

# Comprehensive Cancer Prevention and Control Plan



**CHEROKEE NATION**  
2018 - 2022

# Dedication

This Cancer Plan is dedicated to all the Cherokee Nation citizens, their families and friends who have been touched by cancer. The plan is a tribute to your courage in the battle against cancer and your efforts to help reduce and eliminate cancer throughout the Cherokee Nation.

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***“Being a cancer survivor  
means hope for the  
community, for the tribe.”***

*Lisa Pivec, Cancer Survivor*

## **Table of Contents**

- 4 Messages To Our Partners
- 6 About The Cherokee Nation
- 7 Introduction
- 10 Cherokee Nation’s Comprehensive Approach To Cancer
- 16 How Cancer Affects The Cherokee Nation
  - *Cancer Data*
  - *Cancer Stories Of Hope*
- 28 Cherokee Nation Comprehensive Cancer Prevention and Control Plan
- 34 Our Next Steps Forward
- 36 Appendix



# Chief's Message

Osiyo.

American Indians, including Cherokee Nation citizens, have the lowest survival rates for nearly all types of cancer of any subpopulation in the United States. The disparities in cancer survival is something we must assume responsibility for in order to drive down mortality rates and increase life expectancy of our people. In the pages to come, you'll find our comprehensive cancer plan, designed to address these gaps.

Our investments in public health are an investment in the future of the Cherokee Nation and no issue has been more important during my tenure than quality health care for Cherokee people. We have a multi-year action plan to better address causes and treatments within our population in northeast Oklahoma.

Through aggressive education, collaboration and action we can make substantial changes, not just for today, but for our future generations. By addressing our lifestyle choices, eating habits and willingness to seek screening, we can curb the cancer outcomes within the Cherokee Nation. Cultural and socio-economic impacts are important mitigating factors as well, and we know that education and career opportunities provide individuals with the increased ability to make healthier choices.

Indian Country routinely looks to Cherokee Nation to be a leader. With this strategic plan in place, we are addressing our cancer rates and health disparities head-on and hope that others will follow this example. A disease like cancer not only plagues an individual's body and mind, but also weighs heavily on families and communities, whose support is essential. Collectively embracing environmental and behavioural changes can make a world of difference in prevention across Cherokee Nation and well beyond.

The impact of this cancer plan we hope will prove immeasurable in ensuring the ongoing health of the next seven generations of Cherokee people.

Wado.



*Bill John Baker*

*Cherokee Nation Principal Chief*



# Directors' Message

Since 1996, the Cherokee Nation Health Services Cancer Programs and Oklahoma Strategic Tribal Alliance for Health (OSTAH) have led the way in fighting cancer in the community. Over the past decade, the *Cherokee Nation Comprehensive Cancer Prevention and Control Plan* has guided our collective efforts in striving toward cancer-free Cherokee Nation communities. Since the development of the last plan in 2010, we've made strides and have implemented many of the strategies.

We saw successes like more women screened for breast and cervical cancer and more men talking to their health care provider about prostate cancer screening. Despite these gains, we estimate that more than 800 cancers will be diagnosed among American Indians and Alaska Natives (AI/ANs) residing in the Cherokee Nation tribal reservation, and approximately 300 may die from this chronic disease each year. From 2006 to 2015, the cancer death rate among Cherokee Nation AI/ANs has increased 7 percent. The Plan shows ways that we can do more for our fellow community members who are impacted by cancer.

Our new Cancer Plan builds on the previous plan and lays the foundation for our work over the next five years. The Cherokee Nation Cancer Plan sets forth five goals, each of which includes a set of objectives, strategies and partners involved. Cherokee Nation's Cancer Programs and cancer coalition, OSTAH, have developed strategies that will have the greatest impact on the most common cancers and risk factors.

The Cancer Plan is intended to be a living document that we use constantly to guide our collaborative efforts. We all must work together to ensure all of Cherokee Nation benefits from advances in cancer prevention, screening and treatment. Join us and help put the Cancer Plan into action!

