Therapy**[55] is a type of cancer treatment that slows or stops the growth of cancer that uses hormones to grow.
- **Targeted Therapy** is a newer type of cancer treatment that uses drugs or other substances to more precisely identify and attack cancer cells, usually while doing little damage to normal cells.
- **Immunotherapy** uses your body's own immune system to help fight cancer.

Survivorship – Cancer patients are considered survivors from the day they are diagnosed. Survivorship aims to relieve symptoms, side effects, and psychosocial stressors of cancer treatment for the patient, family, and caregivers. Cancer patients and their families can benefit from intervention at any time during the cancer journey, from the time of diagnosis, through treatment and into recovery.

[55] National Cancer Institute, Hormone Therapy. Accessed at https://www.cancer.gov/about-cancer/treatment/types/hormone-therapy on September 14, 2017.

Appendix B – Additional Resources

Barriers to Health Care

Food deserts are a big reason behind Oklahomans' poor health. E Rex. Accessed at http://okpolicy.org/food-deserts-big-reason-behind-oklahomans-poor-health/ on February 7, 2018.

Healthy People 2020 – Access to Health Care. Accessed at https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services on April 12, 2018.

Taber, J. M., Leyva, B., & Persoskie, A. (2015). Why do People Avoid Medical Care? A Qualitative Study Using National Data. *Journal of General Internal Medicine*, *30*(3), 290–297. http://doi.org/10.1007/s11606-014-3089-1

Tulsa's Story of Health Determinants

Blevins, K. (2011, May). Justice for All. Accessed at http://www.tulsapeople.com/Tulsa-People/May-2011/Justice-for-all/ on April 10, 2018.

Looking at a Life Expectancy Gap. Accessed at http://www.newson6.com/Global/story.asp?s=8063603&clienttype=printable on February 7, 2018.

Risk Reduction: Obesity

Nutrition and Physical Activity Strategies for Cancer Prevention in Current National Comprehensive Cancer Control Program Plans – Accessed at http://www.ncbi.nlm.nih.gov/pubmed/26994988 on February 28, 2018.

Oklahoma Health Improvement Plan –Accessed at http://ohip2020.com/ on May 23, 2016.

Risk Reduction: Tobacco

American Cancer Society's Tobacco-Related Cancers Fact Sheet – Accessed at http://www.cancer.org/cancer/cancercauses/tobaccocancer/tobacco-related-cancer-fact-sheet on February 15, 2018.

Oklahoma Health Improvement Plan – Accessed at http://ohip2020.com/ on February 7, 2018.

Oklahoma State University Tobacco-Free Campus Policy – Accessed at http://americashealthiestcampus.okstate.edu/policies on February 28, 2018.

Just the Facts: State-Specific Smoking-Related Cancer Deaths. Accessed at http://cancerstatisticscenter.cancer.org on February 15, 2018.

Youth Risk Behavior Surveillance System 2017

Priority Area: Breast Cancer

Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, Prevalence and Trends Data. Accessed at http://www.cdc.gov/brfss/data_tools.htm on February 7, 2018.

Priority Area: Cervical Cancer

Centers for Disease Control and Prevention, Cervical Cancer, Accessed at http://www.cdc.gov/cancer/cervical/basic_info/prevention.htm on February 7, 2018.

Priority Area: Colorectal Cancer

Achieving 80% by 2018 Screening Goal Could Prevent 200,000 Colon Cancer Deaths in Less Than 2 Decades. Accessed at http://www.cancer.org/cancer/news/news/impact-of-achieving-80-by-2018-screening-goal on February 15, 2018.

Oklahoma Colorectal Cancer Early Detection Program 1502 Grant Narrative

Priority Area: Lung Cancer

Opportunities to address lung cancer disparities among African Americans. Accessed at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4298372/ on February 7, 2018.

Lung Cancer Screening Guidelines and Recommendations Accessed at http://www.cdc.gov/cancer/lung/pdf/guidelines.pdf on February 7, 2018.

What Screening Tests Are There? Accessed at http://www.cdc.gov/cancer/lung/basic_info/screening.htm on February 7, 2018.

What Are the Risk Factors for Lung Cancer? Accessed at http://www.cdc.gov/cancer/lung/basic_info/risk_factors.htm on February 7, 2018.

Cross-Cutting: Communication

Tobacco Settlement Endowment Trust, Shape Your Future Campaign. Accessed at http://shapeyourfutureok.com/ on February 7, 2018.

Cross-Cutting: Patient-Centered Care Coordination

Patient-Centered Communication and Shared Decision Making. Accessed at https://www.ncbi.nlm.nih.gov/books/NBK202146/ on February 15, 2018.

Cross-Cutting: Surveillance and Epidemiology

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We can take action towards our dream of a cancer free future knowing it is **our story to write**.

"The worst thing that happens to you may be the best thing for you if you don't let it get the best of you."
- Will Rogers,
Oklahoma's Favorite
Son Humorist,
Actor, Author,
Aviator, Movie Producer,
Cherokee, Oklahoman

Seward, OK