

OKLAHOMA CANCER PREVENTION & CONTROL PLAN

OKLAHOMA COMPREHENSIVE
CANCER NETWORK



CANCER IS
NOT OK!

2023

2028

Dear Fellow Oklahomans,



Cancer continues to be the second leading cause of death in Oklahoma. An estimated 22,000 Oklahomans are diagnosed with cancer, and over 8,000 will die from these diseases each year. There are approximately four million residents in Oklahoma, making it likely that each of us know at least one but possibly up to three people who have cancer today. The good news is many cancers can be prevented. Nearly half of cancer deaths can be linked to modifiable risk factors, such as diet, physical activity, excess body mass and commercial tobacco use. Also, regular screening can result in early detection of many cancers when treatment is more likely to be successful.

The Oklahoma Comprehensive Cancer Control Network (OCCN) is pleased to present the third edition of the Oklahoma Cancer Prevention & Control Plan. In partnership with the Oklahoma State Department of Health Comprehensive Cancer Control program, we will use this Plan to guide our efforts to help prevent and address cancer across Oklahoma, particularly in communities and populations of highest risk for cancer incidence and mortality.

This Plan will highlight goals designed to focus on the most pressing cancer-related needs of our residents, along with objectives and strategies that are unique to each community with the highest cancer burden. While we recognize that all people and cancers are important, we will address five major cancer sites (breast, cervical, colorectal, lung and prostate) including childhood cancer(s). In addition, we have included focused activities for decreasing associated risk factors.

The OCCN is a network made up of individuals from cancer prevention, care, and treatment organizations, and survivors who continually volunteer to share their expertise and experience(s). We are committed to supporting activities that encourage healthy lifestyles, promote recommended cancer screening guidelines and testing, increase access to quality cancer care and improve upon the mental and physical well-being of cancer survivors. The OCCN serves all Oklahomans regardless of age, income, employment, insurance status, race or sexual orientation.

It is a tremendous job to tackle the cancer epidemic but together we can achieve an equitable state of health, a future Oklahoma free of the burden associated with cancer. If you or your organization would like to become a member of the OCCN, we invite you to email occn@health.ok.gov or visit our [webpage](#) for more information.

Cancer Is Not OK!

Sincerely,

Mark Doescher, MD, MSPH

Inasmuch Foundation Endowed Chair in Cancer Screening, Outreach, and Education
Associate Director, Community Outreach and Engagement
Stephenson Cancer Center
Professor, Family and Preventive Medicine
OCCN Lead

REDUCING THE BURDEN OF CANCER
IN OKLAHOMA

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Introduction



GOALS AT A GLANCE

This Plan follows the direction of the National Comprehensive Cancer Control Program, which is to prevent cancer, reduce deaths from cancer and ensure the best possible quality of life for people living with cancer.

Primary Prevention

Goal I: Decrease the risk of cancers associated with unhealthy behaviors:

- Obesity
- Commercial tobacco use and exposure
- Exposure to human papillomavirus (HPV)

Screening & Early Detection

Goal II: Decrease the proportion of late-stage diagnosis of:

- Breast cancer
- Cervical cancer
- Colorectal cancer
- Lung cancer
- Prostate cancer

Cancer Survivorship

Goal III: Decrease the negative impact on the physical and psychological health of persons diagnosed and living with cancer:

- Adults
- Children and adolescents

Population Health

Overarching Goal: To ensure that Oklahoma communities with worse cancer outcomes have the best opportunities for improving health.

CANCER PREVENTION & CONTROL PLAN

The Oklahoma Cancer Prevention & Control Plan (“the Plan”) is guided by the National Comprehensive Cancer Control Program (NCCCP) priorities that focus coalition efforts on evidence-based interventions (EBIs) and actionable priorities across the National Institute of Health’s [Cancer Control Continuum](#).

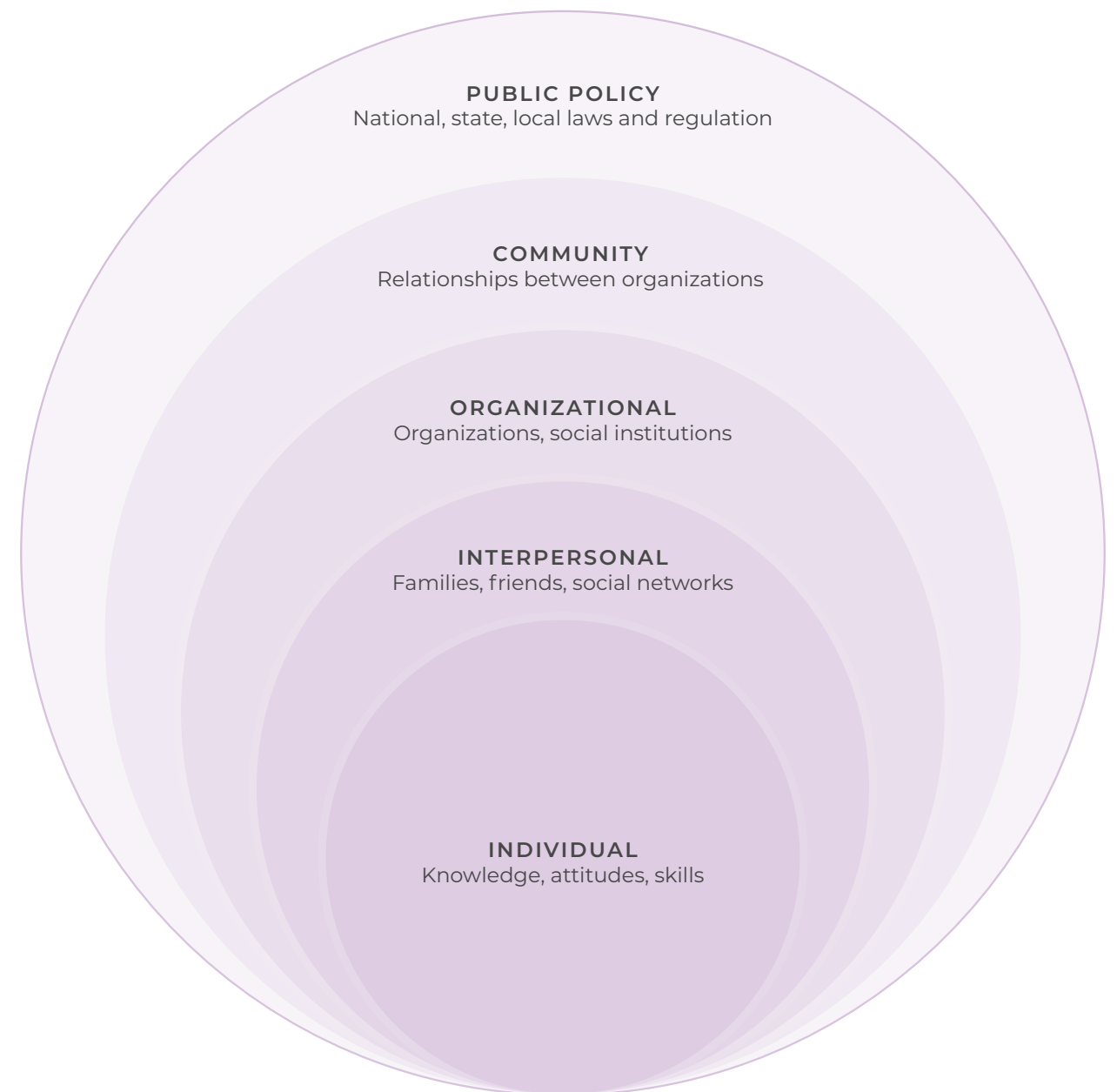
The Plan focuses on four areas: Primary Prevention, Screening & Early Detection, Cancer Survivorship and Population Health.

FOCUS AREAS	
PRIMARY PREVENTION	To reduce people’s risk of developing cancer.
SCREENING & EARLY DETECTION	To make sure everyone gets the right cancer screening at the right time.
CANCER SURVIVORSHIP	To help cancer survivors live longer, healthier lives.
POPULATION HEALTH	To make sure communities with worse cancer outcomes have the best opportunities for improving health.

The Socio-Ecological Model (SEM) of population health is the foundation for the Plan. The SEM is operationalized by addressing socioeconomic factors and put into action by using the policy, systems and environmental (PSE) change approaches.

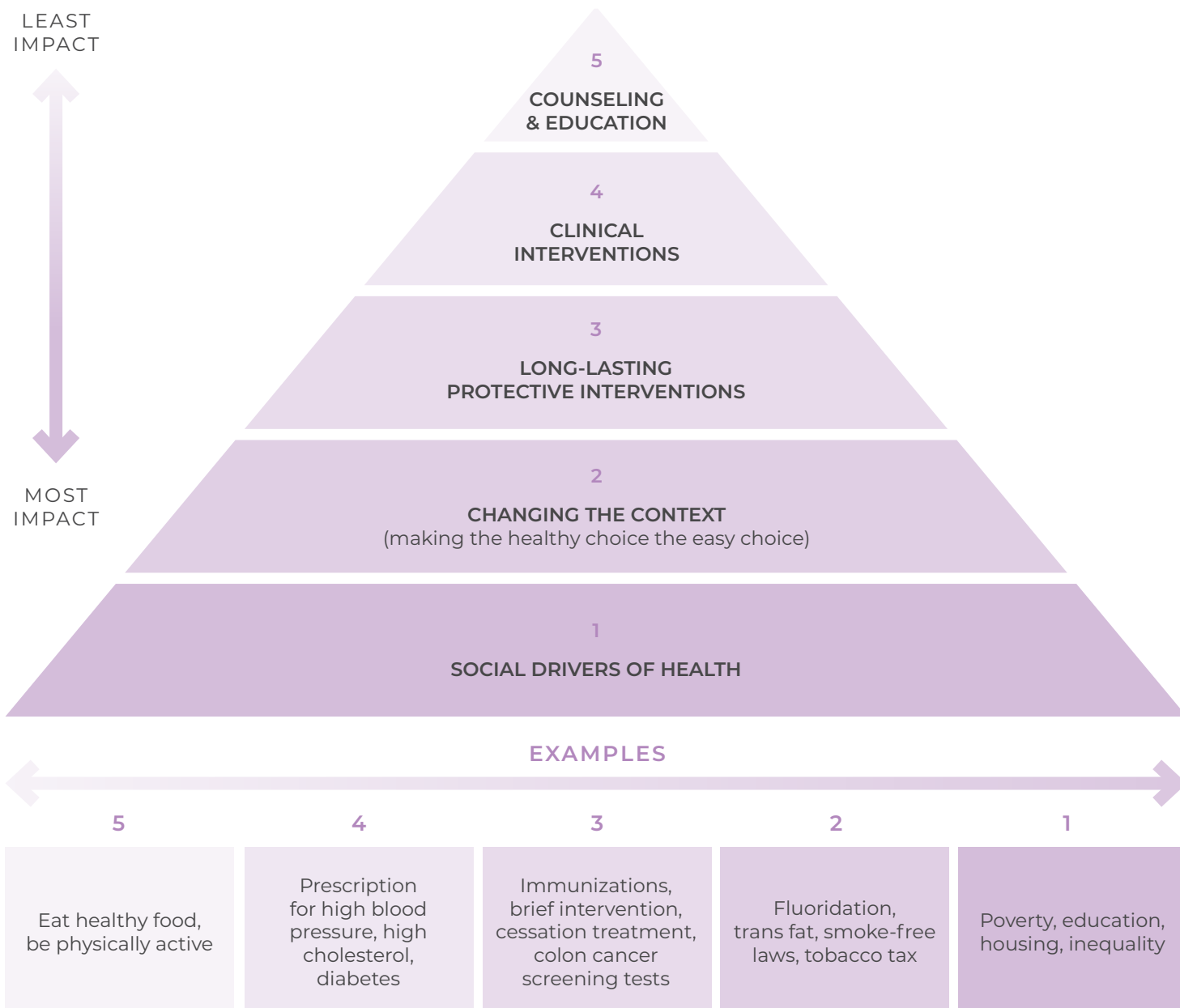
The SEM is used when developing sustainable solutions for individuals and communities because it recognizes that multiple factors at multiple levels can affect the health of a population. The SEM example below shows that organizational, community, and public policy factors are important in determining the behaviors of individuals and their exposures to disease risks.¹

SOCIO-ECOLOGICAL MODEL OF POPULATION HEALTH



Another example of how the SEM is operationalized can be seen in the following Centers for Disease Control and Prevention (CDC) Health Impact Pyramid. The pyramid shows the increasing impact of moving from one-on-one approaches to addressing socioeconomic factors.¹

HEALTH IMPACT PYRAMID



The SEM can be put into action by using the PSE change approach — a strategy for providing accessible and healthy options to all community members and for making healthy options the easier choice. These focused efforts can minimize cancer burden for all Oklahomans by developing long-term sustainable solutions “that extend beyond individual behaviors and into the structures, systems, and environments such as school, work, neighborhood, etc. of the individual. These approaches also address health equity issues.”¹ The diagram below highlights examples of various PSE change strategies. For more information on PSE Change in Comprehensive Cancer Control, please consult the [American Cancer Society’s PSE Change Guide](#).

EXAMPLES OF PSE CHANGE STRATEGIES

SETTING	POLICY CHANGE (legislative or organizational)	SYSTEMS CHANGE (organizational rules, structures or processes)	ENVIRONMENTAL CHANGE (physical environment)
SCHOOL	Prohibiting the sale of soda on school grounds.	Incorporating local produce into the lunch menu and integrating lessons on nutrition into classrooms.	Increasing shade in high-use areas of schools, such as lunch areas, walkways, playgrounds and bus stops.
WORKPLACE	Implementing a comprehensive tobacco-free worksite policy that addresses all burned tobacco products, e-cigarettes (vaping), hookahs and smokeless tobacco.	Providing employees access to breast cancer, cervical cancer and colorectal cancer screenings with no out-of-pocket costs.	Providing employees an on-site workout room with a variety of equipment and offering classes such as basic yoga or cardio routines.
COMMUNITY	Educating decision makers about the benefits of providing palliative care for patients with cancer from the time of diagnosis.	Providing cancer screening and treatment navigation for groups experiencing disadvantages.	Launching a complete streets initiative to ensure neighborhood streets are accessible for walking and biking.

Sources for table:

Townsend JS, Sitaker M, Rose JM, Rohan EA, Gardner A, Moore AR. Capacity building for an implementation of policy, systems, and environmental change: results from a survey of the National Comprehensive Control Program. Population Health Management 2019;22(4):330–338. Accessed at https://www.acs4ccc.org/wp-content/uploads/2022/02/PSE-in-CCC-Guide_FINAL.pdf.

National Center for Chronic Disease Prevention and Health Promotion. Communities Putting Prevention to Work (CPPW). Centers for Disease Control and Prevention. March 7, 2017. Accessed August 8, 2020. www.cdc.gov/nccdphp/dch/programs/communitiesputtingpreventiontowork/communities/.

Each Plan priority will include a PSE change approach, an evidence-based intervention (EBI), and an objective which will progress from year to year resulting in accomplishing the five-year objective. Each Plan objective will follow the CDC recommendation of being SMARTIE (see below).

- S** **SPECIFIC**
 Does the objective state the outcome that you aim to accomplish? Among what population, by when and by how much?
- M** **MEASURABLE**
 How will you track your progress and know when milestones have been reached and the objective achieved?
- A** **ATTAINABLE**
 Is the objective challenging but achievable within the capabilities of your program and the community being served? Do you have enough resources?
- R** **RELEVANT**
 Is the objective aligned with the priorities of your program and Notice of Funding Opportunity (NOFO) requirements? Is it meaningful to the population of focus and community being served?
- T** **TIME-BASED**
 Is there a deadline to achieve the objective? Are there review points to assess progress?
- I** **INCLUSIVE**
 Have you invited, considered and incorporated input from the population of focus and your community partners where appropriate?
- E** **EQUITABLE**
 Does the objective address the unique needs and circumstances of different populations, increase quality services where needed and seek to address cancer screening disparities?

Numerous EBIs have been shown to reduce the burden of cancer in communities; however, the Plan does not outline all potential EBIs. Instead, the Plan will highlight key priorities and focus on implementation of strategies and activities deemed most feasible by the Oklahoma Comprehensive Cancer Network (OCCN). While each PSE will be implemented throughout the entire state, the strategies will also ensure that individuals at high risk for and/or most disproportionately affected by cancer will also benefit.

The strategies outlined within the Plan are based on available research, OCCN membership buy-in, resources for implementation and promising program practices. Each plan strategy will guide the selection of related EBIs. These interventions will advance plan priorities and support national, state, tribal and local activities that expand reach to have the greatest effect. See the [OCCN website](#) for more information and to check progress of current plan activities.

This Plan contains measurable objectives and targets that align with state and national goals and are based on current trends. The OCCN will continually track progress and share results with stakeholders and partners to gauge movement, identify gaps and adjust as needed. A variety of data sources, including Oklahoma surveillance data, were used to determine baseline measures for Plan objectives. In some cases, where no data source or baseline is identified, one may need to be established to support the Plan's implementation. Below is a simple diagram of this process.



CANCER BURDEN

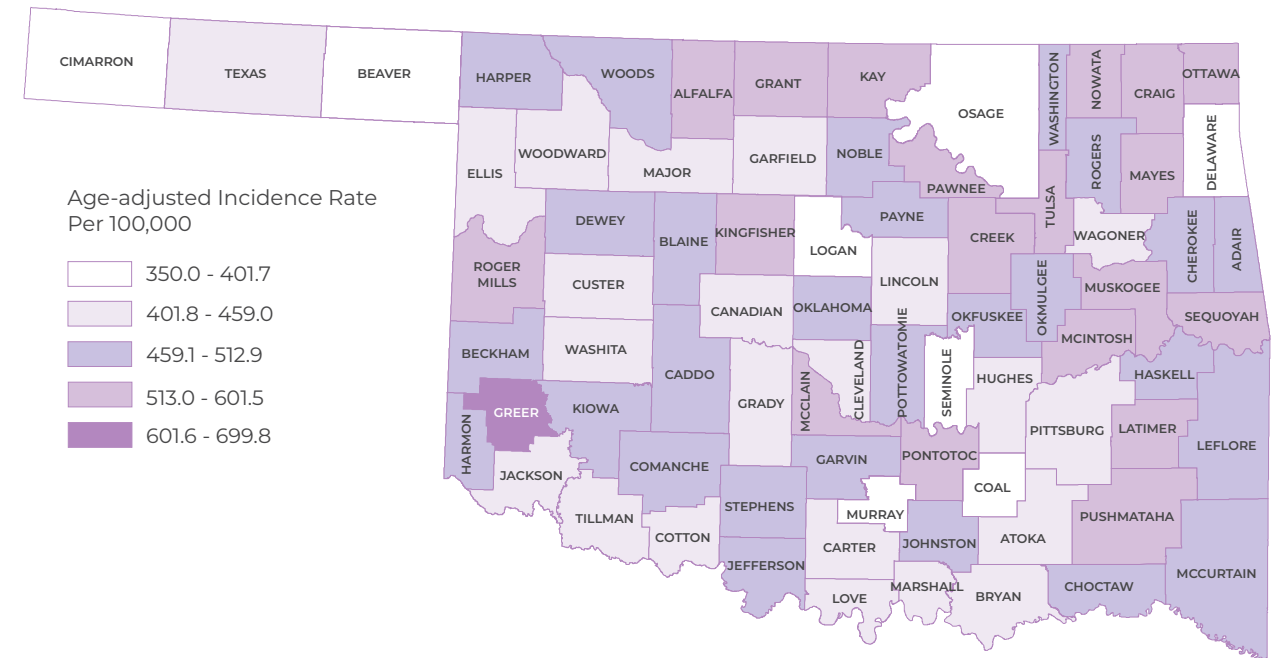
The American Cancer Society (ACS) defines cancer burden as how the number of cancer cases and results of cancer affect a country, community, family or individual. For example, the cancer burden for a specific person depends on their risk factors for cancer, how well they manage their modifiable risk factors, how closely they follow the recommended cancer screening schedule, if they develop cancer and their access to high-quality cancer treatment.

To detect cancer at its earliest stages and to prevent these diseases, it is imperative to know which cancers are being detected and diagnosed, the populations those cancers are impacting and where these populations are located. The Oklahoma Cancer Prevention and Control Plan provides information for planning and evaluation of cancer prevention and control activities throughout the state while demonstrating the importance of collecting and using the most recent population-based data available.

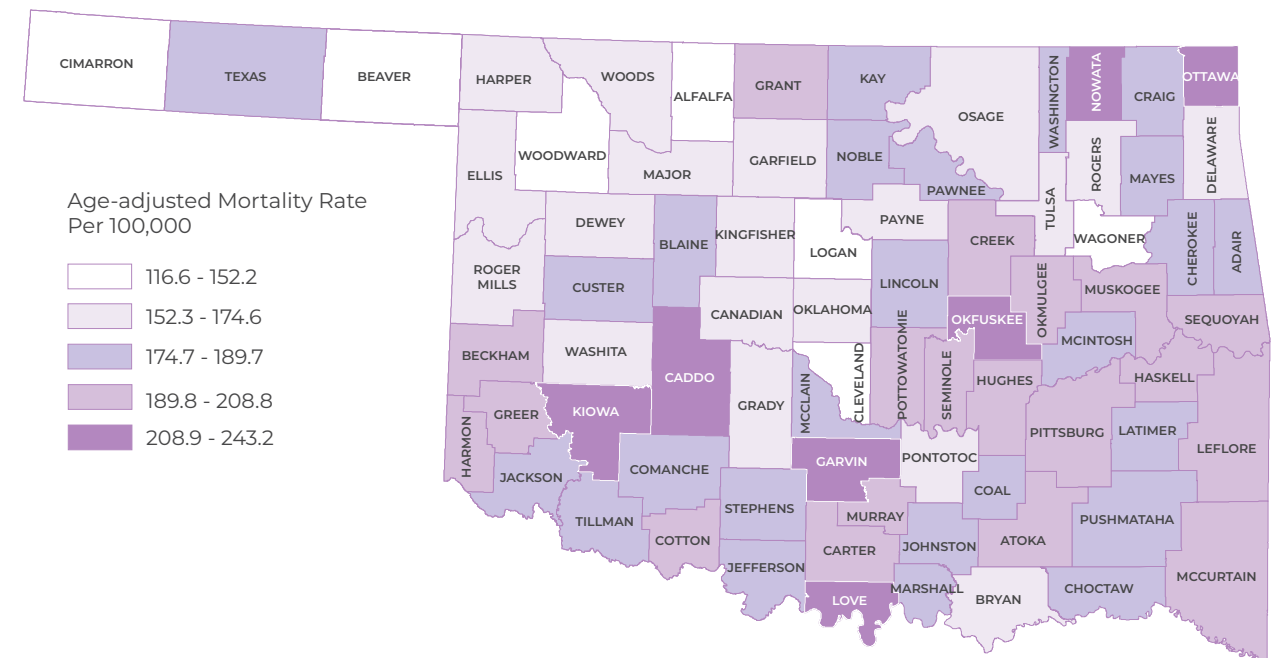
Readers are encouraged to continuously consult the Plan, as the goals, objectives, and strategies within may be revised as cancer burden data becomes available. This ongoing assessment of data will serve to assist the OCCN and future stakeholders in the development and improvement of cancer prevention and control initiatives throughout the state. For more information on the cancer burden in Oklahoma, please visit the [Oklahoma Central Cancer Registry website](#) for the latest Oklahoma Cancer Burden Report.