Sincerely,



*Lisa Pivec, MS*

*Senior Director*

*Cherokee Nation Public Health*



# About the Cherokee Nation

The Cherokee Nation is the federally recognized government of the Cherokee people and has inherent sovereign status recognized by treaty and law. The Cherokee Nation functions as a tripartite government with executive, legislative, and judicial branches, with the tribal government seat located at Tahlequah, Oklahoma, the capital of the Cherokee Nation. Today, the Cherokee Nation spans more than 7,000 square miles in Northeast Oklahoma, containing all or part of 14 Oklahoma counties. With more than 362,000 citizens, the Cherokee Nation is the largest tribal nation in the United States. Nearly 136,000 Cherokee Nation citizens live within the tribal reservation.

The Cherokee Nation offers many services to its citizens and to other Native Americans throughout the reservation. These services include but are not limited to community services, commerce services, career services, education, health services, human services, and housing. The Cherokee Nation dedicates resources through both federal funding and tribal revenue to provide these and other services to the citizens who need them most. The Cherokee Nation is one of the largest employers in Northeast Oklahoma and employs more than 11,000 individuals, including 9,500 tribal employees, in a variety of tribal enterprises ranging from aerospace and defense contracts to entertainment venues.

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## Mission

*The Cherokee Nation is committed to protecting our inherent sovereignty, preserving and promoting Cherokee culture, language and values, and improving the quality of life for the next seven generations of Cherokee citizens.*

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# Introduction

Cancer is the name for a collection of more than 100 diseases. It is a condition that develops when some of the body's cells begin to divide without stopping. Cancer can start anywhere in the body, and sometimes cancer cells spread into surrounding tissues or travel to other places in the body. Cancer is caused by damage to DNA, which results from exposure to certain chemical or environmental agents, such as tobacco, radiation and the sun's ultraviolet rays. It can also arise from genetic changes that were inherited or caused by certain infections. Many types of cancer can be treated with surgery, chemotherapy and radiation.

Several actions can be taken to help lower cancer risk and prevent death, but three specific actions can yield the strongest results. The first is quitting commercial tobacco, which contains thousands of chemicals, many of which have been linked to cancer and other serious health problems. Second on the list are screenings and exams, which are available for several cancers including breast, cervical, prostate, colorectal, skin and oral. These screenings enable health professionals to locate cells before they become cancerous or catch cancer cells at early stages. The third action is immunization against cancer-causing infections, which include Hepatitis B (HBV), human papillomavirus (HPV) and Helicobacter pylori (H pylori). HPV-related cancers can also be prevented through screening and treatment of precancerous lesions, if present. H pylori, a major cause of stomach cancer, can be treated with medicine.

While some exposures can be prevented, some are difficult to avoid completely. Age, family history and genetics are examples of uncontrollable risk factors. Also, certain chemicals or other substances in the environment can be harmful and are not always

easy to avoid. When possible, limit your exposure to indoor smoke from cooking, heating and outdoor air pollution. In the workplace, some individuals have been exposed to asbestos, coal, radon and other harmful substances that can cause cancer.

***To help reduce your risk, follow these general guidelines.***

## **Be aware:**

- Know your body and look for signs. Report changes to your doctor.
- Check your family's history.
- Understand how infections affect your risk.

## **Get screened:**

- Ask your healthcare provider which screenings are appropriate for you.
- Perform self-exams.

## **Make healthy living choices:**

- Avoid commercial tobacco or decide to stop using.
- Protect yourself from ultraviolet (UV) rays.
- Make healthy food and beverage choices (*Increase intake of fruits and veggies, and limit alcohol*).
- Maintain a healthy weight and physical activity.
- Get immunized for cancer-causing infections.

## **Limit your environmental exposure:**

- When possible, get rid of harmful chemicals and substances where you live, work, learn, and play.



## About the Cancer Plan

The *Cherokee Nation Comprehensive Cancer Prevention and Control Plan 2018-2022 (Cancer Plan)* is a cancer prevention and control framework that addresses the issues specific to cancer in the Cherokee Nation. The purpose of the Cancer Plan is to guide individuals, groups and organizations working in cancer prevention and control with a vision and concrete goals, objectives, and strategies for reducing cancer. Essentially, it is a road map we all can follow to collectively reduce cancer in the Cherokee Nation.