The following maps highlight Oklahoma's overall age-adjusted cancer incidence (number of new cancer diagnoses or cases within a group) and mortality (number of people who die from cancer) by county. The areas determined to be at highest risk are where the OCCN and partners focus much of their efforts.

OVERALL CANCER INCIDENCE, 2016-2020



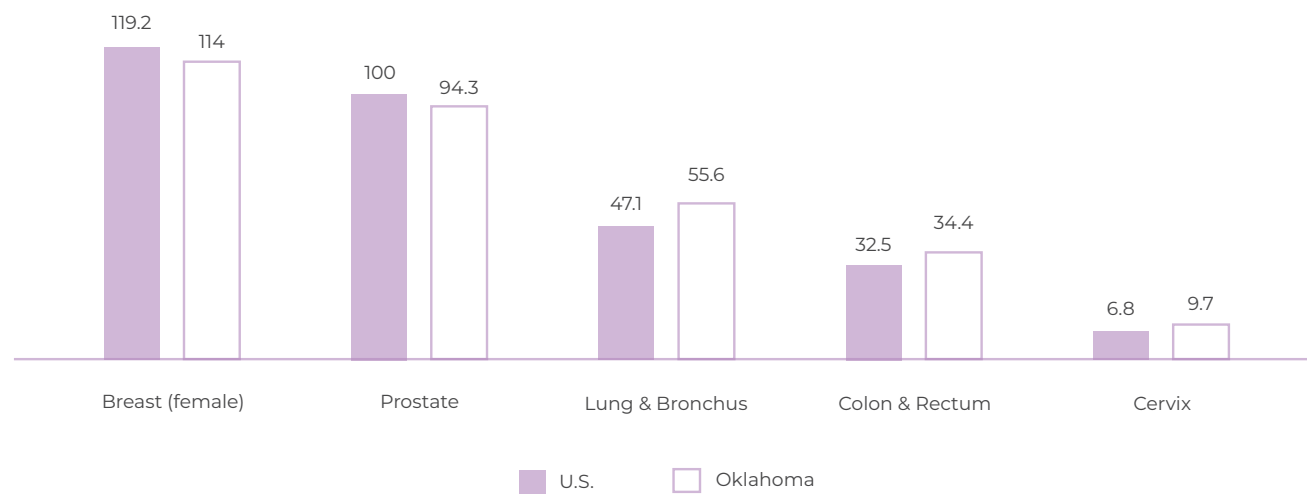
OVERALL CANCER MORTALITY, 2016-2020



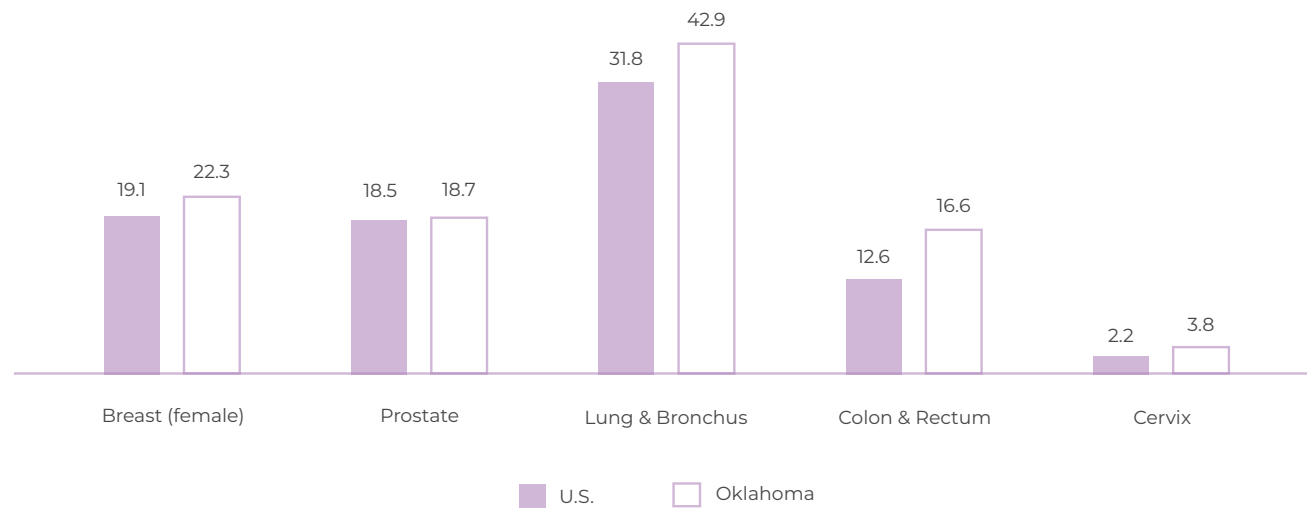
Source for maps above: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Oklahoma Central Cancer Registry (OCCR) 2016 to 2020, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE).

Although the elimination of all cancers would be ideal, the Plan will focus on five cancers. These cancers, referred to as “priority cancers,” have been determined to have the highest incidence and/or mortality rates for Oklahomans. The Plan will include multi-component evidence-based interventions designed to prevent and control these cancers and their risk factors for the next five years. These priorities, including survivorship and childhood cancer, will be discussed in greater detail throughout the Plan. The following graphs highlight incidence and mortality rates for these cancers in Oklahoma as compared to the U.S.

OCCN PRIORITY CANCERS BY RATES OF NEW CANCERS



OCCN PRIORITY CANCERS BY RATE OF CANCER DEATHS



Source for graphs above:

U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2022 submission data (1999-2020): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute. Data note: U.S. and Oklahoma, 2020, All Races and Ethnicities, Male and Female Rate per 100,000 people. <https://gis.cdc.gov/Cancer/USCS/#/AtAGlance/>.

PATIENT ECONOMIC BURDEN

Cancer care is expensive, and even more so for those without insurance or those who are under-insured. Cancer patients and survivors shoulder a large amount of cancer care costs, and cancer does not impact all patients equally. Direct costs can often lead to financial hardship, including difficulty paying medical bills, high levels of financial distress and delaying or forgoing care altogether. Indirect costs can include lodging near treatment, cosmetic items to address side effects, fertility treatments and lost productivity. It is also important to note that even the most effective therapies mean little when they are unaffordable and/or unattainable.

CANCER RISK FACTORS

It is unclear as to why one person may develop cancer while another person does not. However, there are certain factors that are linked to a person’s risk of developing cancer. Risk factors such as commercial tobacco use or obesity can, in theory, be changed or modified. Risk factors such as age, race or family history are considered to be non-modifiable because they are outside a person’s control. The objectives within this Plan include both modifiable and non-modifiable risk factors.

Sources for graphics 1-2:

1: American Association for Cancer Research. Accessed at <https://www.aacr.org/about-the-aacr/newsroom/news-releases/cancer-care-costs-in-the-united-states-are-projected-to-exceed-245-billion-by-2030/> on 12FEB2024:02:18:16.

2: U.S. Census Bureau, 2021 American Community Survey 2022. Accessed at <https://www.census.gov/quickfacts/fact/table/OK/> on FEB2024:02:23:02.

1

National costs for cancer care are expected to reach

\$246 Billion by 2030.

2

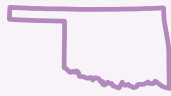



1 in 7
(13.8%) Oklahomans under age 65 do not have **insurance.**

LOOKING AHEAD: A CALL TO ACTION

To improve cancer outcomes, it is essential to incorporate healthy lifestyle choices while avoiding unhealthy behaviors that can lead to an increased risk of developing certain cancers. Efforts to prevent cancer start at home, school, work and within the community.

Addressing cancer needs requires the aligning of many individuals and agencies, as well as 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.

Below you will find specific actions that individuals in these sectors can work to engage in, promote, strengthen and focus partnerships to provide the maximum benefit to people in their communities and make the greatest collective impact on prevention and control of cancer in Oklahoma.

 <p>OKLAHOMANS</p>	<ul style="list-style-type: none"> • Eat a healthy diet. • Find ways to be physically active. • Maintain a healthy weight. • Avoid commercial tobacco use.
 <p>HEALTH CARE PROFESSIONALS & ORGANIZATIONS</p>	<ul style="list-style-type: none"> • Talk to every patient about healthy lifestyle choices. • Make healthy lifestyle recommendations clear, direct and personal. • Utilize Electronic Health Record (EHR) systems to promote HPV vaccine and screening reminders.
 <p>BUSINESSES & EMPLOYEES</p>	<ul style="list-style-type: none"> • Provide access to and support physical activities for your employees. • Provide healthy food options at meetings and events. • Ensure insurance coverage provides for tobacco cessation, healthy lifestyle change and cancer screening.
 <p>GOVERNMENT & POLICY MAKERS</p>	<ul style="list-style-type: none"> • Ensure community infrastructure provides access to healthy lifestyle options, such as physical activity and fresh foods. • Support PSE changes for schools and communities to improve healthy options and health education.



Primary Prevention

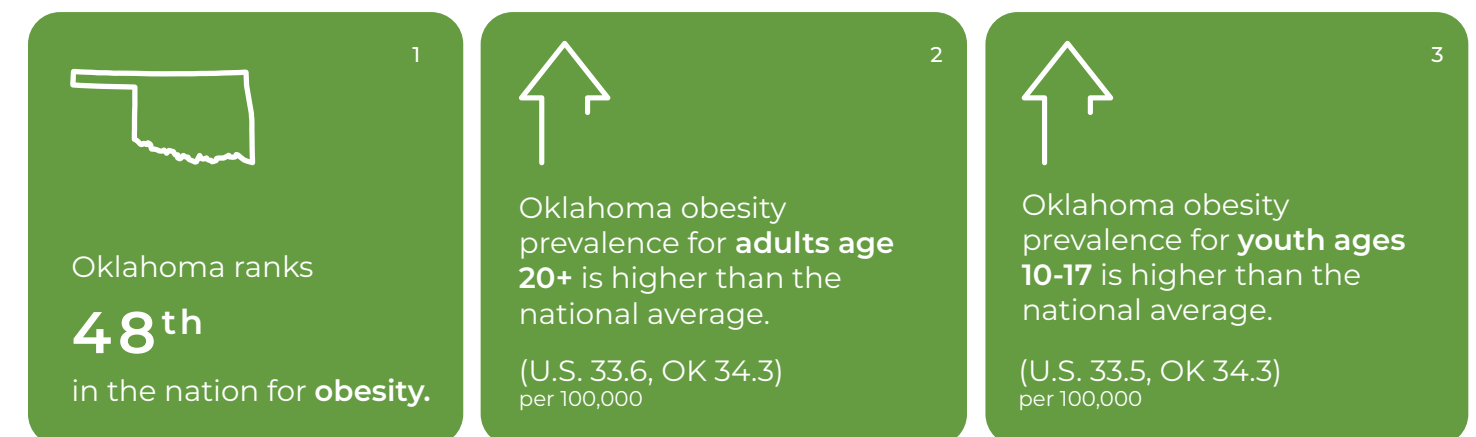
GOAL I: Decrease the risk of cancers associated with unhealthy behaviors.

The easiest way to fight cancer is to prevent it before it starts. There are numerous lifestyle behaviors that can influence the likelihood of getting cancer. This section focuses on the prevention of cancers through healthy behaviors. Unfortunately, Oklahoma consistently ranks poorly in multiple key health status indicators, including:

- 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 consumption.
- High rate of physical inactivity.

OBESITY

The Centers for Disease Control and Prevention (CDC) defines being overweight or having obesity as “weight that is higher than what is considered healthy for a given height.”² The OCCN recognizes the crucial relationship between obesity prevention and cancer control. Obesity is not only one of the leading causes of preventable life-years lost among adult Americans, but the “cancers linked to this disease make up 40% of all cancers diagnosed in the United States each year.”³ To date, there are approximately 13 different cancers that are linked to obesity. The Plan highlights strategies aimed at reducing obesity among Oklahoma youth, including cancer patients and survivors, by supporting interventions that reinforce the sustainability of healthy behaviors such as physical activity and nutrition throughout adulthood.³ For more information about the prevention of obesity within Oklahoma, please refer to the [OSDH Obesity Prevention Plan](#).



Sources for graphics 1-3 (opposite):

1-2: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/Obesity> on 12FEB2024:10:55:25.

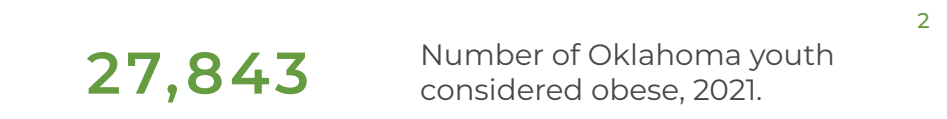
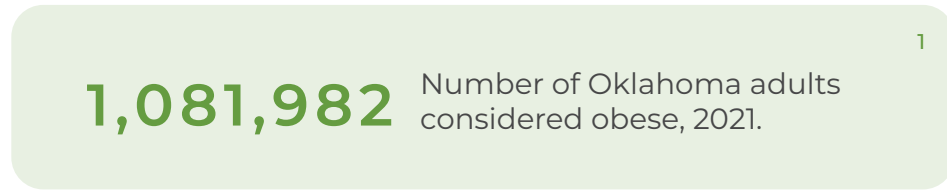
3: National Survey of Children's Health, U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), 2020-2021. Accessed at https://www.americashealthrankings.org/explore/measures/youth_overweight/OK on 14FEB2024:6:28:27.



Obesity is a complex issue with a variety of causes

including behavior, environmental, and social factors. Oklahoma is predicted to become the state with the highest obesity rate by 2030 if drastic action is not taken. The State Obesity Plan Stakeholders Group is comprised of over 300 individuals representing state agencies, community-based organizations, Tribal Nations, health care systems and other types of organizations who share the common vision of enhancing the wellbeing of Oklahomans. Together, these organizations are breaking down silos to improve our nutrition environment, built environment and create a healthier overall environment.”

Lauren Larson
Lead Wellness Coordinator, Community Analysis & Linkages, Oklahoma State Department of Health



Sources for graphics 1-3:

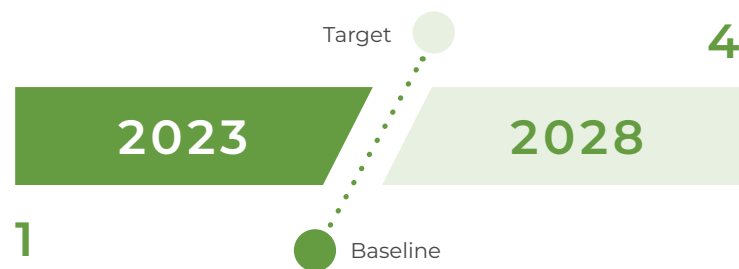
1: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System 2016 to 2020 on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at <http://www.health.ok.gov/ok2share> on 12FEB2024:02:40:56.

2: Oklahoma State Department of Health (OSDH), Center for Health Statistics, Health Care Information, Youth Risk Behavior Survey 2017 to 2021, on Oklahoma Statistics on Health Available for Everyone (OK2SHARE). Accessed at <http://www.health.ok.gov/ok2share> on 12FEB2024:02:44:23.

3: Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Obesity and Cancer. Accessed at <https://www.cdc.gov/cancer/obesity/index.htm> on 12FEB2024:10:58:09.

OBJECTIVE: Increase the number of partnerships that focus on the prevention of obesity for children, ages 0-17 years, from 1 to 4.

OBESITY PARTNERSHIPS - CHILDREN

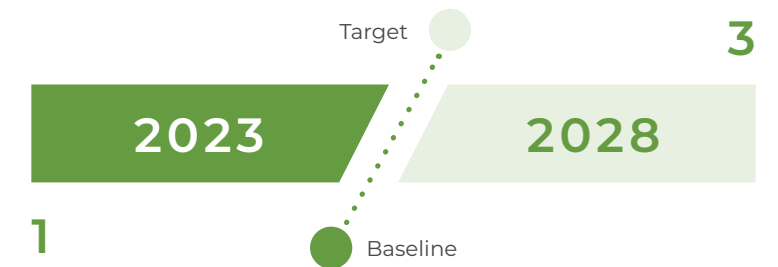


Baseline source: OCCN Evaluation Report 2023.

OBJECTIVE: Increase the number of programs/systems that support the prevention of obesity for children, ages 3-5 years, from 1 to 3.

Baseline source: OCCN Evaluation Report 2023.

OBESITY SUPPORTS - CHILDREN



OBESITY STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote campaigns and electronic applications designed to improve healthy eating and physical activity to reduce the risk of developing obesity-related cancers.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> Individual Community 	Males & Females: <ul style="list-style-type: none"> Ages 3 and older. Have low socioeconomic status/high social vulnerability index.
Support implementation of policies, environmental changes and messaging that promote healthy eating and physical activity to reduce the development of obesity-related cancers.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> PSE Change Approach 	<ul style="list-style-type: none"> Reside in areas with high rates of poor nutrition and physical inactivity.
Educate the patient, provider and the public on obesity as a controllable risk factor for cancer and other chronic diseases.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> Individual Community 	<ul style="list-style-type: none"> Are part of populations with high cancer incidence or mortality.
Promote evidence-based lifestyle change programs designed to improve healthy eating and physical activity to reduce the risk of developing obesity-related cancers.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> Individual 	



Ruby Mackey | Broken Arrow, OK

SURVIVOR STORY — *Diagnosis: Breast Cancer*

In 1995, Ruby was diagnosed with breast cancer. As an oncology nurse she was aware of how genetics, stress, diet and physical inactivity can negatively impact one’s chance of survival.

“In 2021, I chose to focus on my health, losing about 100 pounds (through diet and exercise). Cancer is not just a personal journey; it affects the whole family. My husband and children have taken every step with me.”

Ruby has been cancer free for 28 years. Access her full story [here](#).

COMMERCIAL TOBACCO USE & EXPOSURE

The Centers for Disease Control and Prevention (CDC) defines commercial tobacco as “harmful products that are made and sold by tobacco companies.”⁴ The OCCN focuses on preventative efforts aimed at reducing the use and exposure of commercial tobacco cigarettes. The objectives within this Plan do not include traditional tobacco practices by some American Indian communities.

Despite an estimated 18% decline in cigarette smoking for Oklahoma adults (from 19.1% in 2020 to 15.6% in 2022), “the risk for lung cancer has gone up over the last 50 years.”^{5,6} Tobacco prevention and control remains a priority for the OCCN. Smoking is not only the most common cause of cancer-related deaths among men and women, but is also a contributor to multiple health-related inequalities such as marketing practices targeted to specific populations, exposure to second- and/or third-hand smoke and barriers to accessing services to help quit. Additional disparities include demographic factors such as race, ethnicity, age, sexual orientation, disability status, education level, income and mental health status. These inequalities are further addressed in the [Social Drivers of Health](#) section.

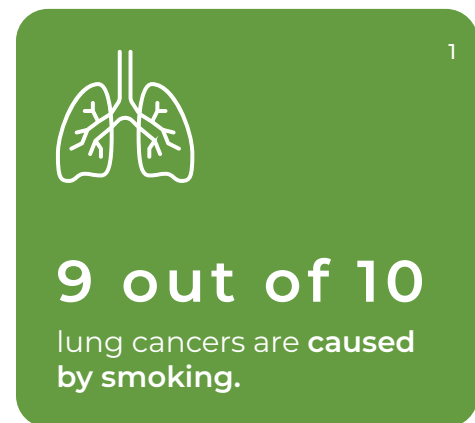
For more information on the reduction of tobacco use in Oklahoma, please access the [OSDH Tobacco Reduction State Plan](#).



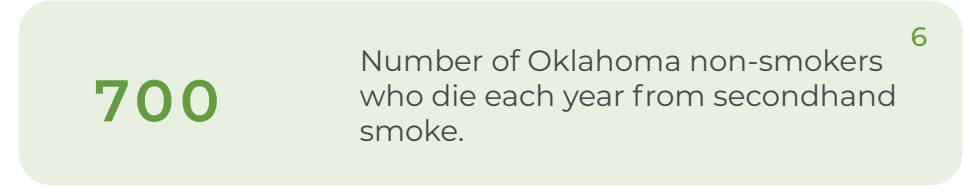
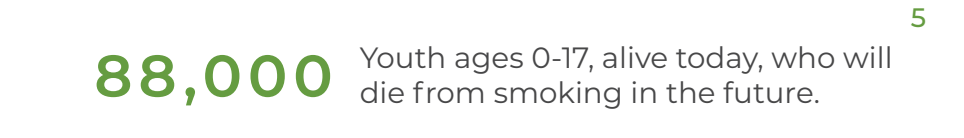
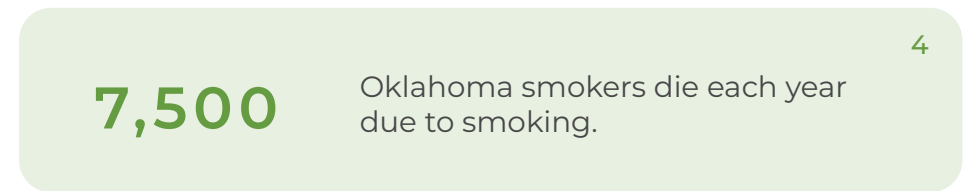
The toll of cancer on Oklahomans is great.

We have higher rates of cancer diagnosis and cancer deaths than most other states, and we have to attack that problem from every angle—through prevention, health care and early detection, and the development of new treatments. TSET is proud to play a role in the fight against cancer by funding the Oklahoma Tobacco Helpline and educating Oklahomans about the dangers and deceptive marketing of tobacco, as well as by partnering to place physicians in rural parts of the state. TSET is also supporting the search for new treatments through the TSET Phase I Clinical Trials at Stephenson Cancer Center, regenerative research at the Oklahoma Center for Adult Stem Cell Research and behavioral research at the Oklahoma Health Promotion Research Center.”

Julie Bisbee
Executive Director, Tobacco Settlement Endowment Trust (TSET)



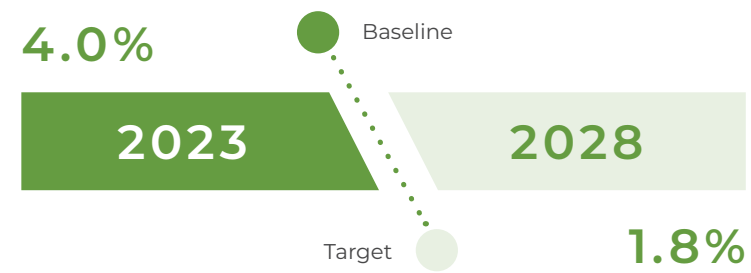
Sources for graphics 1-3:
1: U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2022. Accessed at <https://www.cdc.gov/tobacco/sgr/50th-anniversary/pdfs/wynk-cancer.pdf> on 07FEB2022:12:47:09.
2-3: America’s Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System 2022, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/Smoking/OK> on 12FEB2024:12:57:23.



Sources for graphics 4-6:
4-5: Behan DF, Eriksen MP, Lin Y. Economic Effects of Environmental Tobacco Smoke Report. Schaumburg, IL: Society of Actuaries; 2005. Accessed at <https://www.soa.org/Research/Research-Projects/Life-Insurance/researcheconomic-effect.aspx> on 12FEB2024:01:04:06.
6: 50 Years of Progress A Report of the Surgeon General (2015). Retrieved December 13, 2018. Accessed at <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/consumer-guide.pdf> on 12FEB2024:01:06:26.

OBJECTIVE: Decrease commercial tobacco cigarette use among youth, in grades 9-12, by 55%.

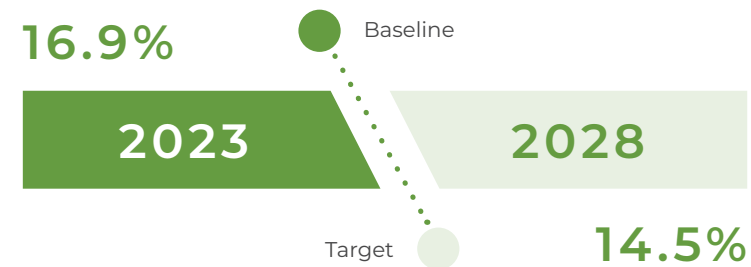
HIGH SCHOOL TOBACCO USE - CIGARETTE



Baseline source: YRBSS 2021.

OBJECTIVE: Decrease commercial tobacco cigarette use among adults, ages 18 and older, by 14%.

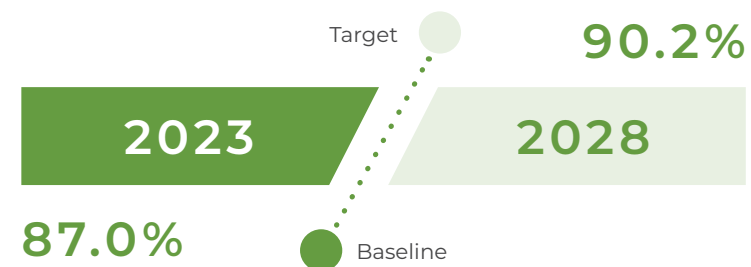
ADULT TOBACCO USE - CIGARETTE



Baseline source: BRFSS 2021.

OBJECTIVE: Increase commercial tobacco smoke-free policies, in homes, by 3.7%.

SMOKE-FREE POLICIES



Baseline source: BRFSS 2021.

TOBACCO STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Educate the patient, provider and public on tobacco use/exposure as a controllable risk factor for tobacco-related cancers and other chronic diseases.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> Individual Provider Community 	Males & Females: <ul style="list-style-type: none"> Ages 13 and older. Have low socioeconomic status/high social vulnerability index. Reside in areas with high rates of tobacco use. Are part of populations with high cancer incidence or mortality.
Support implementation of policies, environmental changes and messaging that promote tobacco-free settings to reduce the development of tobacco-related cancers.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> PSE Change Approach 	
Promote evidence-based lifestyle change programs designed to improve tobacco cessation attempts and/or outcomes to reduce the risk of developing tobacco-related cancers and other chronic diseases.	<ul style="list-style-type: none"> Prevention Quality of Life 	<ul style="list-style-type: none"> Individual Public 	



Brandon Rooks | Catoosa, OK

SURVIVOR STORY — *Diagnosis: Tobacco Use-Related Health Conditions*

Brandon was able to refrain from smoking until adulthood. However, remaining tobacco-free has been an uphill battle.

“Most of my family members were smokers. I have lost two beloved aunts and a grandmother to cancers associated with smoking. I continue to watch other family members struggle with the effects of smoking. Although I am thankfully cancer-free, I too suffer from health issues related to smoking.”

Access Brandon’s full story [here](#).

HPV IMMUNIZATIONS

The human papillomavirus (HPV) is a virus that can cause cell changes that can lead to several types of cancers later in life, most commonly linked to cancers of the cervix and oropharynx (middle part of the throat just behind the oral cavity, which includes the base of the tongue, soft palate, roof of the mouth, tonsils and the side and back walls of the throat).⁷ HPV can be spread without signs or symptoms for cancer. Most people who are infected with HPV are not aware they have it, as the body's immune system can typically eliminate the infection within two years. But when the immune system fails to rid the body of an oncogenic type, it can lead to cancer.⁷

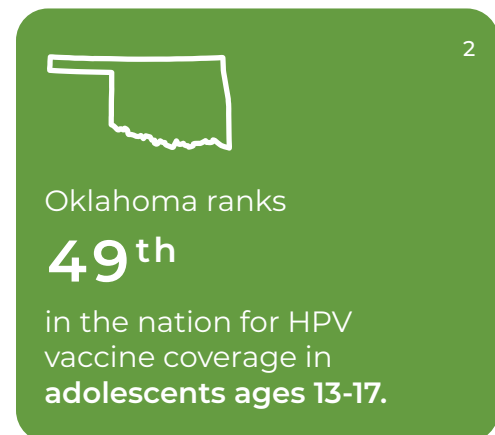
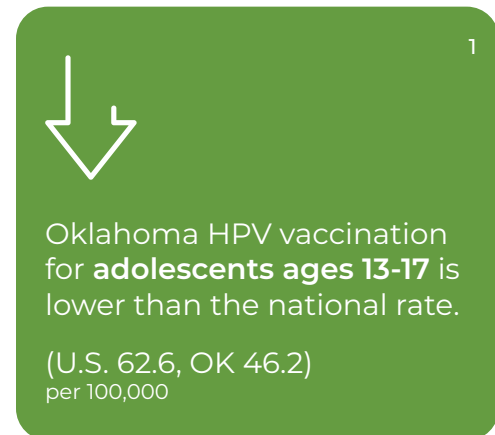
HPV is very common. By age 50, at least four out of every five women will have been infected with the virus at one point in their lives. For infected males, HPV often has no symptoms. For both, the Centers for Disease Control and Prevention (CDC) states, "HPV vaccination can prevent over 90%

of cancers caused by HPV," and that "HPV vaccines work best when given before contact with the HPV virus" as it prevents new HPV infections but does not treat existing HPV infections or diseases.⁸

The Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination at age 11 or 12 years, although vaccination can be started at age 9 through 26 years of age. Those ages 27 to 45 who were not vaccinated earlier in life can discuss with their healthcare provider whether it may be beneficial to receive the vaccine.⁷

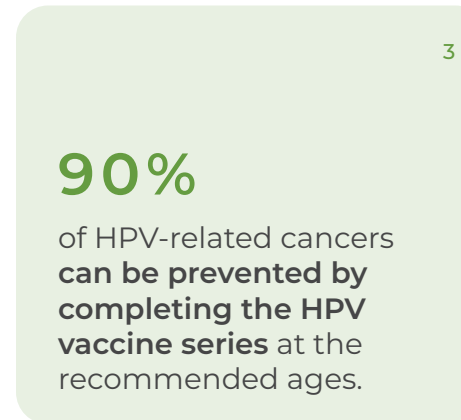
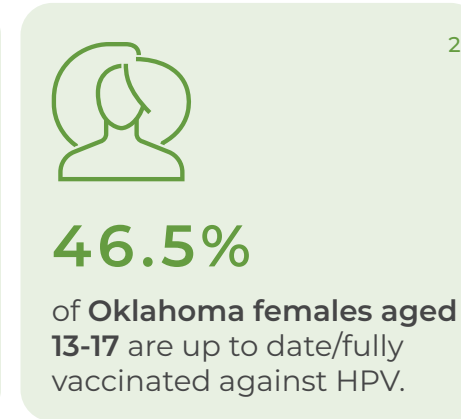
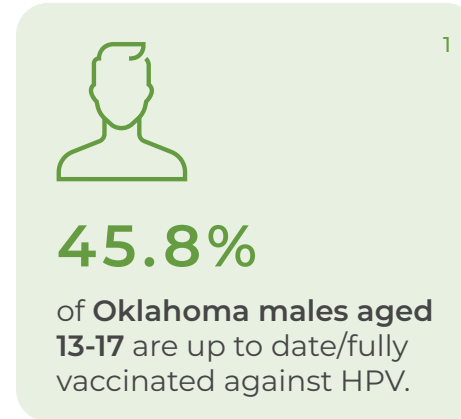
The American Cancer Society recommends:

- HPV vaccination of children between the ages of 9 and 12.
- Children and young adults aged 13 through 26 who have not been vaccinated, or who haven't gotten all their doses, should get the vaccine as soon as possible. Vaccination of young adults will not prevent as many cancers as vaccination of children and teens.
- HPV vaccination not recommended for persons older than 26 years.⁹



Sources for graphics 1-2:

1-2: America's Health Rankings analysis of CDC, National Immunization Survey-Teen 2022, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/immunize HPV/OK> on 12FEB2024:01:19:27.

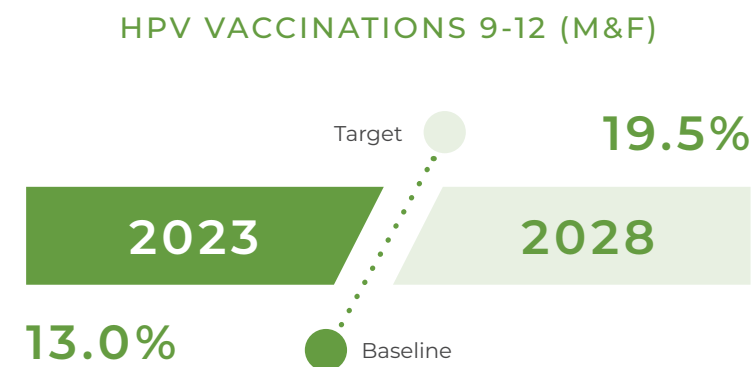


Sources for graphics 1-3:

1-2: America's Health Rankings analysis of CDC, National Immunization Survey-Teen 2022, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/immunize HPV/OK> on 12FEB2024:01:19:27.

3: American Cancer Society. Prevent 6 Cancers with the HPV Vaccine. Accessed at <https://www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccine.html> on 12FEB2024:01:36:47.

OBJECTIVE: Increase HPV vaccinations for males and females, ages 9-12 years, by 50% according to the most recent guidelines.



Baseline source: OSIIS 2022.



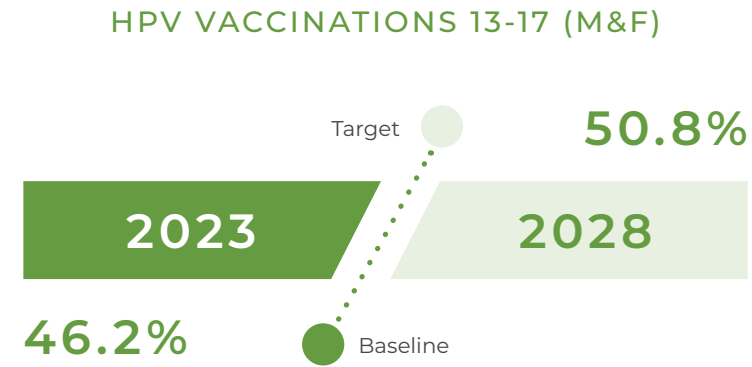
HPV-related cancers are completely unnecessary and preventable

if HPV vaccinations were given to every child between ages 9 and 15. The Vaccines for Children (VFC) program gives free vaccines to all uninsured children and the Affordable Care Act requires all insurers give HPV vaccinations for free to all insured children. There is no excuse to die of a preventable cancer."

Joan Walker, MD
Associate Director for Diversity Equity and Inclusion, OU Health Stephenson Cancer Center

OBJECTIVE: Increase HPV vaccinations for males and females, ages 13-17 years, by 10% according to the most recent guidelines.

Baseline source: TeenVaxView 2022.



Claudia Gruberg | Hollis, OK

SURVIVOR STORY — *Diagnosis: Stage IV Oropharyngeal Squamous Cell Carcinoma*

At 53, Claudia, concerned about a lump on the side of her neck that appeared one morning, sought immediate medical attention. Previously misdiagnosed as a cyst, a second opinion confirmed stage IV oropharyngeal cancer.

“The cancer was related to HPV, and it was located on my tonsil, but initiated from the oropharynx. I had an 80% chance of recovery from the diagnosis since I was not a smoker.”

Claudia was diagnosed in 2014 and is currently cancer free. Read her full story [here](#).

HPV VACCINATION STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Support implementation of policies and system changes that promote importance of HPV vaccination	<ul style="list-style-type: none"> Prevention 	<ul style="list-style-type: none"> PSE Change Approaches 	Males & Females: <ul style="list-style-type: none"> Ages 9-17. Have low socioeconomic status/high social vulnerability index. Reside in areas with low rates of vaccination. Are part of populations with high cancer incidence or mortality.
Develop and disseminate messaging for parents and adolescents that HPV vaccination is cancer prevention, including cervical, head, neck and other cancers.	<ul style="list-style-type: none"> Prevention 	<ul style="list-style-type: none"> Individual Provider Public 	
Educate medical and oral health professionals, parents and the public on HPV vaccinations as a controllable risk factor for cancer.	<ul style="list-style-type: none"> Prevention 	<ul style="list-style-type: none"> Individual Provider Public 	
Support interventions designed to enhance surveillance systems and reporting measures targeted at youth beginning at age 9.	<ul style="list-style-type: none"> Cross-cutting 	<ul style="list-style-type: none"> Organization 	

Screening & Early Detection

SCREENING & EARLY DETECTION

Screening and early detection can greatly impact an individual's treatment outcome and survival of cancer. Early detection focuses on finding symptoms as early as possible, whereas screening consists of testing for cancers before symptoms appear. Screening can often help find and treat pre-cancers and cancers at their earliest stages (before they have a chance to grow and/or spread to other parts of the body).¹⁰

A crucial step in fighting cancer is to be proactive when discussing options for early detection. It is important to consider family health history, address controllable lifestyle behaviors and advocate for access to timely, evidence-based screening. The United States Preventative Services Task Force (USPSTF) and the American Cancer Society (ACS) publish guidelines and recommendations to help guide practitioners and the public on screening practices for certain cancers. This section will highlight both USPSTF and ACS early detection and screening guidelines. For more information on screening, please visit [The United States Preventative Services Task Force](#) and the [American Cancer Society](#).

GOAL II: Decrease late-stage cancer diagnosis through early detection and screening for cancers according to the most recent guidelines.

BREAST CANCER

Breast cancer forms in the tissues of the breast, a glandular organ located on the chest, and is most common in the milk ducts or glands. The American Cancer Society (ACS) states that "breast cancer is the most common cancer in women in the United States except for skin cancers."¹¹ This disease is the second most common cause of cancer death among women in Oklahoma, behind lung cancer.¹² Two of the strongest risk factors for the disease are being female and aging. Race and ethnicity may also increase the risk of having breast cancer. For example, American Indian or Alaskan Natives are at the highest risk for being diagnosed with breast cancer, whereas Black or African Americans experience higher mortality rates. However, breast cancer is considered highly survivable if detected at an early, treatable stage using mammography. Some controllable risk factors to be considered include not being overweight or obese, being physically active and limiting alcohol use.¹¹



64.9%

of Oklahoma females aged 40+ have had a mammogram in the past two years.

Source for graphic opposite:

1: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/mammogram> on 12FEB2024:10:55:25.



Breast cancer has seen some of the most rapid improvements in cancer treatment in the last several years.

Many aspects of these changes have occurred because of the many patients in Oklahoma participating in clinical trials. We have seen improvements in shortening radiation course to a few days or a single intraoperative dose of radiation. Aggressive breast cancers can now often be killed nearly completely by pre-operative chemo in many of the latest clinical trials.”

William C. Dooley, MD, FACS

G. Rainey Williams Professor and Chair in Surgical Breast Oncology, OU Health Stephenson Cancer Center

Most organizations recommend screening mammograms annually starting at age 40.¹³


The American Cancer Society recommends beginning regular breast cancer screening at age 45, with the option to begin at age 40.¹⁰

1



Oklahoma ranks **45th** in the nation for **females aged 40+** having a mammogram within the past two years.

2



Oklahoma **breast cancer mortality** is higher than the national rate. (U.S. 19.6, OK 22.4) per 100,000

Sources for graphics 1-2:

1: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed <https://www.americashealthrankings.org/explore/measures/mammogram> on 12FEB2024:10:55:25.

2: National Vital Statistics System Public Use File. National Cancer Institute using SEER*Stat. Accessed at <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statername=oklahoma#t=3> on 14FEB2024:01:19:19.

3

3,490 Estimated new cases/incidence rates of breast cancer in Oklahoma, 2024.

4

570 Estimated deaths/mortality rates of breast cancer in Oklahoma, 2024.

5

90.8% U.S. 5-year survival rate, 2013-2019.

Sources for graphics 3-5:

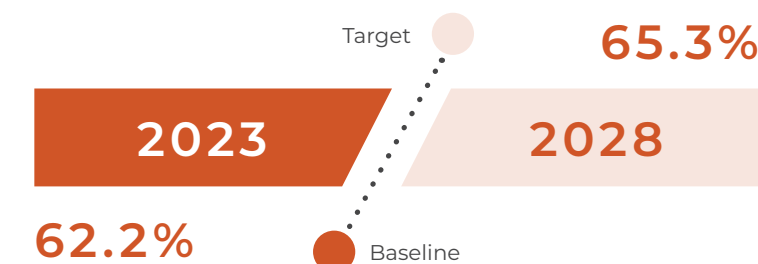
3-4: American Cancer Society, Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/states/oklahoma> on 12FEB2:29:02.

5: National Institute of Health National Cancer Institute. Surveillance Epidemiology, and Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/breast.html> on 12FEB2024:2:50:11.

OBJECTIVE: Increase breast cancer screening among females, ages 40 to 64, by 5% according to the most recent guidelines.

Baseline source: BRFSS 2022.

BREAST CANCER SCREENING



BREAST CANCER STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote access to screening by reducing structural barriers (e.g., transportation assistance, flexible clinic hours for screening services, alternative screening sites [like mobile mammography vans], scheduling assistance and translation services).	• Early Detection	• Individual • Providers • Public	Females: • Ages 40-64. • Have low socioeconomic status/high social vulnerability index.
Develop and disseminate marketing and communication about the importance of screening with consistent messaging across OCCN partners and their networks.	• Early Detection	• Individual • Providers • Public	• Reside in areas with low rates of cancer screenings. • Are part of populations with high cancer incidence or mortality.
Provide education for patients, providers and the public on breast cancer screenings according to the most recent USPSTF guidelines.	• Early Detection	• Individual • Providers • Public	
Support interventions designed to improve detection of cancers at their earliest to avoid late-stage diagnosis.	• Early Detection • Treatment	• PSE Change Approach	



Resha Williams Vo | Tulsa, OK

SURVIVOR STORY — *Diagnosis: Breast Cancer*

At the height of the COVID-19 pandemic, Resha was diagnosed with human epidermal growth factor receptor 2 (commonly known as HER2 Positive) breast cancer.

“The timing could not have been any worse. Breast cancer is devastating in so many ways — threatening my existence and identity as a woman. I am so thankful I have been able to lean on the strength of all the women who suffered before me.”

Resha was first diagnosed in April 2020 and is cancer-free. Access her full story [here](#).