In previous versions of the plan, community organizations, public health programs, health care providers and other partners worked together toward achieving goals. Many of the strategies were implemented successfully, but there are still areas where work needs to be done. Since the release of the previous plan, there have been advances in cancer prevention and control and in cancer patterns. Because of this, Cherokee Nation has updated the cancer plan to include up-to-date information and new strategies.



### *Planning Approach and Input Gathering*

The Cancer Plan builds on the work from more than a decade's worth of cancer control in Cherokee Nation, and addresses work that is already underway. OSTA, Cherokee Nation's cancer coalition, held feedback sessions to hear from partners and stakeholders on the framework and implementation of the previous plan. Additionally, each OSTA Work Group, comprised of Cherokee Nation's cancer prevention and control stakeholders and cancer survivors, convened one or more meetings to draft recommendations for the updated plan. Members discussed the existing goals and updated or created new goals, objectives and strategies. As a result of their collective input, the updated plan places a greater emphasis on including strategies that address policy change, use strategic communications and incorporate Cherokee Nation culture. The goals align with Cherokee Nation's comprehensive approach to the cancer foundational areas. The objectives are based on available, measurable data sources, and are linked to other health improvement efforts, such as the Cherokee Nation Tribal Health Improvement Plan.





## *Using the Plan*

The Cancer Plan is divided into 3 main sections. Here is a brief description of each one.

- 1. Cherokee Nation's Comprehensive Approach to Cancer** provides background on the Nation's strategy for working toward cancer-free communities.
- 2. How Cancer Affects Cherokee Nation** shows how cancer impacts individuals, families, and caregivers living in communities throughout the tribal service area. It presents a brief profile on cancer data and highlights stories from individuals personally impacted.
- 3. Cherokee Nation's Cancer Plan** sets the stage for the major issues that will be addressed. It identifies specific goals, objectives, strategies, and cross-cutting areas.

Cancer prevention and control is no small feat. The Cancer Plan focuses on the priority areas that must be addressed to reduce cancer within the Cherokee Nation. No one organization, including the cancer programs, cancer prevention organizations or coalitions, can carry out all of these activities on its own. Therefore, the Cancer Plan is intended to be a guide for everyone interested in cancer prevention and control within Cherokee Nation. We have selected strategies that any individual, health professional, community group or organization involved in any aspect of cancer prevention and control can implement.

## *Evaluation*

OSTAH's Data and Evaluation Work Group is responsible for monitoring and evaluating the plan's activities, processes and outcomes. The Work Group will develop and implement an evaluation plan to help determine if the Cancer Plan's goals and objectives are met, and the information gained will be used to provide insights for future plans. The Work Group will collect and measure data such as cancer incidence, mortality, screening rates and other indicators described in the plan. Annual reports of progress will be made available to OSTAH members, Cherokee Nation Health Services leadership and interested community members. While evaluation of the Cancer Plan is the Data and Evaluation Work Group's responsibility, all OSTAH members and partners will play an active role in monitoring progress and sharing information.



# Cherokee Nation's Comprehensive Approach to Cancer

Comprehensive cancer prevention and control is a collaborative and strategic approach to prevent and reduce cancer illnesses and deaths, and to improve the quality of life of cancer patients and others who are impacted. Individuals, community organizations, advocates and public health workers and health care workers coordinate resources and implement proven strategies to reduce the impact of cancer. Cherokee Nation's comprehensive cancer prevention and control approach includes the focus areas, cross-cutting areas, partners and resources, as illustrated in *Figure 1*. All are necessary for implementing a comprehensive and integrated plan that moves Cherokee Nation toward a vision of "cancer-free communities." Each component is described and illustrated on the next page.