CERVICAL CANCER

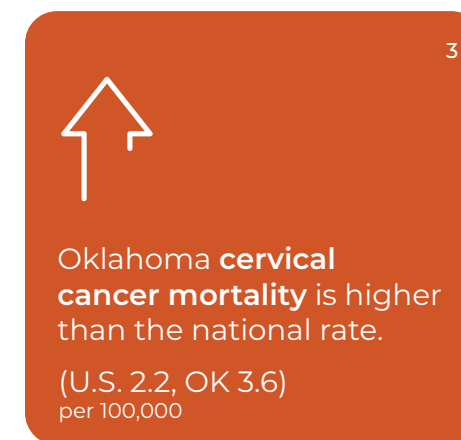
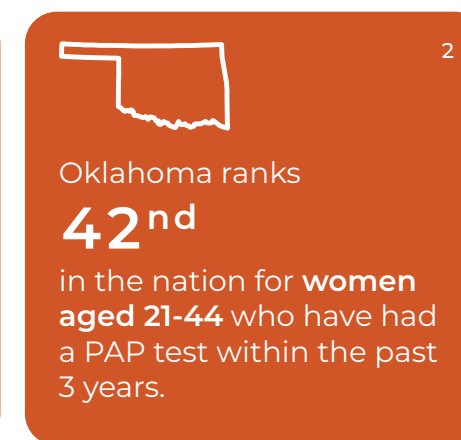
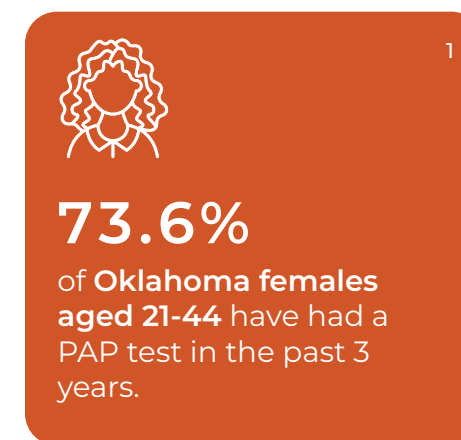
Cervical cancer is cancer that starts in the cells of the cervix (the lower, narrow end of the uterus also referred to as the womb). “Up to 93% of cervical cancers are preventable” through vaccination, screening, and appropriate case management after abnormal test results.¹⁴

Both cervical cancer incidence and deaths have dropped in the United States since the introduction of wide-spread screening with the Papanicolaou (PAP) test and the availability of the human papillomavirus (HPV) vaccine. According to the Centers for Disease Control and Prevention (CDC), “the largest declines were among girls and women who were 15 to 20 years old, the age group most likely to be vaccinated against HPV.”¹⁵

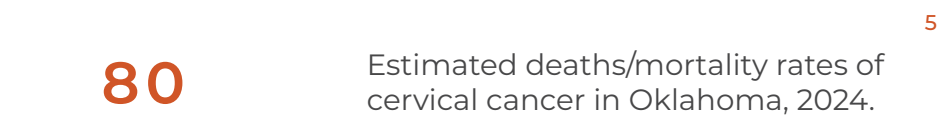
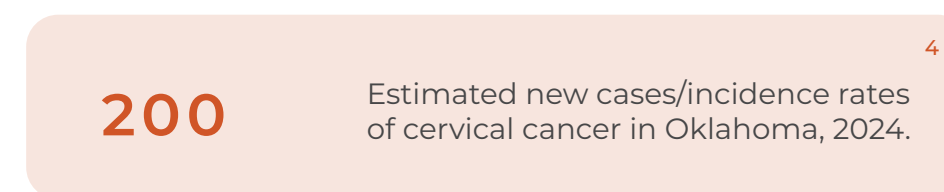
Despite this progress and the advancement in detection and treatment options, the disease persists in Oklahoma at a higher rate than the U.S. Several health-related disparities for cervical cancer persist. For instance, in 2020, American Indian or Alaskan Native women in Oklahoma had the highest age-adjusted incidence from cervical cancer and African American or Black women had the highest mortality rate.¹⁶

The United States Preventive Services Task Force (USPSTF) recommends screening for cervical cancer every three years with cervical cytology alone in women aged 21 to 29 years, while for women aged 30 to 65 years the USPSTF recommendations include screening every three years with cervical cytology alone, every five years with high-risk human papillomavirus (hrHPV) testing alone, or every five years with hrHPV testing in combination with cytology (co-testing).¹⁷

The American Cancer Society recommends cervical cancer screening for people with a cervix beginning at age 25.¹⁰



Sources for graphics 1-6:
1-2: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/> on 12FEB2024:10:55:25.
3: National Vital Statistics System Public Use File. National Cancer Institute using SEER*Stat. Accessed at <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statername=oklahoma#t=3> on 14FEB2024:02:19:47.
4-5: American Cancer Society. Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/quick-oklahoma> on 12FEB2:29:02.
6: National Institute of Health National Cancer Institute. Surveillance Epidemiology, and Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/cervix.html> on 12FEB2024:2:50:11.



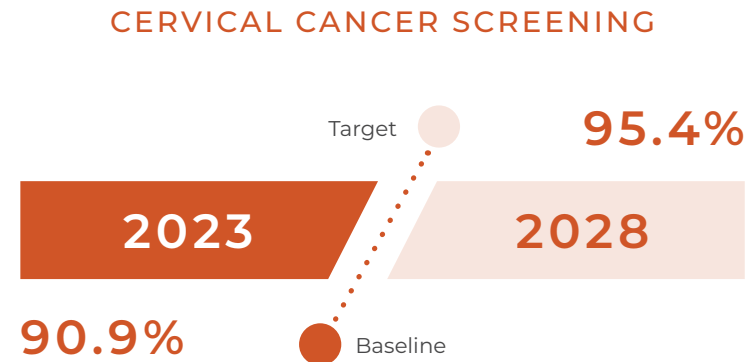
No Oklahoman should ever have to die of cervical cancer!

Despite the decline in cervical cancer rates in both the U.S. and Oklahoma, there are still incidence and mortality rates caused by cervical cancer. This is tragic when cervical cancer is easily treatable when caught early. Additionally, there is an immunization for HPV which has been available since 2006; HPV is the leading cause of several types of cancer, including cervical cancer. Oklahoma has three screening programs serving low-income, uninsured and under-insured Oklahomans. The three early detection programs work together, as well as with community organizations, to help eligible residents access and/or gain referrals to cervical cancer screenings and diagnostic services and treatment.”

Jennifer Gingerich, LPN, MPH
Cancer Prevention & Control Manager, Oklahoma State Department of Health

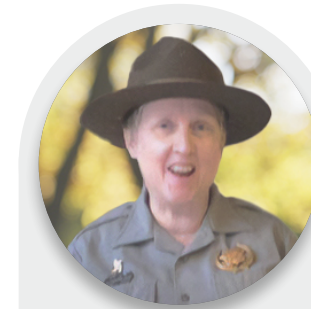
OBJECTIVE: Increase cervical cancer screenings among females, ages 21-64 years, by 5% according to the most recent guidelines.

Baseline source: BRFSS 2020.



CERVICAL CANCER STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote access to screening by reducing structural barriers (e.g., transportation assistance, flexible clinic hours for screening services, alternative screening sites [like mobile mammography vans], scheduling assistance and translation services).	<ul style="list-style-type: none"> Early Detection 	<ul style="list-style-type: none"> Individual Providers Public 	Females: <ul style="list-style-type: none"> Ages 21-64. Have low socioeconomic status/high social vulnerability index. Reside in areas with low rates of cancer screenings. Are part of populations with high cancer incidence or mortality.
Implement system changes to increase diagnostic follow-up and treatment to prevent late-stage diagnosis.	<ul style="list-style-type: none"> Early Detection Treatment 	<ul style="list-style-type: none"> PSE Change Approach 	
Develop and disseminate marketing and communication about the importance of screening with consistent messaging across OCCN partners and their networks.	<ul style="list-style-type: none"> Early Detection 	<ul style="list-style-type: none"> Individual Providers Public 	
Provide education for patients, providers and the public on cervical cancer screenings according to the most recent USPSTF guidelines.	<ul style="list-style-type: none"> Early Detection 	<ul style="list-style-type: none"> Individual Providers Public 	



Stacy Frazier | Guthrie, OK

SURVIVOR STORY — *Diagnosis: Cervical Cancer*

Stacy was diagnosed with cervical cancer on her 32nd birthday. She had no family history or current symptoms or complaints, and her PAP and pelvic exams were up to date.

“There has not been a single birthday go by that I don’t feel that shadow behind me. It took years for me to recognize that I was, indeed, one of the lucky ones. When the HPV vaccine became available, I knew that there would be women who would be even luckier than me.”

Stacy has been cancer-free for 28 years. Read her full story [here](#).

COLORECTAL CANCER

The Centers for Disease Control and Prevention (CDC) defines colorectal cancer “as a disease in which cells in the colon or rectum grow out of control. Sometimes it is called colon cancer, for short.”¹⁸ Colorectal cancer rates are higher in Oklahoma compared to the U.S. for both males and females.¹⁹ 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.

Unfortunately, aging increases the chance of colorectal cancer. Nearly 94% of new cases of colorectal cancer occur in adults 45 years or older.²⁰ American Indian or Alaskan Natives are 70% more likely to be diagnosed with colorectal cancer than other ethnic and racial populations in the state. Whereas both Oklahoma American Indian or Alaskan Natives and Black or African Americans are both 30% more likely to die from colorectal cancer than other racial or ethnic groups.¹⁹ Rates are also highest among males, persons with a family history of colorectal cancer, long-term smokers, individuals with obesity and those with unhealthy alcohol use habits.¹⁸

The United States Preventive Services Task Force recommends screening for colorectal cancer in all adults aged 45-75 years, and selective screening for adults 76 and older.²⁰

The American Cancer Society recommends colorectal cancer screening for everyone beginning at age 45 years.¹⁰

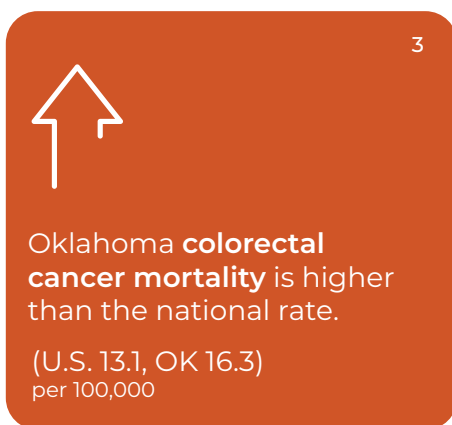
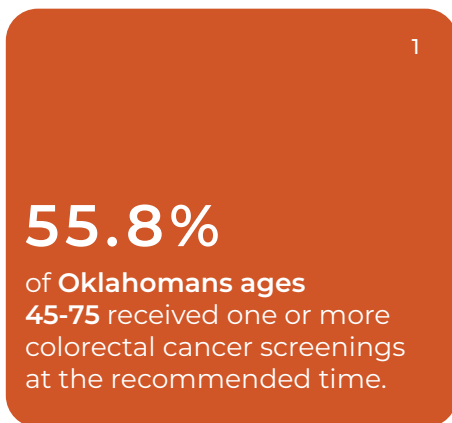


Colorectal cancer is the third most diagnosed cancer among Oklahoma men and women

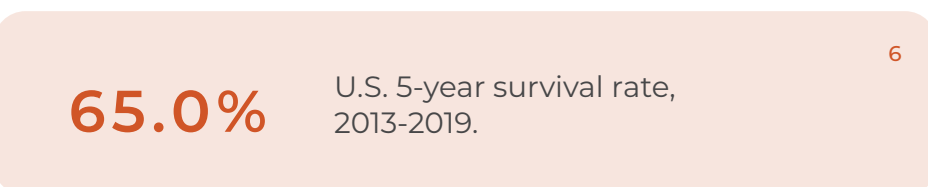
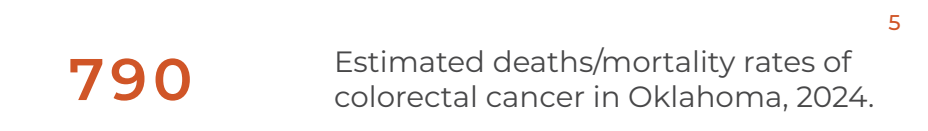
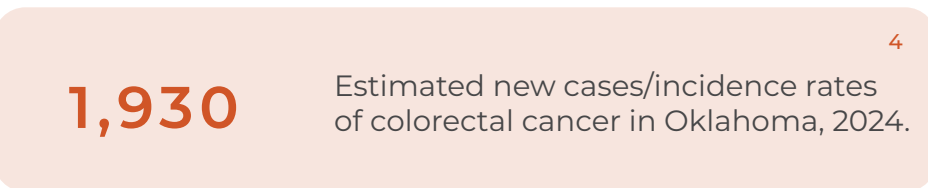
and is the third leading cause of death among men and women. Oklahomans who are male, non-Hispanic American Indian/Alaskan Natives, non-Hispanic Black or African American, and older are more likely to be diagnosed with and die from colorectal cancer. Furthermore, in addition to having higher cancer mortality than the non-Native American populations within Oklahoma, Native American Oklahomans have significantly higher cancer mortality than Native Americans in other states. Early detection is vitally important in order to reduce these health disparities.”

Ajay Jain, MD, FACS

Chief, Division of Surgical Oncology, Core Medical Director, OU Health Stephenson Cancer Center



Sources for graphics 1-3:
1-2: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org, accessed at <https://www.americashealthrankings.org/explore/measures/> on 12FEB2024:10:55:25.
3: National Vital Statistics System Public Use File. National Cancer Institute using SEER*Stat, accessed at https://www.americashealthrankings.org/explore/measures/colorectal_cancer_screening/OK on 14FEB2024:01:19:19.

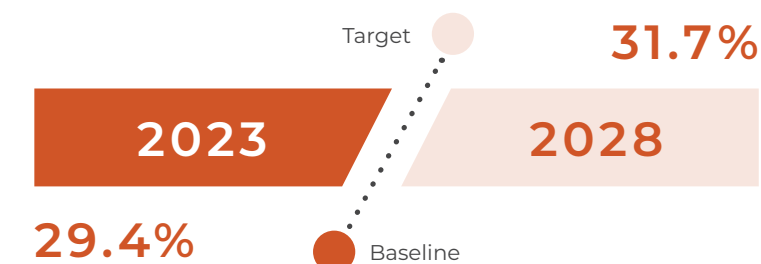


Sources for graphics 4-6:
4-5: American Cancer Society. Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/states/oklahoma> on 12FEB2:29:02.
6: National Institute of Health National Cancer Institute. Surveillance epidemiology, and Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/cervix.html> on 12FEB2024:2:50:11.

OBJECTIVE: Increase colorectal cancer screening among adults, ages 45-49 years, by 8% based on the most recent guidelines.

Baseline source: BRFSS 2022.

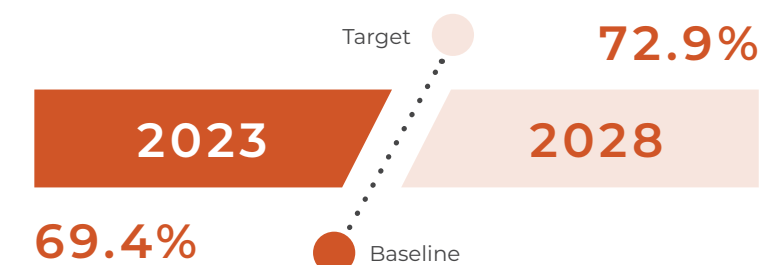
COLORECTAL CANCER SCREENING



OBJECTIVE: Increase colorectal cancer screening among adults, ages 50-75 years, by 5% based on the most recent guidelines.

Baseline source: BRFSS 2022.

COLORECTAL CANCER SCREENING



COLORECTAL CANCER STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Increase community awareness, demand and access to colorectal screening and treatment by reducing structural barriers.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • Individual • Providers • Public 	Males & Females: <ul style="list-style-type: none"> • Ages 45-75. • Have low socioeconomic status/high social vulnerability index. • Reside in areas with low rates of cancer screenings. • Are part of populations with high cancer incidence or mortality.
Provide education for patients, providers and the public on colorectal cancer screenings according to the most recent USPSTF guidelines.	<ul style="list-style-type: none"> • Early Detection 	<ul style="list-style-type: none"> • Individual • Providers • Public 	
Implement system changes to increase diagnostic follow-up and treatment to prevent late-stage diagnosis.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • PSE Change Approach 	



Barbara Neal | Tahlequah, OK

SURVIVOR STORY — *Diagnosis: Colon Cancer*

When Barbara was diagnosed with stage III colon cancer, she was two years younger than what the guidelines recommended for screening. With no family history of cancers and no other symptoms than fatigue, it took an emergency room visit for possible appendicitis for her to become aware of her cancer.

“It is important to be proactive in your health. I encourage you to take cancer screenings seriously and make them a part of your life. Early diagnosis is the best diagnosis.”

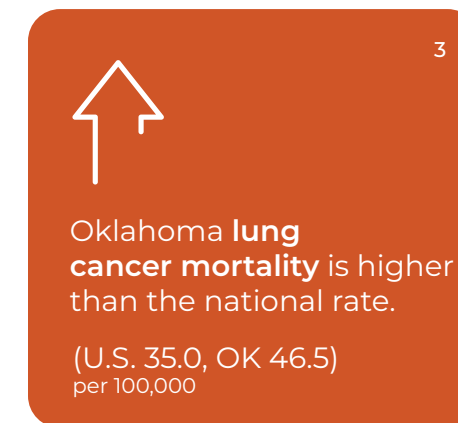
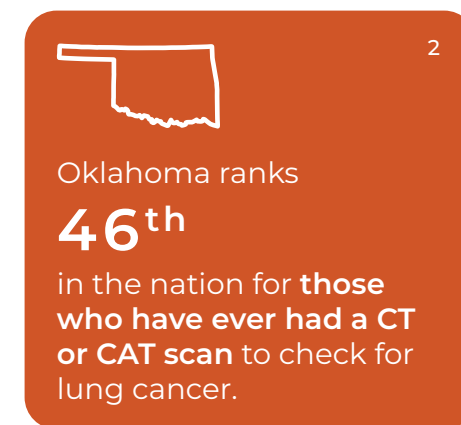
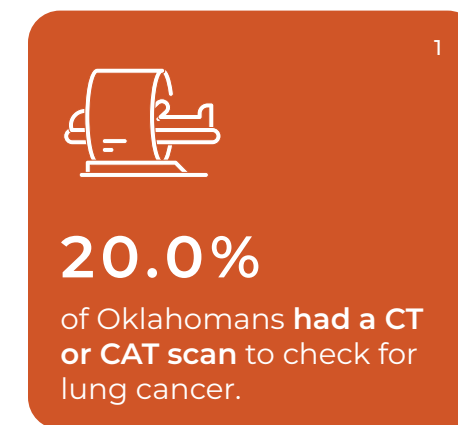
Barbara was diagnosed in 1998 and is cancer-free. View her full story [here](#).

LUNG CANCER

Lung and bronchus cancers typically start in the cells lining the bronchi (passages that lead from the windpipe to the lungs) and parts of the lung such as the bronchioles (smallest airways) or alveoli (tiny air sacs at the end of the bronchioles).²¹ In the United States, lung cancer is the number one cause of death and the second most frequently diagnosed cancer for both males and females. Oklahoma has higher lung cancer incidence and mortality rates than the other U.S. states. Also, apparent health-related disparities exist within Oklahoma populations. For example, American Indian or Alaskan Natives have both higher lung cancer incidence and mortality rates as compared to other racial or ethnic groups.²² Other factors to consider are the relatively low survival rate primarily because diagnosis usually occurs at a late stage, as the cancer has had time to spread to other body parts and being often stigmatized because of the association with tobacco cigarette use. The American Lung Association states that “lung cancer stigma negatively affects every facet of the lung cancer experience-placing more people at higher risk for this disease.”²³ It is important to note that lung cancers can also be attributed to other factors such as smoking other types of tobacco, exposure to secondhand smoke and environmental substances, and having a family history of lung cancer. For more information on lung cancer in Oklahoma, please access the [American Lung Association’s State of Lung Cancer Report](#).

The United States Preventive Services Task Force recommends yearly screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.²⁴

The American Cancer Society recommends that current or former smokers over 50 years of age should discuss lung cancer screening with a doctor.¹⁰



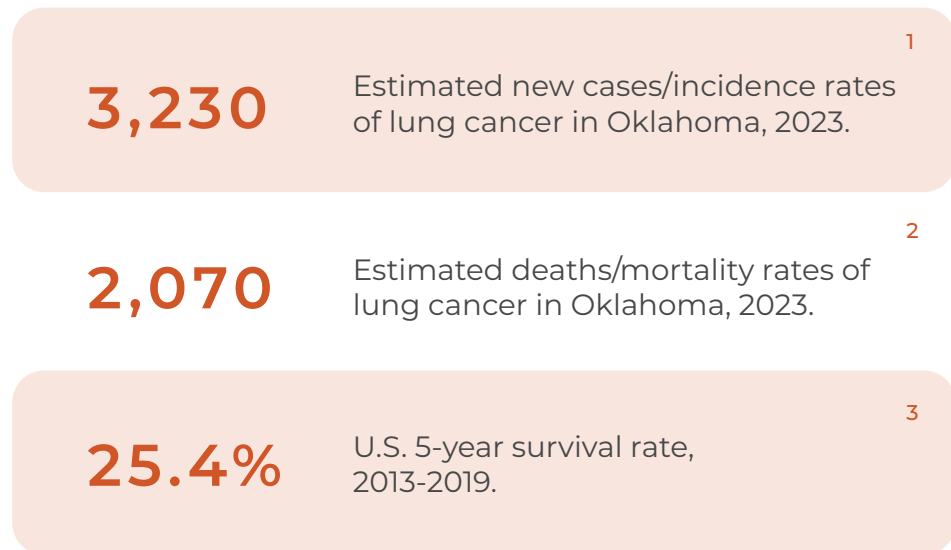
Sources for graphics 1-3:
 1-2: America’s Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/> on 12FEB2024:10:55:25.
 3: National Vital Statistics System Public Use File. National Cancer Institute using SEER*Stat. Accessed at <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statename=oklahoma#t=3> on 14FEB2024:02:19:47.



As we begin 2024, lung cancer remains the number one cancer killer in America.

The leading cause of lung cancer sadly remains tobacco use. The best advice we can give to those concerned about this devastating disease is to quit smoking immediately, and to those who don’t currently smoke: don’t start. And, for those who have smoked and are eligible, we highly encourage learning life-saving lung cancer screenings. Visit SavedByTheScan.org for more information.”