**Figure 1. Cherokee Nation Comprehensive Cancer Prevention and Control Framework**

PREVENTION	SCREENING & EARLY DETECTION	DIAGNOSIS & TREATMENT	QUALITY OF LIFE
<b>AIM</b>			
<p>Prevent future occurrences of cancer by promoting healthy behaviors, raising awareness, and creating healthy environments through policy</p>	<p>Detect pre-cancer or cancer early through screening</p>	<p>Available, accessible, quality and culturally appropriate healthcare services</p>	<p>Facilitate the mental, spiritual, and physical recovery of those diagnosed;                      Address the treatable long-term or late effects of cancer caused by chemotherapy, radiation, surgery;                      Reduce recurrence of cancer by encouraging healthy behaviors</p>
<b>KEY INTERVENTIONS</b>			
<ul style="list-style-type: none"> <li>• Tobacco Use</li> <li>• Healthy Weight (Nutrition, Physical Activity)</li> <li>• Alcohol Use</li> <li>• Virus Exposure (HPV)</li> <li>• Other risk factors (Occupational, environmental, UV exposure)</li> </ul>	<ul style="list-style-type: none"> <li>• Breast cancer screening (Mammogram)</li> <li>• Cervical cancer screening (Pap Test)</li> <li>• Colorectal cancer screening (FOBT, Endoscopy)</li> <li>• Lung cancer (LDCT)</li> </ul>	<ul style="list-style-type: none"> <li>• Referrals</li> <li>• Treatment methods (e.g., surgery, chemo, radiation, pain management)</li> <li>• Follow-up care after treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Patient-provider communication</li> <li>• Coordination of care</li> <li>• Support services (home health, hospice, palliative care)</li> <li>• Health promotion (Reducing risk of factors associated with the primary cancer)</li> </ul>
<b>CROSS-CUTTING AREAS</b>			
<p><b>Health Equity:</b> Assuring all of Cherokee Nation benefits from advances in cancer prevention, screening, and treatment by eliminating health disparities; facilitated by focusing on the social determinants of health and addressing the needs of underserved communities.</p> <p><b>Policy:</b> Building and enforcing laws, rules and protocols, and by taking actions to create healthier environments, change community perceptions and encourage healthy choices.</p> <p><b>Communications:</b> Using useful, relevant, and timely methods to provide education and information that increases the community’s awareness, knowledge and understanding of cancer prevention, treatment and resources. Using compelling information that motivates the community to act.</p> <p><b>Culture:</b> Incorporating Cherokee values in our approach to comprehensive cancer prevention, control and treatment of individuals, families and caregivers impacted by cancer.</p> <p><b>Data and Surveillance:</b> Collect data and information that contributes to effective comprehensive cancer control planning. Improving capacity to measure cancer morbidity, mortality and risk factors, and evaluating comprehensive cancer control programs, partnerships and efforts.</p> <p><b>Quality of Care:</b> Provide services and treatment that improve the quality of life for people impacted or affected by cancer by involving individuals in making decisions about their own journey.</p>			



## *Focus Areas*

The foundational areas upon which Cherokee Nation focuses cancer prevention and control strategies are:

- **Prevention:** Prevent cancer from occurring by promoting healthy behaviors through raising awareness and creating healthy environments through policy.
- **Screening and Early Detection:** Detect pre-cancer or cancer early through screening.
- **Diagnosis and Treatment:** Make quality and culturally appropriate health care services available and accessible.
- **Quality of Life:** Facilitate the mental, spiritual, and physical recovery of those diagnosed. Address the treatable long-term or late effects of cancer caused by chemotherapy, radiation and surgery. Reduce recurrence of cancer by encouraging healthy behaviors.

## *Cross-Cutting Areas*

These topics are relevant to all aspects of Cherokee Nation comprehensive cancer prevention and were considered throughout the development of the plan's goals, objectives and strategies.

- **Communications:** Using useful, relevant and timely methods to provide education and information that increases the community's awareness, knowledge and understanding of cancer prevention, treatment and resources. Using compelling information that motivates the community to act.
- **Culture:** Incorporating Cherokee values in our approach to comprehensive cancer prevention, control, and treatment of individuals, families and caregivers impacted by cancer.
- **Data and Surveillance:** Collecting data and information that contributes to effective

comprehensive cancer control planning. Improving capacity to measure cancer morbidity, mortality and risk factors, and evaluating comprehensive cancer control programs, partnerships and efforts.

- **Health Equity:** Assuring all of Cherokee Nation benefits from advances in cancer prevention, screening and treatment by eliminating health disparities. This will be accomplished by focusing on the social determinants of health and addressing the needs of underserved communities.
- **Policy:** Building and enforcing laws, rules and protocols, and by taking actions to create healthier environments, change community perceptions, and encourage healthy choices.
- **Quality of Care:** Provide services and treatment that improve the quality of life for people impacted or affected by cancer by involving individuals in making decisions about their own journey.

## *Resources and Partners*

As a national leader in tribal public health and the first tribal health department to achieve public health accreditation, Cherokee Nation works with partners nationally, throughout the state of Oklahoma and in local communities to decrease the burden of cancer through community education on prevention and screening as well as policy development and implementation of systems and environmental changes. Representatives from Cherokee Nation Health Services, Cancer Programs and Cherokee Nation's cancer coalition, OSTAH, work with tribal, local, regional, state and national public health and health care partners to implement the plan. A complete list of partners is listed in Appendix C.



### *Cherokee Nation Health Services*

Managing the largest tribally operated health care system in the United States, Cherokee Nation is dedicated to promoting and improving health to ensure healthy communities for this and future generations. Cherokee Nation Health Services takes an innovative approach to healthcare, by combining the best practices of public health systems with primary care. This method ensures that the health and well-being of all Cherokee Nation residents will be positively impacted. With more than 360,000 citizens, Cherokee Nation's public health system and health care service delivery span the Nation's reservation, covering fourteen counties in northeast Oklahoma.

Cherokee Nation Health Services consists of a number of clinical health care and public health services and programs. The Cherokee Nation health care delivery system includes a network of tribal health clinics, an employee clinic, a tribal hospital, an Indian Health Service hospital and a co-educational facility for chemical dependency treatment. The Cherokee Nation public health system encompasses a wide array of tribal, public, private and community organizations that work in partnership to promote and ensure conditions in which people can be healthy. Cherokee Nation's public health services are multifaceted and use a socioecological approach to facilitate policy, system and environmental change. Public Health administers a broad array of programs and services, such as community-based health education and prevention, youth and elder care, violence prevention, public safety, chronic disease surveillance and reporting, behavioral health and access to clinical care; the department also houses Cancer Programs.

### *Cherokee Nation Cancer Programs*

Cherokee Nation Cancer Programs consists of three components, including a breast and cervical cancer early detection program (BCCEDP), a cancer registry and a comprehensive cancer control program (CCCP), which are described below.

- The **BCCEDP** provides breast and cervical cancer screening and early detection services, health education, outreach and intensive tracking and follow-up through detailed nurse case management. The program works in collaboration with Cherokee Nation Health Centers, Cherokee Nation W.W. Hastings Hospital and Claremore Indian Hospital to provide screening and early detection services throughout and around the Cherokee Nation tribal service area.
- The **Cancer Registry** collects quality surveillance cancer data for American Indians residing within the boundaries of the Cherokee Nation reservation. Registry administrators work closely with the Oklahoma State Department of Health Cancer Registry to ensure all cancer data are collected, especially for those patients who seek treatment outside of the Cherokee Nation contract area. Activities include case finding, patient follow-up, data processing, data reporting and quality assurance.
- The **CCCP** assists in the development of networks and collaboration that produce an infrastructure for a comprehensive approach to cancer within the Cherokee Nation. CCCP staff provide administrative coordination for the Oklahoma Strategic Tribal Alliance for Health (OSTAH), Cherokee Nation's cancer coalition. Priority areas are lung cancer, breast cancer, cervical cancer/HPV vaccinations, colorectal cancer, nutrition, improving cancer survivors' quality of life and reducing cancer disparities.