Alexis Burris
 Manager, Health Promotion,
 American Lung Association
 in Oklahoma

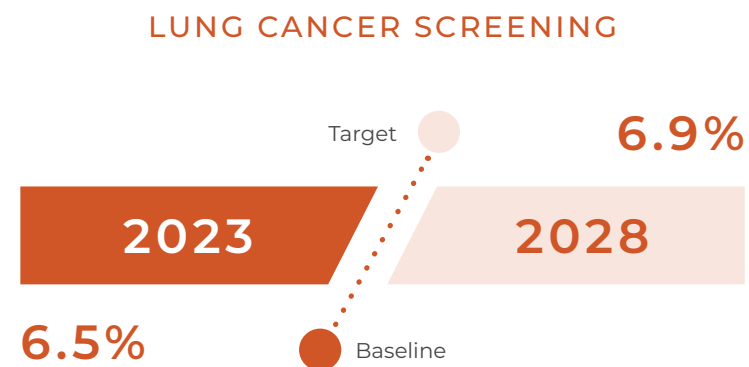


Sources for graphics 1-3:
 1-2: American Cancer Society. Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/states/oklahoma> on 12FEB2:29:02.
 3: National Institute of Health National Cancer Institute. Surveillance epidemiology, and Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/colorect.html> on 12FEB2024:2:50:11.

LUNG CANCER STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote the importance of lung cancer screening; empower those who qualify for lung cancer screenings to make informed decisions.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • Individual • Providers • Public 	Males & Females: <ul style="list-style-type: none"> • Ages 50-80 (current or past cigarette smokers).
Provide education for patients, providers and the public on lung cancer screenings according to the most recent USPSTF guidelines.	<ul style="list-style-type: none"> • Early Detection 	<ul style="list-style-type: none"> • Individual • Providers • Public 	<ul style="list-style-type: none"> • Have low socioeconomic status/high social vulnerability index. • Reside in areas with low rates of cancer screenings.
Promote interventions designed to assist with recognizing the signs and symptoms of lung cancer.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • Individual • Providers • Public 	<ul style="list-style-type: none"> • Are part of populations with high cancer incidence or mortality.

OBJECTIVE: Increase lung cancer screening among adults, ages 50-80 years, by 3% based on the most recent guidelines.



Baseline source: CDC Wonder 2022.



Danielle James | Tulsa, OK

SURVIVOR STORY — *Diagnosis: Stage IV Non-Small Cell Lung Cancer (NSCLC) Adenocarcinoma*

Ten days after her 25th birthday, Danielle was diagnosed with stage IV NSCLC and given six months to live. Targeted therapy and medications to control the cancer’s spread were successful for two years.

“At this point, doctors discovered brain tumors, so I began a clinical trial. In those seven years, my daughter came into my life! In January 2023, the clinical trial drug stopped working, so I had to end treatment, but it didn’t stop my hope and commitment to keep fighting.”

Danielle recently celebrated 10 years of life after diagnosis. Read her full story [here](#).

PROSTATE CANCER

The Centers for Disease Control and Prevention defines prostate cancer as “cancer in part of the male reproductive system.” This cancer begins in the gland cells of the prostate (gland that produces seminal fluid) which is located just below the bladder and in front of the rectum. Prostate cancer is the second leading cause of cancer death and most common cancer, aside from non-melanoma skin cancer, among men in the United States.²⁵

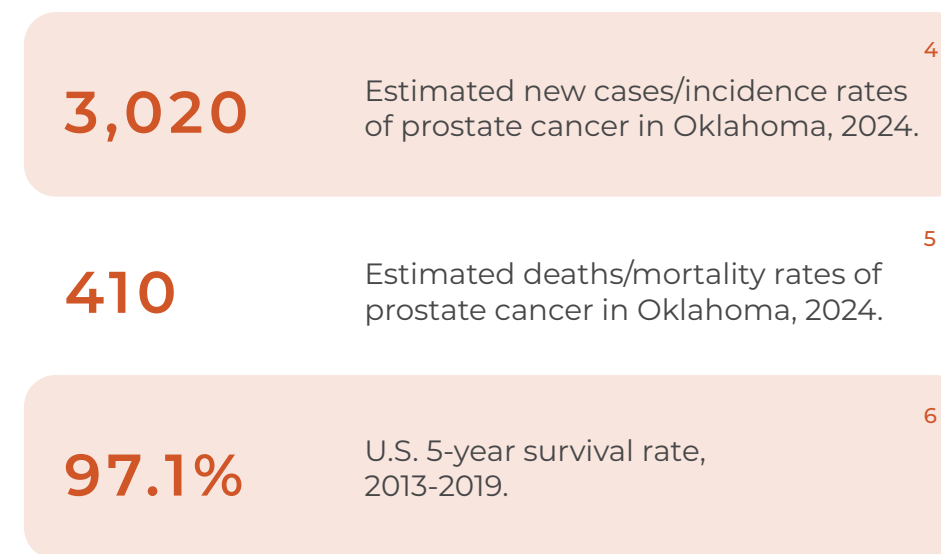
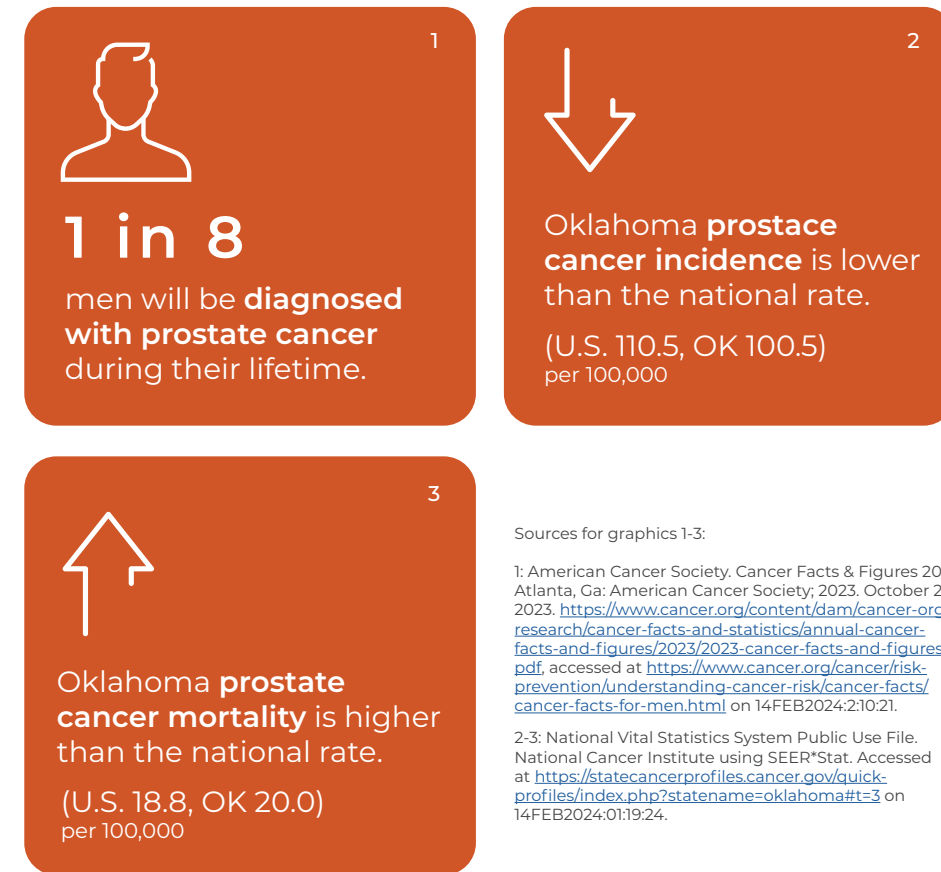
There are several risk factors that increase a man’s chance of developing prostate cancer, age being the most common, whereas race is another to consider. For example, in the U.S., “Black or African American men have higher incidence of prostate cancer, higher prostate cancer mortality, and are diagnosed with prostate cancer at a younger age than white men.”²⁶ Another risk factor to consider is family history. Having a father or brother with prostate cancer more than doubles a man’s risk of developing this disease. The risk becomes much higher for men with several affected relatives, particularly if their relatives were young when the cancer was found.²⁵

If prostate cancer is suspected, the two tests commonly used to look for possible signs of prostate cancer are the prostate specific antigen (PSA) test and the digital rectal examination (DRE). If the results of either of these tests are abnormal, further testing, such as a prostate biopsy, is often completed to confirm/diagnose the cancer.²⁵

The United States Preventive Services Task Force (USPSTF) recommends that the decision to be screened for prostate cancer be an individual one. In determining whether this service is appropriate in individual cases, patients and clinicians should consider the balance of benefits and harms based on family history, race/ethnicity, comorbid medical conditions, patient values about the benefits and harms of screening and treatment-specific outcomes, and other health needs.²⁷

The American Cancer Society (ACS) recommends that discussion about screening should take place at:

- Age 50 for men who are at average risk of prostate cancer and are expected to live at least 10 more years.
- Age 45 for men at high risk of developing prostate cancer. This includes Black or African Americans and men who have a first-degree relative (father or brother) diagnosed with prostate cancer at an early age (younger than age 65).
- Age 40 for men at even higher risk (those with more than one first-degree relative who had prostate cancer at an early age).¹⁰



According to the CDC, nearly 13% of men in the United States develop prostate cancer during their lifetime,

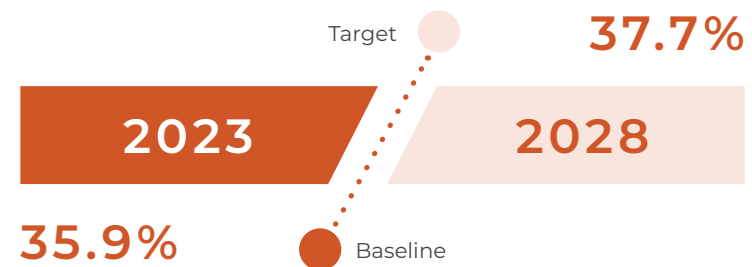
and 2 to 3 men will die from it. The older a man is, the greater the chance of getting prostate cancer. The risk for getting or dying from prostate cancer increases for men who are African American or have a family history of prostate cancer. Because prostate cancer does not always cause symptoms, speak with your healthcare provider to see if getting evaluated for prostate cancer might be right for you."

Mark Doescher, MD, MSPH
Associate Director, Community Outreach and Engagement, OU Health Stephenson Cancer Center

OBJECTIVE: Increase prostate cancer screenings among males, ages 50-80 years, by 5% based on the most recent guidelines.

Baseline source: BRFSS 2020.

PROSTATE CANCER SCREENING



Curtis Murray | Muskogee, OK

SURVIVOR STORY — *Diagnosis: Prostate Cancer*

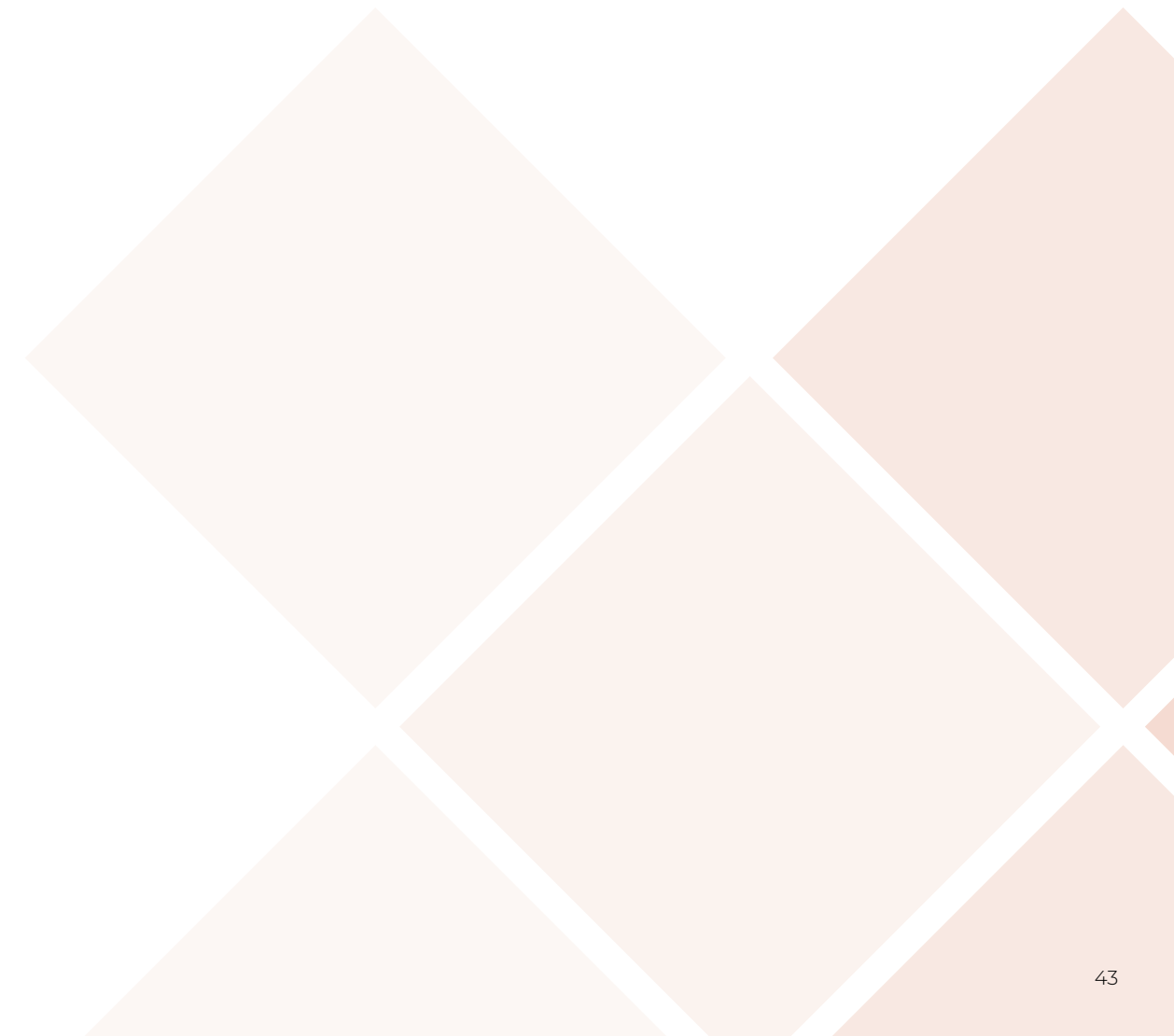
Curtis was diagnosed with prostate cancer at age 51 when undergoing routine testosterone testing.

“My prostate-specific antigen (PSA) test results were alarming; a PSA score of 4.0 is considered normal, whereas my score was 18. In August of 2022, I began the first of 44 radiation treatments. Before this, I was not aware of the statistics for African American men and prostate cancer. I now use this information and my experiences to mentor and educate others who are going through similar circumstances.”

As of May 2023, Curtis is nine months post-treatment. Access his full story [here](#).

PROSTATE CANCER STRATEGIES

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote the importance of prostate cancer screening.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • Individual • Providers • Public 	<p>Males:</p> <ul style="list-style-type: none"> • Age 50 and older. • Have low socioeconomic status/high social vulnerability index. • Reside in areas with low rates of cancer screenings. • Are part of populations with high cancer incidence or mortality.
Empower those who qualify for screening to make informed decisions.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • Individual • Providers • Public 	
Provide education for patients, providers and the public on prostate cancer according to the most recent available research.	<ul style="list-style-type: none"> • Early Detection 	<ul style="list-style-type: none"> • Individual • Providers • Public 	
Promote interventions designed to assist with recognizing the signs and symptoms of prostate cancer.	<ul style="list-style-type: none"> • Early Detection • Treatment 	<ul style="list-style-type: none"> • PSE Change Approach 	



Cancer Survivorship

ADULT CANCER SURVIVORSHIP

An individual is considered a cancer survivor from the time of diagnosis, through the balance of life. There is no one face or kind of cancer survivor. Some receive treatment and remain cancer free, while others continue to live with cancer. The term “cancer survivor” is meant to capture a population of those with a history of cancer rather than to provide a label that may or may not resonate with individuals.

The population of cancer survivors continues to grow in the United States. Recent estimates put the number of individuals living with a history of cancer at over 18 million.²⁸ In Oklahoma, the American Cancer Society estimates there will be “over 23,000 new cases” of cancer diagnosed this year.²⁹ With these numbers, it is important to know that cancer survivorship comes with various challenges and effects of the disease, including physical, mental, emotional and financial concerns. These needs can be long term and change over time, so it is especially important for survivors to adopt and maintain a healthy lifestyle such as eating well, being physically active, avoiding tobacco and taking care of both your physical and mental health needs. These behaviors have the potential to reduce both cancer- and non-cancer-related morbidity, including the risk for second primary cancers.



The number of people living with cancer is expected to reach more than

22.1 million
by 2030.

1



Oklahoma ranks

3rd

in the nation for percentage of adults who reported ever being told by a health professional that they had any form of cancer other than non-melanoma skin cancer.

2



The number of Oklahoma adults who have ever been told by a health professional that they had any form of cancer other than non-melanoma skin cancer is lower than the national rate.

(U.S. 8.3, OK 6.9)
per 100,000

3

Sources for graphics 1-3:

1: Miller KD, Nogueira L, Mariotto AB, et al. Cancer treatment and survivorship statistics, 2019. CA A Cancer J Clin. 2019;69(5):363-385. NIH National Library of Medicine. Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9949565/#djacl58-B2> on 14FEB2024:19:54:11.

2-3: America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at https://www.americashealthrankings.org/explore/measures/Other_Cancer/OK on 14FEB2024:18:36:25.



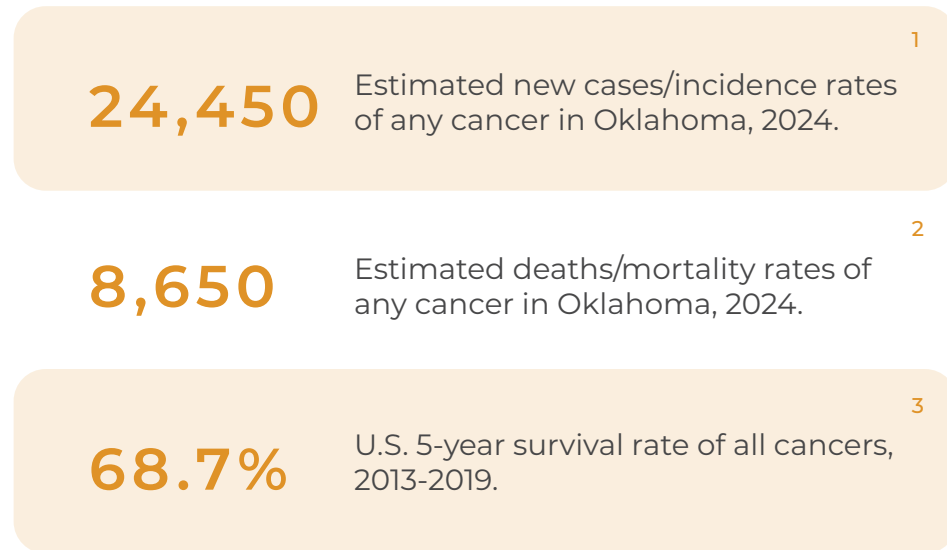
Cancer survivorship in the United States continues to increase each year,

according to the [American Cancer Society's Cancer Treatment & Survivorship Facts & Figures 2022-2024](#). Cancer survivors' experiences vary by cancer type, stage at diagnosis, treatment and individual patient characteristics and preferences. Understanding information about current treatment patterns and survivorship issues can help the public health community better meet the unique needs of this expanding population. As the population of cancer survivors in the U.S. continues to grow and become more diverse, the importance of optimizing short- and long-term survivorship care and outcomes and understanding the needs of caregivers is increasingly recognized."

Lori Blanton

Senior Director, State Partnerships, American Cancer Society

GOAL III: Decrease the negative impact on the physical and psychological health of persons diagnosed and living with cancer (other types except skin cancer).

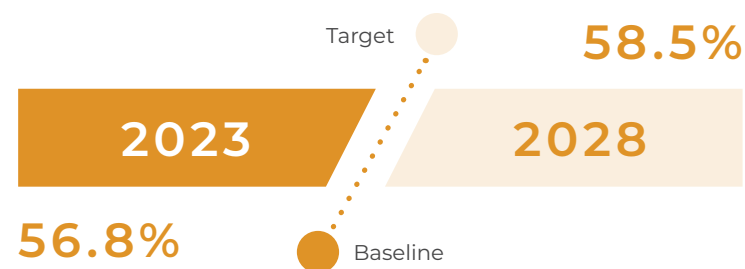


Sources for graphics 1-3:

1-2: American Cancer Society. Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/states/oklahoma> on 12FEB2024:2:29:02.
3: National Institute of Health National Cancer Institute. Surveillance Epidemiology, and End Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/all.html> on 14FEB2024:18:35:19.

OBJECTIVE: Increase the number of days of excellent or good health among cancer survivors by 3%.

SURVIVOR EXCELLENT OR GOOD HEALTH

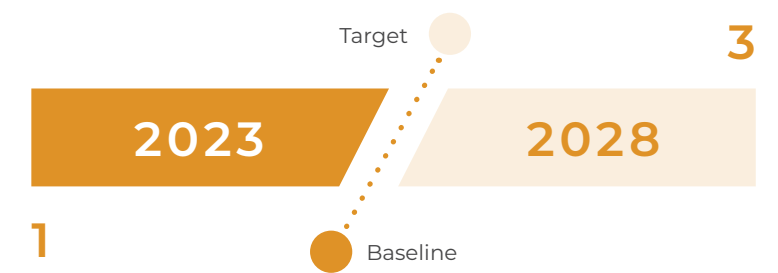


Baseline source: BRFSS 2021.

OBJECTIVE: Increase the number of support programs/systems designed to recognize and meet the needs of those impacted by cancer from 1 to 3.

Baseline source: OCCN Program EBI Tracking Sheet 2023.