### ***Cherokee Nation Cancer Coalition: OSTA***

OSTA's mission is to reduce the burden of cancer in Cherokee Nation communities through culturally relevant prevention, awareness, education, outreach and partnerships. OSTA is a network of public health workers, health care providers, community health workers, organizations, cancer patients, cancer survivors and others dedicated to reducing cancer and its impact within Cherokee Nation. Members are committed to identifying areas of cancer concern, planning interventions and prioritizing the greatest areas of identified need. OSTA works closely with CNHS Cancer Programs staff to update the cancer control plan by considering resources and emerging issues, and by developing new goals, objectives and strategies. OSTA, its partners and Cherokee Nation

staff all work together to implement many of the strategies outlined in the plan.

OSTA includes six Work Groups, each associated with one or more focus areas or cross-cutting areas. The Work Groups implement strategies and activities and develop annual work plans to support the overall cancer prevention control efforts.

- The ***Prevention Work Group*** implements activities and administers programs that promote healthy behaviors and reduce cancer risk.
- The ***Screening and Early Detection Work Group*** works to improve awareness and access to screenings and increase cancer screening rates.

- The ***Tobacco Use and Exposure Work Group***, like the Prevention Work Group, works to prevent and reduce cancer risk, but focuses on preventing youth from using tobacco and eliminating or reducing commercial tobacco use and exposure in communities.
- The ***Quality of Life, Treatment, and Care Work Group*** works on the “Diagnosis and Treatment” and the “Quality of Life” focus areas described in the comprehensive approach to cancer. Members support both people who are diagnosed and their caregivers and promote health to reduce risk of cancer recurrence.
- The ***Data and Evaluation Workgroup*** supports coalition members and Work Groups in their data needs (data collection, statistical analysis), monitoring performance of the plan’s targets and evaluating cancer programs.
- The ***Media Workgroup*** assists work groups in the communications, media, outreach and promotion activities such as social media, advertising, graphic design, new releases and presentation materials.



# How Cancer Affects Cherokee Nation

To understand how cancer affects people in the Cherokee Nation, we reviewed the most recent available data. We examined the figures on cancer survival, incidence, mortality and risk factors and quality of life. The data originate from several sources throughout the Cherokee Nation and cancer prevention partners listed in Appendix F. We also listened. Cancer survivors and their caregivers shared about their experiences with cancer diagnosis, treatment, recovery and well-being. Their stories, along with the data and input from people working toward a cancer-free Cherokee Nation, helped us identify priorities and outline strategies for the plan.

## *Box A. Common Cancer Data Terms*

### *Common Cancer Data Terms*

The definitions below will help you understand common terms used to describe cancer data.

*Cancer Survivorship* tells you the percentage of people diagnosed with cancer still alive after a particular amount of time beyond diagnosis, usually 5 years. Survival varies among cancers by site and type.

*Incidence* refers to the number of new cases of a disease diagnosed during a specific period. Cancer incidence rate is the number of new cancers of a specific site or type occurring in a population during a specified time period, often a year, divided by the population at risk.

*Mortality* refers to the number of deaths. Mortality rate, a term also used for death rate, is the number of deaths in a certain group of people in a certain period of time. Cancer mortality may be reported for certain sites by where a person lives, sex, age, and racial or ethnic group.

*Quality of Life (QoL)* in cancer prevention and control is the overall enjoyment of life. Cancer treatment can affect a person's quality of life, which can be measured by an individual's sense of well-being, self-reported health level, number of days with good or poor physical or mental health or the ability to carry out various activities.

*Risk factor* is something that increases the chance of developing a disease. Common risk factors for cancer include aging, family history of cancer, commercial tobacco use, harmful exposures (sun, radiation, radon, indoor smoke, and other substances), some viruses and bacteria, alcohol intake, unhealthy diet, physical inactivity or being overweight or obese.

*Years of Potential Life Lost (YPLL)* is a measure of premature death, typically based on death before age 75. That means, every death occurring before the age of 75 contributes to the total number of years of potential life lost. For example, a person who dies at age 25 contributes 50 years of life lost to a population's YPLL. YPLL emphasizes deaths of younger persons and draws attention to areas where deaths could have been prevented.