CANCER CARE SUPPORTS



SURVIVORSHIP - ADULTS

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Promote lifestyle change programs designed to reduce the risk of developing secondary site and/or reoccurrence of cancers associated with poor nutrition, physical inactivity and tobacco use among cancer survivors.	• Quality of Life	• Individual • Providers • Public	Males and Females: • Ages 18 and older. • Have low socioeconomic status/high social vulnerability index.
Promote programs designed to improve the health and well-being of cancer survivors beginning at initial diagnosis.	• Quality of Life	• Individual • Providers • Public	• Reside in areas with low rates of cancer survivorship.
Facilitate interventions designed to educate patients, providers and the public on survivorship needs and controllable risk factors that can negatively impact cancer survivorship.	• Quality of Life	• Individual • Providers • Public	• Are part of populations with high cancer incidence or mortality.
Develop and disseminate key messaging to primary care providers on the transition from cancer care to primary care and long-term care needs of cancer survivors.	• Quality of Life	• PSE Change Approach	



Mary Shahan | Hulbert, OK

SURVIVOR STORY — *Diagnosis: Breast Cancer*

Mary was diagnosed with breast cancer in April 2012, and again in October 2019; the physical, mental and financial burden of each breast cancer occurrence varied significantly.

“On November 23, 2022, I underwent surgery to remove a nine-inch cancerous mass located in my chest wall. Despite my yearly mammograms being up to date, I am still at a loss for how it could go undetected for so long, but I am grateful to have more time to spend with my family.”

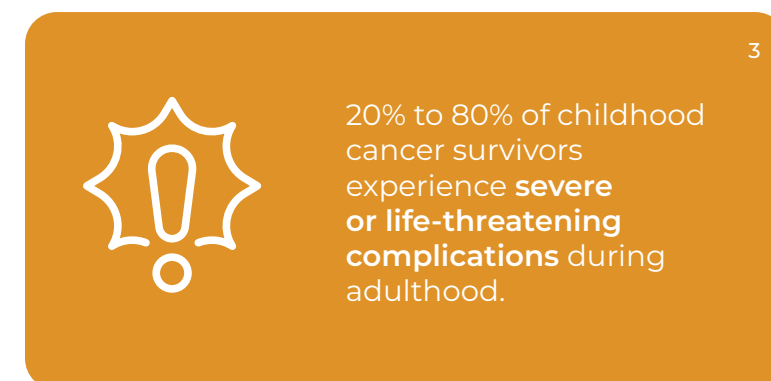
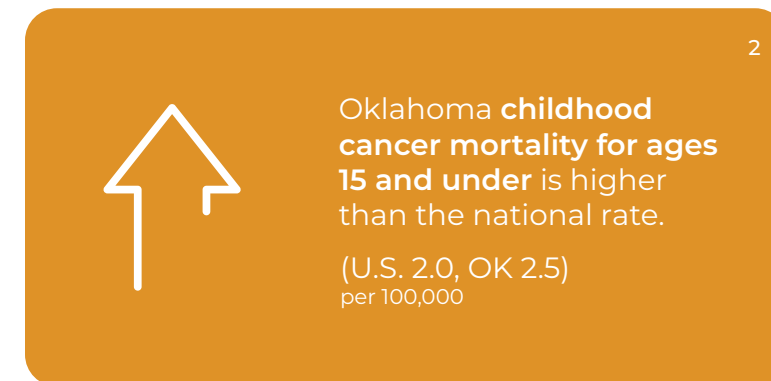
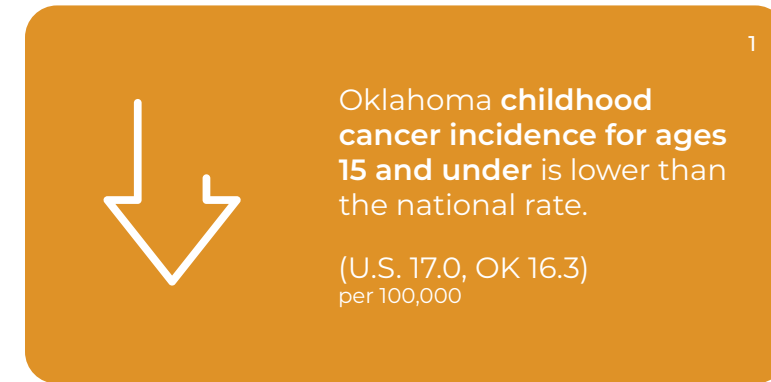
Mary has been cancer-free since March 2023. View her full story [here](#).

CHILDHOOD CANCER SURVIVORSHIP

Childhood cancer describes a group of cancers that affect children (infants to age 14) and teenagers (aged 15 to 19); also referred to as pediatric, adolescent and young adult cancer. Childhood cancer is the leading cause of death by disease, after infancy, among children in the United States. From 2010-2018, cancers were a leading cause of death among Oklahoma’s youth and children. The most common childhood cancers (leukemia, lymphomas and brain tumors) account for more than 60% of all childhood cancer.³⁰

While kids and adults do get some of the same types of cancers, there are significant differences between the two. Childhood cancers can occur suddenly, without early symptoms. They are generally caused by random DNA changes in your child’s cells, not lifestyle or environmental risk factors as is the case with adults.³¹ Current data suggest that approximately 8-10% of all children with cancer have a predisposition because of genetic factors.³²

According to the World Health Organization (WHO), “cancer in children cannot generally be prevented or identified through screening.”³³ Therefore, the most effective strategy to reduce the burden of cancer in children and improve outcomes is to focus on a prompt, correct diagnosis followed by effective, evidence-based therapy with tailored supportive care. Keeping in mind that the long-term needs for childhood cancer survivors begin during treatment and continue throughout the life of the individual and family, the objectives in this plan are focused on supporting children and families going through treatment as well as providing education and resources that support care when children return home, and improving childhood cancer data systems.



Sources for graphics 1-3:

1-2: National Vital Statistics System Public Use File. National Cancer Institute using SEER*Stat. Accessed at <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statername=oklahoma#t=3> 14FEB2024:01:19:24.

3: PDQ® Pediatric Treatment Editorial Board. PDQ Late Effects of Treatment for Childhood Cancer. Bethesda, MD: National Cancer Institute. Updated 2/14/2024. Accessed at: <https://www.cancer.gov/types/childhood-cancers/late-effects-hp-pdq>. 27FEB2024:13:28:21. [PMID: 26389273].

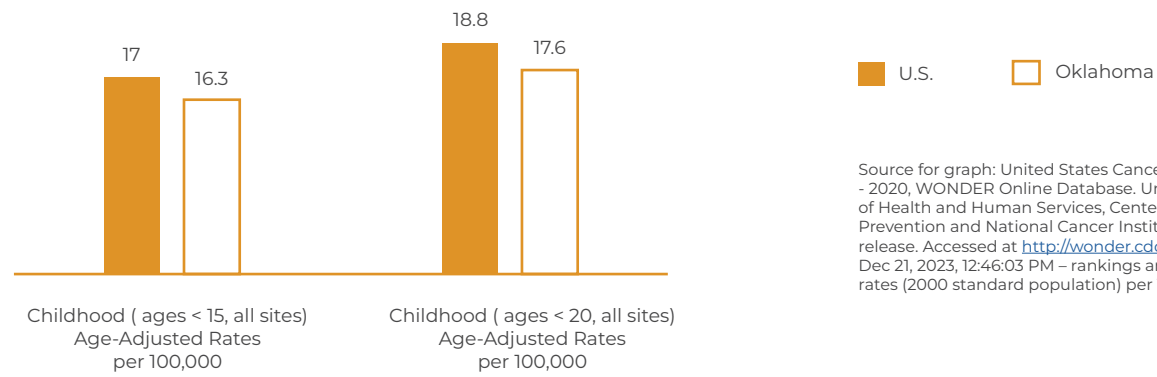


Childhood cancer is the number one cause of death by disease in America’s children.

While all states, tribes and territories have a focus on adult cancer strategies in state comprehensive cancer plans, few states include strategies to address the unique needs of childhood cancer. Including childhood cancer in state cancer plans is a huge step forward in reducing this disparity, leading to better care and cure of this vulnerable patient population.”

Ruth Hoffman
CEO, American Childhood Cancer Organization

OKLAHOMA CHILDHOOD CANCER INCIDENCE RATES AS COMPARED TO THE U.S. 2016-2020



Source for graph: United States Cancer Statistics - Incidence: 1999 - 2020, WONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2022 submission; 2023 release. Accessed at <http://wonder.cdc.gov/cancer-v2020.html> on Dec 21, 2023, 12:46:03 PM - rankings are based on age adjusted rates (2000 standard population) per 100,000.

9,620

Estimated children and adolescents diagnosed with cancer. ¹

1,040

Estimated children and adolescents die from cancer. ²

85.8%

of U.S. children and adolescents 0-14 years have a chance of surviving 5 or more years post-diagnosis with childhood leukemia, 2013-2019. ³

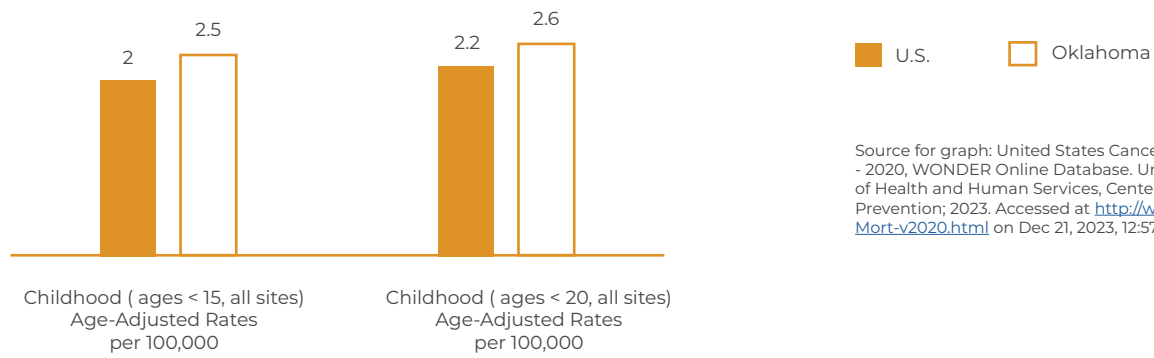
75.5%

of U.S. children and adolescents 0-19 years have a chance of surviving 5 or more years post-diagnosis with childhood brain and other nervous system cancer, 2013-2019. ⁴

Sources for graphics 1-4:

- 1-2: American Cancer Society. Cancer Statistics Center, 2024 Estimated New Cases & Deaths. Accessed at <https://cancerstatisticscenter.cancer.org/states/oklahoma> on 12FEB2024:29:02.
- 3: National Institute of Health National Cancer Institute. Surveillance Epidemiology, and End Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/childleuk.htm> on 12FEB2024:2:50:11.
- 4: National Institute of Health National Cancer Institute. Surveillance Epidemiology, and End Results Program (SEER). Cancer Stat Facts. Accessed at <https://seer.cancer.gov/statfacts/html/childbrain.html> on 12FEB2024:2:52:29.

OKLAHOMA CHILDHOOD CANCER MORTALITY RATES AS COMPARED TO THE U.S. 2016-2020

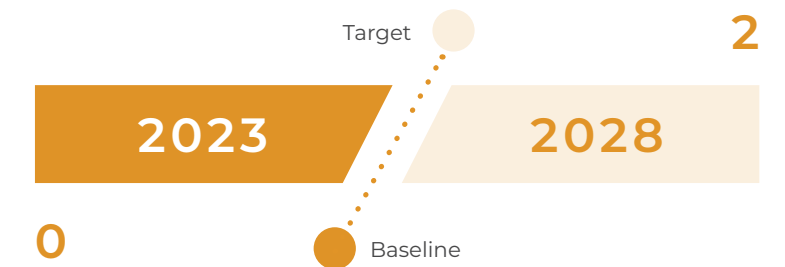


Source for graph: United States Cancer Statistics - Mortality: 1999 - 2020, WONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention; 2023. Accessed at <http://wonder.cdc.gov/Cancer-Mort-v2020.html> on Dec 21, 2023, 12:57:40 PM.

OBJECTIVE: Increase the number of cancer care support programs/systems designed to recognize and meet the needs of childhood cancer survivors from 0 to 2.

Baseline source: OCCN Program EBI Tracking Sheet 2023.

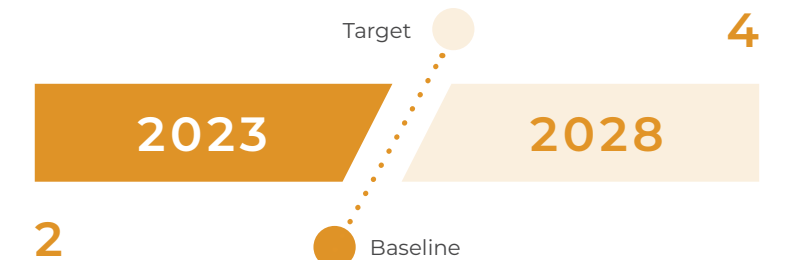
CANCER CARE SUPPORTS



OBJECTIVE: Increase partnerships to assess burden, incidence, mortality and survival of childhood cancer survivors from 2 to 4.

Baseline source: OCCN Evaluation Report 2023.

PEDIATRIC, ADOLESCENT & YOUNG ADULT CANCER PARTNERSHIPS



SURVIVORSHIP - CHILDREN

STRATEGY	CANCER CONTINUUM	IMPACT LEVEL	TARGET POPULATIONS
Identify new partners and implement strategies and resources to address needs of childhood cancer survivors.	<ul style="list-style-type: none"> Quality of Life 	<ul style="list-style-type: none"> Individual Providers Public 	<p>Males & Females:</p> <ul style="list-style-type: none"> Ages 0-17. Have low socioeconomic status/high social vulnerability index. Reside in areas with low rates of cancer survivorship. Are part of populations with high cancer incidence or mortality.
Promote programs designed to improve the health and well-being of cancer survivors beginning at initial diagnosis.	<ul style="list-style-type: none"> Quality of Life 	<ul style="list-style-type: none"> Individual Providers Public 	
Facilitate interventions designed to educate patients, providers and the public on survivorship needs and controllable risk factors that can negatively impact cancer survivorship.	<ul style="list-style-type: none"> Quality of Life 	<ul style="list-style-type: none"> Individual Providers Public 	
Develop and disseminate key messaging to primary care providers on the transition from cancer care to primary care and long-term care needs of childhood cancer survivors transitioning into adult care.	<ul style="list-style-type: none"> Quality of Life 	<ul style="list-style-type: none"> PSE Change Approach 	



Parker Henderson | Mustang, OK

SURVIVOR STORY — *Pre-B Cell Acute Lymphoblastic Leukemia (ALL)*

Just 16 days after turning eight years old, Parker was diagnosed with Pre-B Cell Acute Lymphoblastic Leukemia.

“Although her prognosis was good, Parker had a long, hard road ahead of her. The treatment plan consists of daily chemotherapy for 2.5 years. Despite this, she returned to school to complete the third grade and reentered the pitcher’s circle for softball. If you ask her how she does it, her answer is always the same: ‘because I’m Parker and I have to just keep going.’”

After her initial diagnosis on January 9, 2022, Parker is currently in remission. Read her full story [here](#).

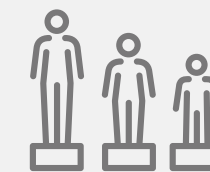
Population Health

HEALTH EQUITY

The Plan is intended to serve all demographics within Oklahoma. Therefore, it is important to understand the unique composition of Oklahoma. This section will highlight characteristics that can influence how cancer impacts Oklahomans as compared to other U.S. populations.

Healthy People 2030 defines health equity as “the attainment of the highest level of health for all people.”³⁴ Although every Oklahoman should have an equal opportunity to prevent cancer, find it early and receive proper treatment and follow-up after treatment is completed³⁵, the Oklahoma Comprehensive Cancer Network (OCCN) recognizes that many factors, including home, neighborhood, race or ethnicity, sexual orientation, education level, language proficiency, physical or mental abilities, income, etc., can make this difficult.

The OCCN is dedicated to the development and implementation of evidence-based interventions (EBIs) that address historical and contemporary injustices, overcoming barriers to health and healthcare while eliminating preventable cancer-related health disparities. Because of this, strategies within the Oklahoma Cancer Prevention & Control Plan will include EBIs developed for Oklahoma populations who disproportionately experience higher rates of cancer-related incidence and mortality than others. For more information on health equity, see [Healthy People 2030](#).



Equality

assumes that everyone will benefit from having **the same resources**.



Equity

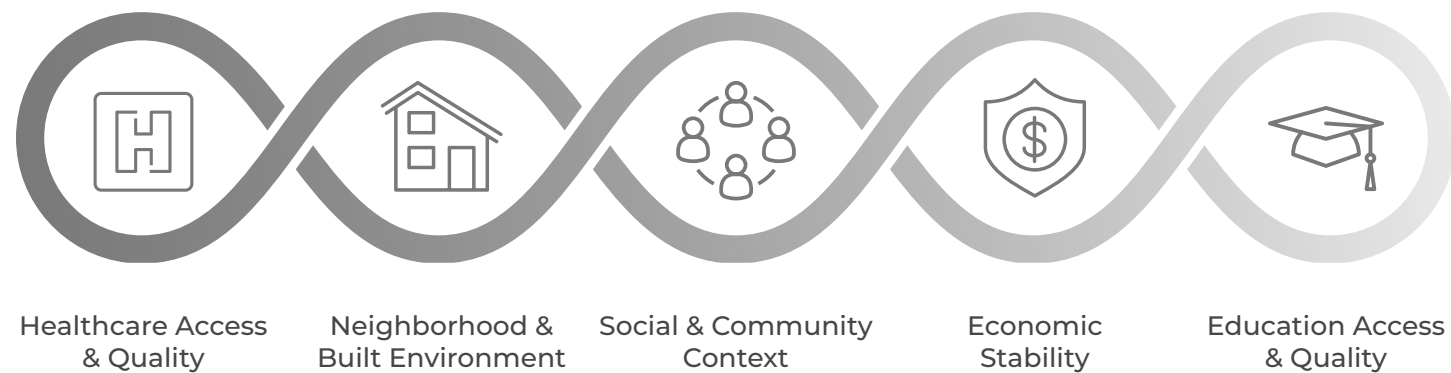
aims to **adjust resources for disadvantaged groups** to create opportunities to be as healthy as possible.

SOCIAL DRIVERS OF HEALTH

The World Health Organization (WHO) defines social drivers of health (SDoH) as “the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life.”³⁶

The Oklahoma Comprehensive Cancer Network (OCCN) focuses on SDoH that impact the likelihood of a person developing and/or dying from cancer. For example, a person is unable to receive cancer screenings as recommended due to one or a combination of factors: financial hardship preventing paying for cancer screening tests, being under or uninsured, working for an employer that does not offer paid leave, living in a rural or remote area or lack of reliable transportation. Each of these scenarios could directly impact the ability of an individual to receive the necessary screenings to prevent cancer or diagnose it early. The following diagram highlights how SDoH are grouped into five domains. For more information on SDoH, please visit [Healthy People 2030](#).

SOCIAL DRIVERS OF HEALTH



Sources for graphic:
https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1
 Healthy People 2030, U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Retrieved 10.05.2023. Accessed at <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>.

Long-standing inequities in five key areas of SDoH are interrelated and influence a wide range of health and quality of life risks outcomes. Examining these layered health and social inequities helps the OCCN to better understand how to promote health equity and improve cancer outcomes throughout Oklahoma. Three of these factors (natural and/or man-made trauma or experiences, mental health disorders and rural residency) are highlighted later in this Plan. For more information, see the Oklahoma Overview section.

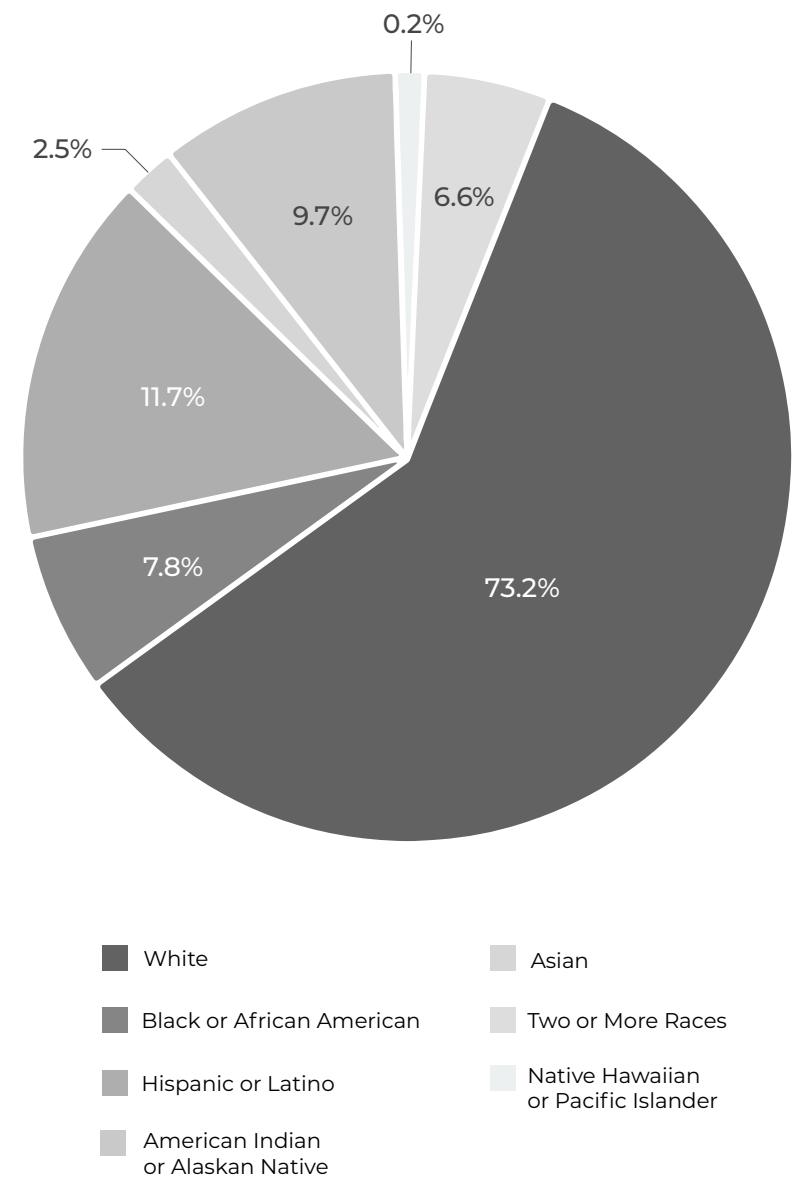
OKLAHOMA DEMOGRAPHICS

Oklahoma residents account for about 1.2% of the U.S. population. The U.S. Census states that “of the estimated 4,019,800 Oklahomans, 16.4% are persons 65 years and older.”³⁷ According to the National Cancer Institute, “advancing age is the most important risk factor for cancer overall and for many individual cancer types. Although cancer can be diagnosed at any age, the incidence rates for cancer overall climb steadily as age increases.”³⁸

Oklahoma City, the state’s centrally located capitol, is the largest city and home to an “estimated 629,000 residents (16%).”³⁷ About 100 miles to the northeast is Tulsa, a city accounting for “just over 400,000 residents (10.3%) of the state’s population.”³⁷

TRAUMA

To begin to create a state of equitable health, we must first examine the impact of trauma on the health and well-being of entire populations. Trauma can impact everyone, regardless of age, gender, socioeconomic status, race, ethnicity and/or sexual orientation. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), the effects of trauma and violence place a heavy burden on individuals, families and communities. Research has shown that chronic physical health conditions and other risky behaviors have been linked with traumatic experiences. Although many people who experience a traumatic event will go on with their lives without lasting negative effects, others will have difficulties.³⁹



Sources for chart:
<https://mchb.tvisdata.hrsa.gov/Narratives/Overview/7ccb7d02-eda5-4a73-87da-4cb5f3c3b70b#:~:text=A%20rural%20state%2C%20Oklahoma%20has%20three%20large%20cities>
<https://www.census.gov/topics/population/age-and-sex/about.html>
<https://www.census.gov/quickfacts/OK>.

Trauma, both natural and man-made, can have a harmful effect on not only the individual, but also on generations afterward, leaving those to continue to endure negative effects of these events. Like many others, Oklahomans have experienced both throughout statehood. A handful of these incidents include the [1830 Indian Removal Act and Trail of Tears](#); [1921 Tulsa Race Massacre](#); [1995 Alfred P. Murrah Building Bombing](#); [1999 Tornado Outbreak](#); and [2020 COVID-19 Pandemic](#).

It is important to note that despite such collective experiences, Oklahomans continue to thrive and come together to help our fellow residents in times of need. For more information on the history of Oklahoma, visit the [Oklahoma Historical Society](#). For information about Oklahoma services, resources, commerce, recreation, etc., access [oklahoma.gov](#).

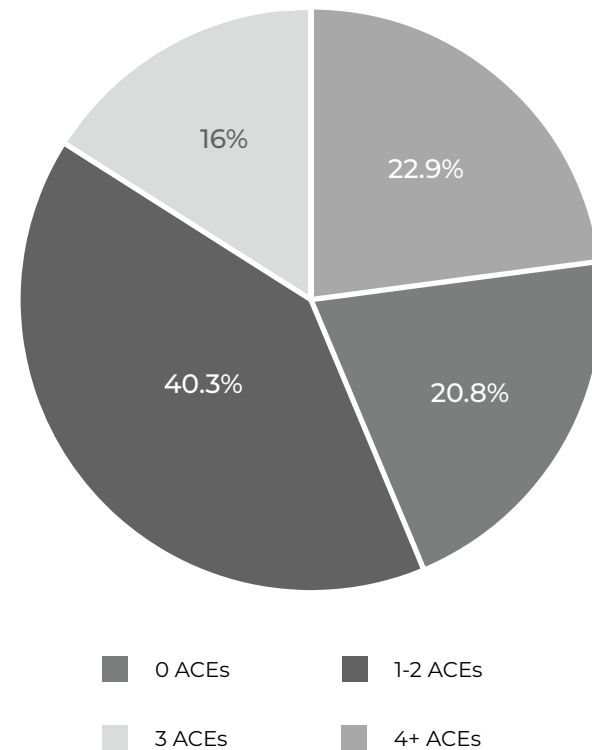
ADVERSE CHILDHOOD EXPERIENCES

Adverse childhood experiences (ACEs) are potentially traumatic events that occur in childhood (birth to 17 years). An individual's "ACEs score" is determined by answering a series of questions about traumatic experiences that occur in early life. The score is created by adding the number of different types of these events a person has experienced. Some higher number of ACEs often correlate to higher risk of health problems, such as (but not limited to) obesity, cancer and tobacco use, the score is intended to serve as an indicator of how likely a person might be to face these challenges.⁴⁰

There is a need to reduce ACEs; this will act as a foundation, helping to prevent cancer on both an individual and community level. **Oklahoma ranks 41st in the nation at 18.3% for children who have experienced two or more ACEs.**⁴¹

In 2021, the Oklahoma Youth Risk Behavior Survey (YRBS) added 13 questions on ACEs. Eight core questions were used to create a composite score from zero to eight. Data from the 2021 YRBS were weighted and representative of all public school students in grades 9-12 in Oklahoma.⁴²

OKLAHOMA ACEs SCORES



Source for chart: https://oklahoma.gov/content/dam/ok/en/health/health2/aem-documents/family-health/maternal-and-child-health/child-adolescent-health/yrebs/2021/ACEs_Data_Presentation_2022_FINAL.pdf

MENTAL HEALTH

Higher cancer-related mortality has been observed among people with mental health disorders than in the general population.⁴³ Mental health disorders may influence cancer outcomes through an array of socioeconomic, behavioral and biological mechanisms such as less access to healthcare, engaging in unhealthy behaviors and biological changes that may cause cancer to spread or become worse.

According to the National Behavioral Health Network, more than half of patients with terminal cancer have at least one psychiatric disorder. Also, individuals with a mental illness may develop cancer at 2.6 times the rate of individuals without, possibly due to late-stage diagnosis and inadequate treatments and screenings. Another factor to consider is that the rate of tobacco use among people with a substance use disorder or mental illness is 94% higher than among adults without these disorders.⁴⁴

The Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) reported that based on 2020 data, Oklahoma rates for any mental illness was 25.6%. This means that between 700,000 and 950,000 adult Oklahomans need services; most are not receiving the care they need to fully recover from their illnesses. Approximately 180,000 Oklahomans received ODMHSAS services in FY21.⁴⁵ For more information on mental health, please access the [2023 State of Mental Health Report](#).

Sources for graphics 1-3:

1: Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/survivors/health-care-providers/mental-health-care-prov-ed.htm#> on 12FEB2024:17:26:06.
 2: U.S. HHS, Centers for Medicare & Medicaid Services, National Plan and Provider Enumeration System, September 2023. America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org. Accessed at <https://www.americashealthrankings.org/explore/measures/MHP/OK> and on 12FEB2024:18:24:45.
 3: National Council for Mental Wellbeing, National Behavioral Health Network for Tobacco Control & Cancer Control. Accessed at <https://www.thenationalcouncil.org/program/national-behavioral-health-network-for-tobacco-cancer-control/> on 12FEB2024:16:55:03.

1



As many as **3 out of 4** people with cancer experience **symptoms of psychological distress** or cognitive concerns.

2



Oklahoma ranks **12th** in the nation for the **availability of mental health providers**

3

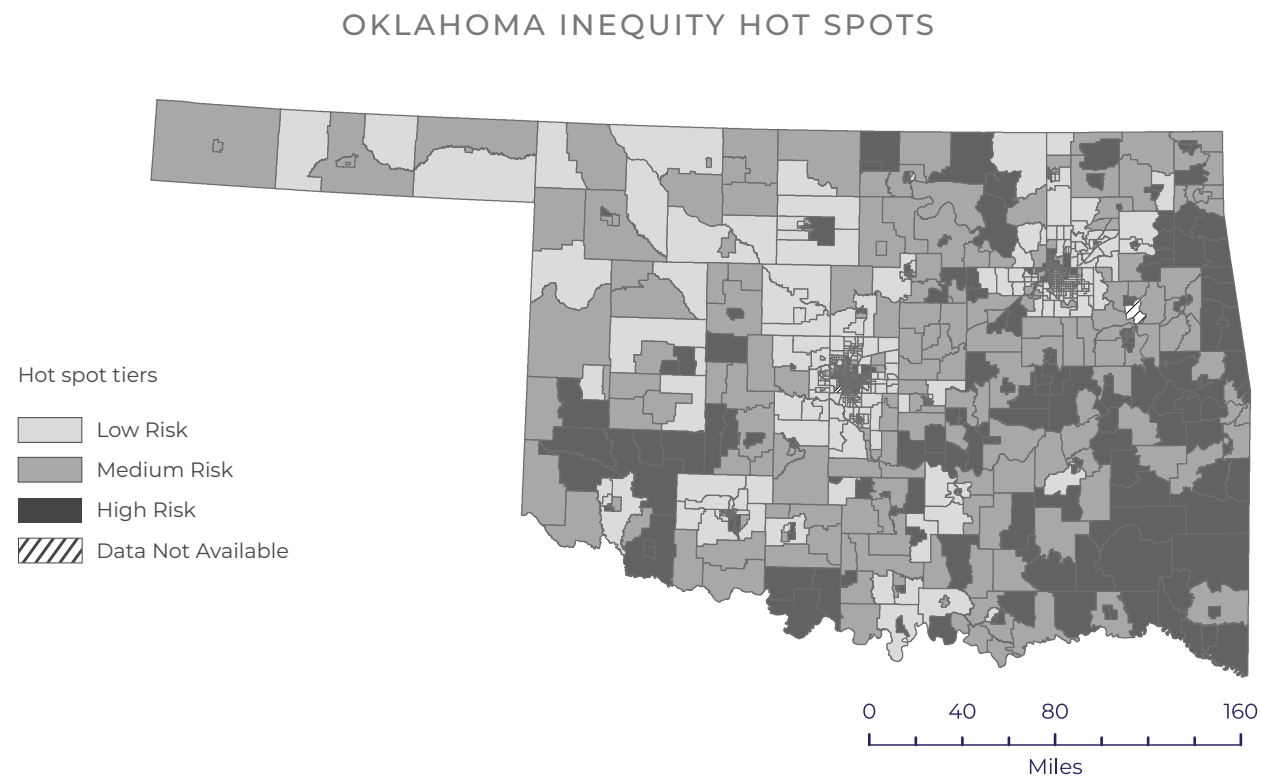


Individuals with a mental illness may develop cancer at a **2.6x higher rate.**

RURAL HEALTH

Where someone lives can impact their chances of surviving cancer. Rural areas are generally associated with multiple healthcare challenges, which are disproportionately more common among racial and ethnic minorities and those who are socioeconomically disadvantaged. According to OU Health Stephenson Cancer Center, there are 33 states with higher cancer incidence rates but only three states have higher cancer mortality rates.⁴⁶ Of Oklahoma's 77 counties, 59 are considered rural.

The map below highlights the 362 high-risk inequity hot spots across 59 counties which account for 31% of Oklahoma's overall population. For more information on the rural health of Oklahoma, please refer to the [State Health Improvement Plan](#).



The burden of travel can negatively influence stage at diagnosis, appropriate treatment and quality of life for those with cancer. In Oklahoma, most cancer centers are located within the two largest metropolitan areas — Oklahoma City and Tulsa. The distance some must travel to access cancer care can have a substantial impact on treatment outcomes. In other words, Oklahomans with new cases of cancer may be less likely to be identified in crucial early stages and/or receive timely treatment services to reduce risk of death, whereas larger metropolitan areas tend to attract a higher percentage of specialty physicians and support more cancer diagnostic and treatment centers and support services than rural areas.

The accompanying map displays the locations of Oklahoma's nine Cancer Treatment Centers accredited by the Commission on Cancer (CoC).

Although breakthrough discoveries and technological innovations have led to lifesaving treatments which have resulted in unprecedented progress against cancer in recent decades, cancer continues to pose a major health challenge to Oklahoma and certain segments of our population. For instance, Oklahoma's rural areas have lower incidence rates of cancer than urban areas, yet rural areas have higher cancer death rates.



The diagram below illustrates examples of populations that experience an unequal burden of cancer.

UNEQUAL CANCER BURDEN IN OKLAHOMA

Cancer health disparities in the U.S. are adverse differences in cancer measures such as number of new cases, number of deaths, cancer-related health complications, survivorship and quality of life after cancer treatment, screening rates and stage diagnosis that exist among certain population groups.

It is important to note that some populations may carry even a higher burden of cancer because they simultaneously fall into more than one of these categories.

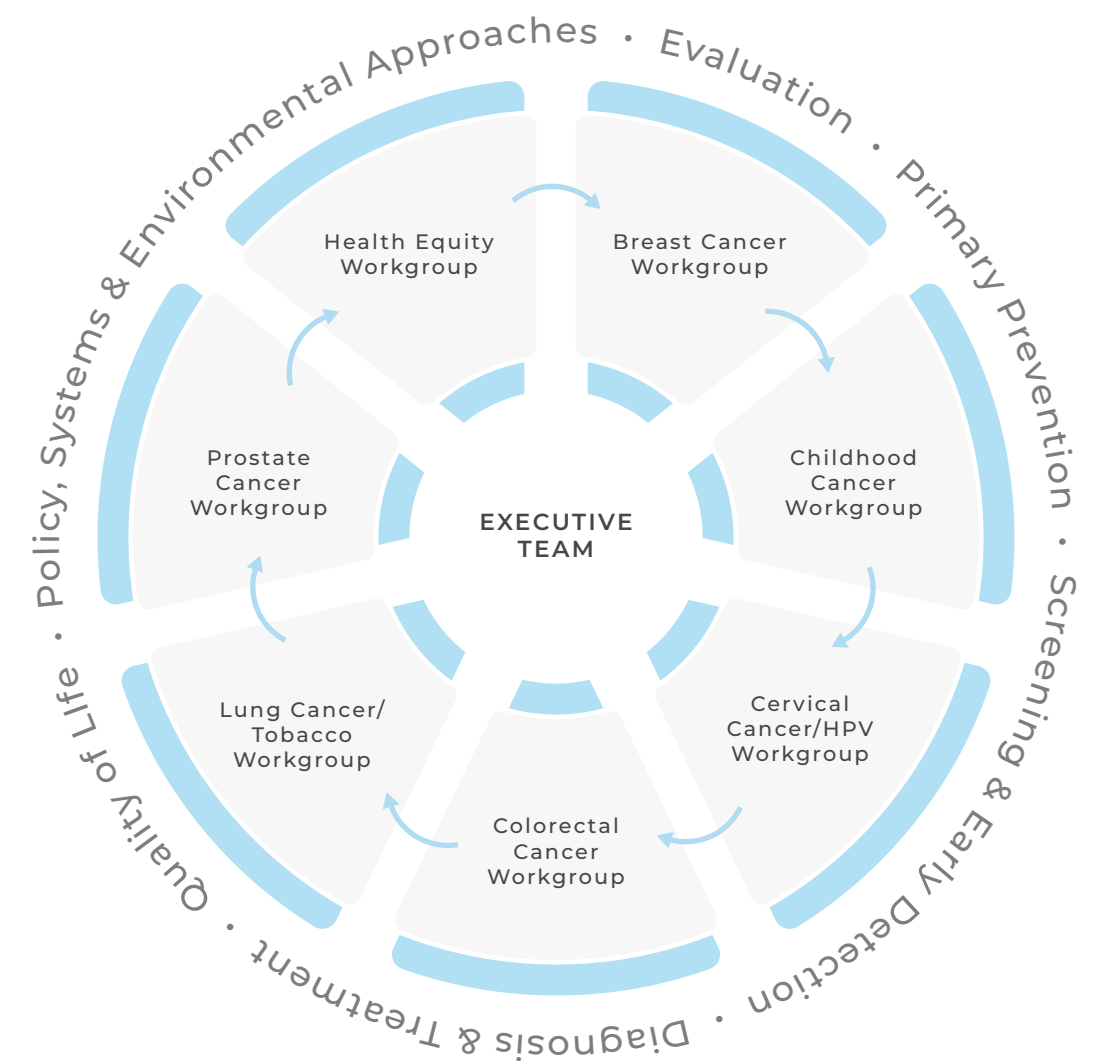


Source for map: Oklahoma State Department of Health (OSDH), Community Analysis & Linkages, created 12.08.2021

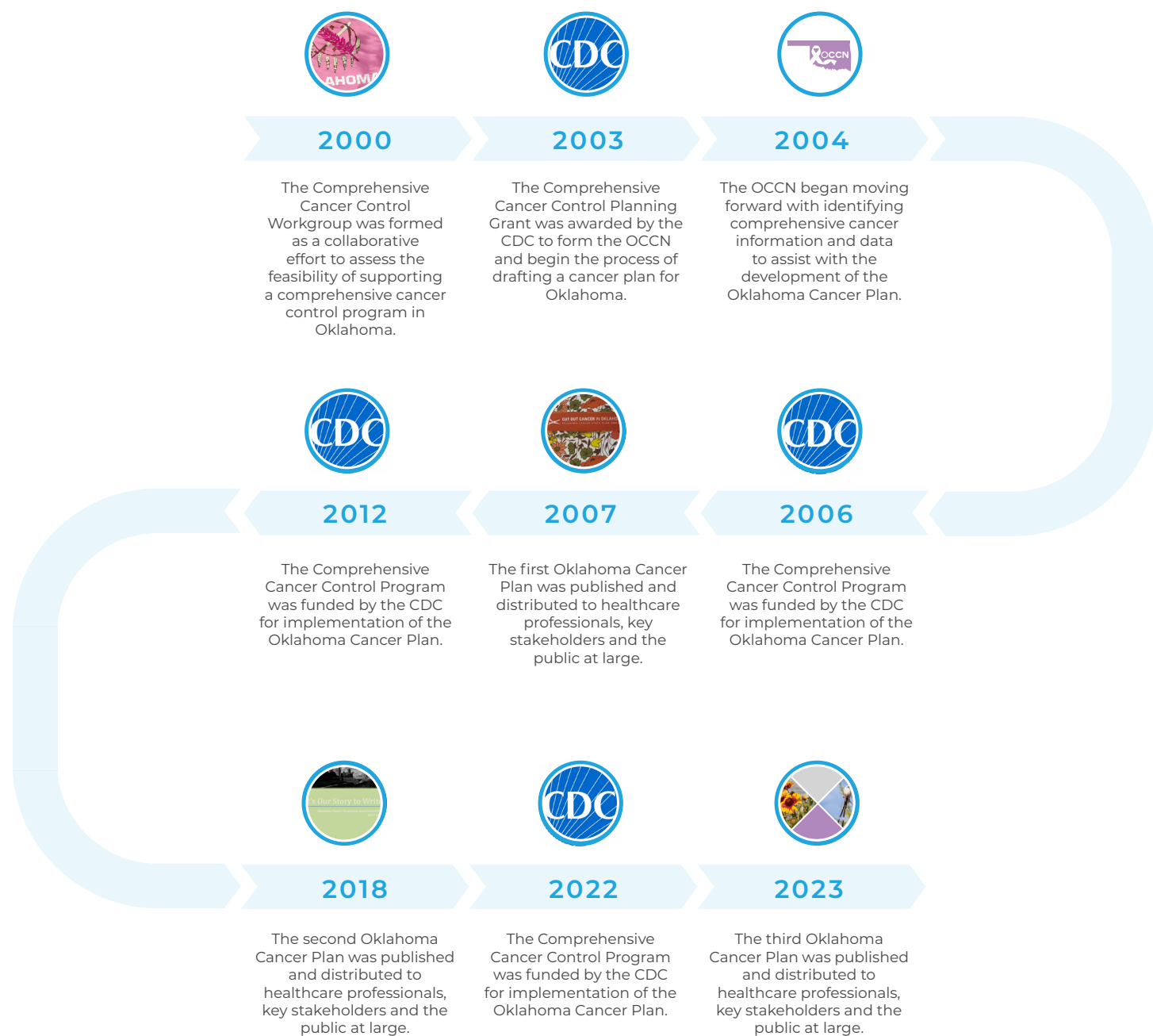
Closing

OKLAHOMA COMPREHENSIVE CANCER NETWORK

Implemented through a funding agreement by the Centers for Disease Control and Prevention (CDC), the Oklahoma Comprehensive Cancer Network (OCCN) has committed to strengthening Oklahoma's health infrastructure and prevention programs by working collaboratively with people and organizations across the state to help reduce the mortality and morbidity of cancer, to improve survivorship for those who have had cancer, to track the number of individuals who succumb to cancer and to ensure that cancer control planning is equitable and geared to all needs and members of the population, including high-risk subgroups. Despite OCCN functioning under the umbrella of the OSDH Comprehensive Cancer Control Program, it acts as an independent entity (see diagram below).



OKLAHOMA COMPREHENSIVE CANCER CONTROL PLANNING TIMELINE



The OCCN is governed by a group of members referred to as the OCCN Executive Team. The Executive Team members have agreed to dedicate extra time and resources toward the ongoing development, implementation and evaluation of the objectives within the Oklahoma Cancer Prevention & Control Plan. Currently, the team is comprised of the OCCN Lead, both Co-Leads and at least two lead representatives from each of the seven workgroups. The OCCN workgroups determined by Oklahoma’s highest cancer incidence, mortality, cross-cutting, risk-factors, inequities, etc., offer members the opportunity to collaborate with others to expand the implementation of cancer prevention and control strategies beyond those that one individual or organization could do alone.

The OCCN originated in 2003 to address comprehensive cancer control in Oklahoma. The original network published the first Oklahoma Cancer Prevention & Control Plan in 2007 (*Cut Out Cancer*); key goals were addressed by stakeholders, health systems and organizations committed to reducing Oklahoma’s cancer burden. During this time, a list of resources directed at both cancer patients and their caregivers was created.

In 2018, a second Oklahoma Cancer Prevention & Control Plan (*It’s Our Story to Write*) was produced. This Plan examined the complexities, challenges, and strengths of cancer care in Oklahoma; focused efforts to reduce Oklahoma’s cancer burden included partnering with other professionals and organizations pursuing the prevention and control of other leading chronic diseases in Oklahoma. During the span of this plan, the OCCN website was developed.

Since then, the OCCN has come together with a renewed energy and commitment to addressing Oklahoma’s cancer burden. These individuals have volunteered their time and expertise to develop the third edition of the Oklahoma Cancer Prevention & Control Plan (*Cancer is Not OK!*). This plan highlights the need for increased efforts to prevent and detect cancers earlier, improve diagnosis and treatment options and access, reduce health disparities, and enhance the quality of life of cancer survivors. To access Oklahoma’s cancer plans and the resource directory, please visit the [OCCN website](#).

The OCCN framework on the following page represents the four foundational areas upon which the network focuses key interventions for cancer prevention and control. Also depicted are three cross-cutting priorities which were also considered throughout the development of the Plan’s goals, objectives and strategies.

OCCN COMPREHENSIVE CANCER PREVENTION & CONTROL FRAMEWORK

FOCUS

PREVENTION

Prevent future occurrences of cancer by promoting healthy behaviors, raising awareness and creating healthy environments.

SCREENING & DETECTION

Prevent cancer by finding early lesions so they can be treated or removed before they become cancerous.

Locate cancers at an early stage when treatment works best.

DIAGNOSIS & TREATMENT

Ensure the availability and accessibility of quality and culturally competent cancer care services.

QUALITY OF LIFE

Reduce the recurrence of cancers by encouraging healthy behaviors during treatment, recovery and palliative care.

Address the treatable long-term or late effects of cancer caused by treatment and surgery.

KEY INTERVENTIONS

Promote vaccination for cancer-causing viruses.

Support tobacco-free policies and cessation services.

Improve access to healthy foods and opportunities for physical activity.

Provide education and outreach activities to encourage cancer screening.

Breast: Mammography;
Cervical: PAP Test, HPV Test;
Colorectal: Fecal Occult Blood Test, Fecal Immunochemical Test,
Colonoscopy, Sigmoidoscopy
Lung: Low-dose Computed Tomography Scan
Prostate: Digital Rectal Exam, Prostate Specific Blood Test, Antigen Blood Test

Supporting patient navigators and community health workers who help remove barriers to accessing cancer information, services and treatment.

Working within health systems to improve quality of services through accreditation.

Improve surveillance to assess survivors' needs.

Promote patient-provider education programs and resources to help survivors and caregivers make informed decisions.

Support policies and systems changes to improve the mental and physical health of survivors.

CROSS-CUTTING PRIORITIES

- Building healthy communities through policy, systems and environmental (PSE) approaches.
- Achieving health equity within cancer prevention and control.
- Demonstrating outcomes through evaluation.

OCCN EXECUTIVE SUMMARY

Oklahoma Comprehensive Cancer Network (OCCN) membership is open to private and non-profit organizations, healthcare providers and organizations, community coalitions, academic institutions, state, tribal and government agencies, researchers, cancer survivors and individuals who share a common goal to reduce the burden of cancer and related health disparities in Oklahoma. The OCCN will continually:

- Develop, implement, evaluate and update the Oklahoma Cancer Prevention & Control Plan through its sub-committees and workgroups.
- Educate organizations and professionals about cancer and associated risk factors and to support activities that would improve cancer research, education, prevention and treatment in Oklahoma.
- Encourage broad participation and a process that is evidence-based, data-driven, culturally competent and comprehensive in nature.

Saving lives and reducing disparities for Oklahomans is an achievable goal. The first step is to ensure that the public can make healthier choices, while providing actionable health information and building on strong cancer prevention and control strategies. Through a collective effort, the desired outcomes can be reached by integrating cancer prevention and control into the daily lives and activities of all Oklahomans.

ACKNOWLEDGMENTS & DEDICATIONS

The entire leadership of the OCCN would like to express heartfelt gratitude to all who supported the development of the 2023-2028 Oklahoma Cancer Prevention & Control Plan; many individuals contributed both time and energy toward this Plan. The material within was provided by individuals who have been personally affected by cancer and/or serve in a capacity dedicated to enhancing the lives of all those affected by this disease.

OCCN LEADERSHIP

Mark Doescher, M.D.
Andrea L. Rooks
Jennifer Roysdon

OCCN WORKGROUP LEADERSHIP

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Floritta Pope	William Dooley, M.D.
Joan Walker, M.D.	

Source: National Institute of Health, Division of Cancer Control and Population Sciences. Adapted from David B. Abrams, Brown University School of Medicine. Accessed at <https://cancercontrol.cancer.gov/about-dccps/about-cc/cancer-control-continuum>.

OCCN MEMBERSHIP

Alcohol Beverage Licensing Enforcement	Mercy Hospital
American Cancer Society	Oklahoma City Indian Clinic
American Childhood Cancer Organization	Oklahoma Foundation for Medical Quality
American Lung Association	Oklahoma Health Care Authority
Blue Cross & Blue Shield of Oklahoma	Oklahoma Hospital Association
Centers for Disease Control and Prevention	Oklahoma Primary Care Association
Cherokee Nation	Oklahoma State Department of Health
Choctaw Nation	Oklahoma State University
CurtCares	Pfizer
Genentech	Soulful Survivors
Kaw Nation	Survivors, Caregivers, Friends & Families
Leukemia & Lymphoma Society	Tobacco Settlement Endowment Trust
Lynn Institute	University of Oklahoma
Merck	

SPECIAL THANKS to the courageous men, women and children who shared their personal and/or loved one's cancer journey in our previous Plan. Their legacy is etched in every act of preventing cancer within our state. Each one will forever be a part of our history and our hearts.

Amity Ritze (Breast Cancer)
 Cynthia Branham (Colorectal Cancer)
 Darla Thompson (Inoperable Hodgkin's Lymphoma)
 Donna Watkins (Breast Cancer)
 Greta Shepherd-Stewart (Breast Cancer)
 Jennifer Winget (Cervical Cancer)
 Larry Watkins (Colorectal Cancer)
 Ronnie Trentham (Squamous Cell Carcinoma)
 Sam Bilby (Acute Lymphoblastic Leukemia)

GLOSSARY

Below is a list of common terminology used in cancer prevention, control and research. To access a comprehensive list of cancer terms, please consult the [National Cancer Institute Dictionary](#) and/or the [American Cancer Society Glossary for Nonscientists](#).

Age Adjusted Rate: A rate statistically modified to eliminate the effect of different age distributions in different populations.

CAT Scan: A diagnostic imaging exam that uses computers and x-ray machines to create cross-sectional images of the body. Also called computed tomography scan or CT scan.

Cervical Cytology: Also called a pap smear or test; collects cervical cells so they can be checked for changes caused by HPV that may, if left untreated, turn into cervical cancer.

Cessation: Process of ending or being ended.

Colonoscopy: An exam used to look for changes (such as swollen, irritated tissues, polyps or cancer) in the large intestine (colon) and rectum (lower part of the large intestine that connects to the sigmoid colon).

Community: Group of different people living in the same area.

Diagnosis: Process of identifying a disease, condition or injury from its signs and symptoms.

Digital Rectal Exam: A medical test that checks for abnormalities in your rectum, anus and prostate gland. Also called a DRE.

Evidence Based Intervention: Practices or programs that have evidence to show that they are effective at producing results and improving outcomes when implemented.

Health Disparities: Type of preventable health difference that is closely linked with social, political, economic and environmental disadvantage.

Incidence: The number of new cases of an illness or condition occurring within a population during a specified period, often expressed as a rate per 100,000 population.

Mammogram: An x-ray of the breast; the use of film or a computer to create a picture of the breast.

Morbidity: The state of having a specific illness or condition. While morbidity can refer to an acute condition, it often refers to a condition that's chronic (long-lasting).

Mortality: The number of deaths that have occurred (due to a specific illness or condition) in a population during a specified period, often expressed as a rate per 100,000 population.

Oncogene: A gene that is present in every cell and causes healthy cells to become cancerous under particular conditions.

PAP Test: Also called a PAP Smear, a procedure to test for cervical cancer in women that involves collecting cells from the cervix (lower end of the uterus at the top of the vagina).

Population: A group of same people living in an area.

Population Health: The health status and health outcomes within a group of people rather than considering the health of one person at a time.

Prevalence: The number of people with a specific disease or condition in a given population at a specific time. Unlike incidence, this measure includes both newly diagnosed and pre-existing cases of the disease.

Prostate Specific Antigen Test: A laboratory test that measures the amount of protein made by the prostate gland found in the blood. Also called a PSA test.

Rate: The number of events (diseases or deaths) that occur during a specified time.

Sedentary: A way of life characterized by much sitting and little physical exercise.

Sigmoidoscopy: Diagnostic test used to check the sigmoid colon, which is the lower part of your colon or large intestine. This section of your colon is close to your rectum and anus.

Stages of Cancer: Depicted as I-IV-used to describe a cancer; where a cancer is located, size of the cancer, how far it has grown into nearby tissues and if it has spread to nearby lymph nodes or other parts of the body.

Trend: Predicted change in rates of cancer over time; expressed as a percent change.

SOURCE CITATIONS/REFERENCES

1. American Cancer Society. PSE Change Guide. Policy, Systems, and Environmental Change in Comprehensive Cancer Control. Accessed at https://www.acs4ccc.org/wp-content/uploads/2022/02/PSE-in-CCC-Guide_FINAL.pdf on June 26, 2023.
2. Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/obesity/basics/adult-defining.html> on August 9, 2023.
3. Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/obesity/index.htm> on August 9, 2023.
4. Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion. Last Reviewed: June 27, 2022. Accessed at <https://www.cdc.gov/tobacco/health-equity/index.htm> on June 20, 2023.
5. Oklahoma State department of Health, Center for Health Statistics, Health Care Information, Behavioral Risk Factor Surveillance System (BRFSS) 2020 and 2022, on Oklahoma Statistics on Health available for everyone (OK2SHARE). Accessed at <https://www.health.state.ok.us/>
6. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014 [accessed 2022 Feb 7]. Accessed at <https://www.cdc.gov/tobacco/sgr/50th-anniversary/pdfs/wynk-cancer.pdf> on August 25, 2023.
7. Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Last reviewed September 12, 2023. Accessed at https://www.cdc.gov/cancer/hpv/basic_info/index.htm#:~:text=Usually%2C%20the%20body%E2%80%99s%20immune%20system,%20and%20%20often%20no%20symptoms on October 5, 2023.
8. National Center for Chronic Disease Prevention and Health Promotion. Last reviewed: February 28, 2022. Accessed at <https://www.cdc.gov/hpv/parents/cancer.html#:~:text=HPV%20vaccination%20can%20prevent%20over,that%20can%20lead%20to%20cancer> on September 23, 2023.
9. American Cancer Society Recommendations for Human Papilloma Virus (HPV) Vaccine Use. Last reviewed July 9, 2020. Accessed at <https://www.cancer.org/cancer/risk-prevention/hpv/acs-recommendations-for-hpv-vaccine-use.html>.

10. American Cancer Society Guidelines for the Early Detection of Cancer. Last reviewed: November 1, 2023. Accessed at <https://www.cancer.org/cancer/screening/american-cancer-society-guidelines-for-the-early-detection-of-cancer.html> on November 11, 2023.
11. American Cancer Society. Key Statistics for Breast Cancer. Updated January 12, 2022. Accessed at <https://www.cancer.org/cancer/types/breast-cancer/about/how-common-is-breast-cancer.html> on August 18, 2023.
12. Campbell JE, Sambo AB, Kong AY, Hunsucker LA, Pharr SF and Doescher MP. Cancer in Oklahoma Data Brief Series: Female Breast Cancer in Oklahoma. Community Outreach and Engagement, Stephenson Cancer Center, OU Health. 2022 Aug.; 2(4). Accessed at [https://www.ouhealth.com/documents/Breast-Cancer-in-Oklahoma-Data-Brief.2\).pdf](https://www.ouhealth.com/documents/Breast-Cancer-in-Oklahoma-Data-Brief.2).pdf) on May 16, 2023.
13. U.S. Preventative Services Task Force. Final Recommendation Statement. Breast Cancer: Screening. January 11, 2016. Accessed at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening> on July 11, 2023.
14. National Center for Chronic Disease Prevention and Health Promotion, Division of Cancer Prevention and Control. Last Updated Mar. 16, 2020. Accessed at <https://www.cdc.gov/vitalsigns/cervical-cancer/index.html#:~:text=Up%20to%2093%25%20of%20cervical,that%20cause%20most%20cervical%20cancers> on April 12, 2023.
15. Mix JM, Van Dyne EA, Saraiya M, Hallowell BD, Thomas CC. Assessing impact of HPV vaccination on cervical cancer incidence in women 15–29 years in the United States, 1999–2017: An ecologic study. *Cancer Epidemiology, Biomarkers & Prevention* 2020. Accessed at <https://www.cdc.gov/cancer/dccp/research/articles/cervical-cancer-rates-young-women.htm> on April 12, 2023.
16. Feld AJ, Yeung DC, Smith N & Espinoza RE. (2021) Cancer Burden in the State of Oklahoma -2017. Oklahoma State Department of Health, Center for Health Statistics: Oklahoma City, OK. Accessed at <https://oklahoma.gov/content/dam/ok/en/health/health2/aem-documents/health-promotion/occr/CancerBurdenReport2017.pdf> on April 13, 2023.
17. U.S. Preventative Services Task Force. Final Recommendations Statement. Cervical Cancer: Screening. August 21, 2018. Accessed at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/cervical-cancer-screening> on April 14, 2023.
18. Centers for Disease Control and Prevention. Colorectal (Colon) Cancer. What is Colorectal Cancer? Accessed at https://www.cdc.gov/cancer/colorectal/basic_info/what-is-colorectal-cancer.htm on June 26, 2023.
19. Campbell JE, Sambo AB, Kong AY, Hunsucker LA, Pharr SF, and Doescher MP. Cancer in Oklahoma Data Brief Series: Colorectal Cancer in Oklahoma. Community Outreach and Engagement, Stephenson Cancer Center, OU Health. 2022 Feb; 2(2). Accessed at https://www.ouhealth.com/documents/content/cancer/Colorectal-Cancer-in-Oklahoma-Data-Brief_NC.pdf on June 26, 2023.
20. U.S. Preventative Services Task Force. Final Recommendation Statement. Colorectal Cancer: Screening. May 18, 2021. Accessed at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening> on June 20, 2023.
21. American Cancer Society. What Is Lung Cancer? Last revised: January 12, 2023. Accessed at <https://www.cancer.org/cancer/types/lung-cancer/about/what-is.html> on July 12, 2023.
22. Morin SR, Sedani AE, Sambo AB, Campbell JE, and Doescher MP. Cancer in Oklahoma Data Brief Series: Lung Cancer in Oklahoma. Community Outreach and Engagement, Stephenson Cancer Center, OU Health. 2022 Aug.; 2(5). Accessed at https://www.ouhealth.com/documents/LungCancerOklahoma_DataBrief.pdf on May 26, 2023.
23. American Lung Association. Addressing Lung Cancer Stigma. Last updated October 7, 2022. Accessed at <https://www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/living-with-lung-cancer/how-to-talk-about-your-cancer/addressing-lung-cancer-stigma> on October 8, 2023.
24. U.S. Preventative Services Task Force. Final Recommendation Statement. Breast Cancer: Screening. January 11, 2016. Accessed at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening> on July 11, 2023.
25. What is Prostate Cancer? Division of Cancer Prevention and Control, Centers for Disease Control and Prevention. Last reviewed: July 17, 2023. Source note: Accessed at https://www.cdc.gov/cancer/prostate/basic_info/what-is-prostate-cancer.htm on August 25, 2023.
26. Hinata, N., & Fujisawa, M. (2022). Racial Differences in Prostate Cancer Characteristics and Cancer-Specific Mortality: An Overview. *The World Journal of Men's Health*, 40(2), 217–227. <https://doi.org/10.5534/wjmh.210070>. Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8987139/> on August 25, 2023.
27. United States Preventative Services Task Force. Accessed at <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/prostate-cancer-screening> on August 24, 2023.

28. Gallicchio, L., Devasia, T. P., Tonorezos, E., Mollica, M. A., & Mariotto, A. (2022). Estimation of the Number of Individuals Living With Metastatic Cancer in the United States. *Journal of the National Cancer Institute*, 114(11), 1476–1483. <https://doi.org/10.1093/jnci/djac158>. Accessed at [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9949565/#:~:text=As%20of%20January%202022%2C%20it,million%20by%202030%20\(2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9949565/#:~:text=As%20of%20January%202022%2C%20it,million%20by%202030%20(2) on October 7, 2023.
29. American Cancer Society Cancer Statistics Center. Accessed at <https://cancerstatisticscenter.cancer.org/#!/state/Oklahoma> on October 7, 2023.
30. Oklahoma Children's Hospital 2020 CHNA Addendum. Accessed at https://www.ouhealth.com/documents/content/2020_CHNA_OCH.pdf on October 8, 2023.
31. Saint Francis Health System. Childhood Cancer. Accessed at <https://www.saintfrancis.com/services/cancer-care/cancers-we-treat/childhood-cancers> on October 9, 2023.
32. Zhang, J., Walsh, M. F., Wu, G., Edmonson, M. N., Gruber, T. A., Easton, J., Hedges, D., Ma, X., Zhou, X., Yergeau, D. A., Wilkinson, M. R., Vadodaria, B., Chen, X., McGee, R. B., Hines-Dowell, S., Nuccio, R., Quinn, E., Shurtleff, S. A., Rusch, M., Patel, A., ... Downing, J. R. (2015). Germline Mutations in Predisposition Genes in Pediatric Cancer. *The New England Journal of Medicine*, 373(24), 2336–2346. <https://doi.org/10.1056/NEJMoa1508054>. Accessed at <https://www.cancer.gov/types/childhood-cancers/child-adolescent-cancers-fact-sheet#r9> on October 10, 2023.
33. World Health Organization. Childhood Cancer. December 13, 2021. Accessed at <https://www.who.int/news-room/fact-sheets/detail/cancer-in-children> on October 9, 2023.
34. U.S. Department of Health and Human Services. Health Equity is Healthy People 2030. Accessed at <https://health.gov/healthypeople/priority-areas/health-equity-healthy-people-2030> on September 27, 2023.
35. Centers for Disease Control and Prevention. Equity in Cancer Prevention and Control. Last reviewed: July 19, 2023. Accessed at <https://www.cdc.gov/cancer/health-equity/equity.htm#:~:text=When%20talking%20about%20cancer%2C%20equity%20is%20when%20everyone,others%20and%20improve%20the%20health%20of%20all%20Americans> on September 27, 2023.
36. World Health Organization. Social Determinants of Health. Accessed at https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1 on September 28, 2023.
37. United States Census Bureau QuickFacts. Accessed at <https://www.census.gov/quickfacts/fact/table/OK/AGE775222#AGE775222> on September 28, 2023.
38. National Cancer Institute. Age and Cancer Risk. Last reviewed: March 5, 2021. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/age> on September 28, 2023.
39. Substance Abuse and Mental Health Services Administration. Trauma and Violence. Last reviewed: September 27, 2022. Accessed at <https://www.samhsa.gov/trauma-violence> on September 28, 2023.
40. Centers for Disease Control and Prevention. Fast Facts: Preventing Adverse Childhood Experiences. Last reviewed: June 29, 2023. Accessed at <https://www.cdc.gov/violenceprevention/aces/fastfact.html> on September 29, 2023.
41. Oklahoma Policy Institute. Adverse Childhood Experiences. Last updated: July 25, 2023. Accessed at <https://okpolicy.org/adverse-childhood-experiences-aces/> on September 29, 2023.
42. Oklahoma State Department of Health. Adverse Childhood Experiences (ACEs) and Positive Childhood Experiences (PCEs). 2021. Accessed at https://oklahoma.gov/content/dam/ok/en/health/health2/aem-documents/family-health/maternal-and-child-health/child-adolescent-health/yrbs/2021/ACEs_Data_Presentation_2022_FINAL.pdf on September 29, 2023.
43. Lin, J., McGlynn, K. A., Carter, C. A., Nations, J. A., Anderson, W. F., Shriver, C. D., & Zhu, K. (2016). The Impact of Preexisting Mental Health Disorders on the Diagnosis, Treatment, and Survival Among Lung Cancer Patients in the U.S. Military Health System. *Cancer epidemiology, biomarkers & prevention: a publication of the American Association for Cancer Research*, cosponsored by the American Society of Preventive Oncology, 25(12), 1564–1571. <https://doi.org/10.1158/1055-9965.EPI-16-0316> Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5777503/#:~:text=Higher%20cancer-related%20mortality%20has,to%20explain%20the%20higher%20mortality> on September 29, 2023.
44. National Council for Mental Wellbeing. National Behavioral Health Network for Tobacco and Cancer Control. Accessed at <https://www.thenationalcouncil.org/program/national-behavioral-health-network-for-tobacco-cancer-control/> on February 12, 2024.
45. Mental Health and Substance Abuse Prevalence in Oklahoma. Treatment GAp, Tableau. Mark A. Reynolds, Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS). Accessed at <http://www.odmhsas.org/eda/prevalence.htm> on February 12, 2024.
46. Sambo AB, Campbell JE, Hunsucker LA, Pharr SF, and Doescher MP. Cancer in Oklahoma Data Brief Series: Cancer in Rural Oklahoma. Community Outreach and Engagement, Stephenson Cancer Center, OU Health. 2022 Sep.; 2(6). Accessed at https://www.ouhealth.com/documents/Cancer-in-Rural-Oklahoma_230419.pdf on October 2, 2023.



DISCLAIMER

The 2023-2028 Oklahoma Cancer Prevention & Control Plan includes 2022 data submissions for new cancer cases diagnosed in 2020, the first year of the COVID-19 pandemic. "In 2020, the highly publicized impact of COVID on health services and the consequential delays and reductions in cancer screening and diagnosis led to a decline in incidence rates for most cancer sites." The OCCN recognizes that "because 2020 was a temporary, anomalous year caused by the pandemic, it can bias estimates such as cancer incidence trends and reporting." For more information on the impact of COVID on 2020 cancer incidence data, please access <https://seer.cancer.gov/data/covid-impact.html>.

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CANCER IS
NOT OK!



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