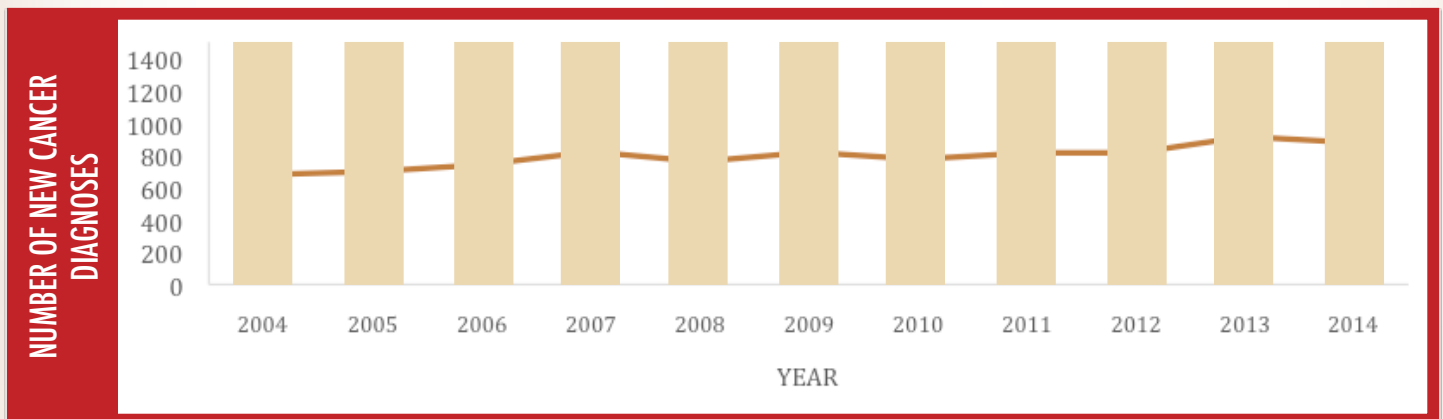


## Cancer Incidence and Deaths

According to the analysis from the OSTA Data and Evaluation Work Group, there were 4,346 new cancer diagnoses among Cherokee Nation AI/ANs from 2010-2014. That is an average of 870 new cancer cases each year. The 2010-2014 incident cancer rate for all cancers combined, for both sexes, is 496.2 per 100,000 (unadjusted).

More than 1,600 Cherokee Nation men, women and youth died of cancer between 2011 – 2015. In 2014, there were 353 cancer deaths among Cherokee Nation AI/ANs. The 2010-2015 mortality rate for all cancers is 190.0 per 100,000 (unadjusted). In 2015, their premature deaths represented 3,705 Years of Potential Life Lost (YPLL). That means, collectively, there were 3,705 years these individuals could have lived if, instead of dying prematurely from cancer, they lived to life expectancy. From 2014-2016, cancer had a higher YPLL than respiratory diseases, suicide and liver disease. Only heart disease/stroke and accidents had a higher YPLL.

*Figure 2. Number of Incident Cancer among Cherokee Nation AI/ANs, All Sites, 2004 – 2014.*



## Differences by Sex

Cancer incidence and mortality rates vary among Cherokee Nation AI/AN men and women. While the burden of cancer is shared by all those living in the Cherokee Nation, cancer incidence is disproportionately greater among women. About 63 percent of incident cancers reported were among women. That's nearly two out of three new cancer cases. In the Cherokee Nation, the three most common cancer diagnoses among males – prostate, lung, and colorectal – represent 45 percent of the total cancer diagnoses. For females, breast, lung and colorectal represent approximately 47 percent of women's cancer diagnoses. According to the American Indian Cancer Foundation's report, American Indian Cancer Burden: Cancer Facts for American Indians and Alaska Natives, cancer is the leading cause of death among AI/AN women across the U.S., and the second leading cause of death among AI/AN men. Also, cancer is the second leading cause of death for AI/ANs in Cherokee Nation. From 2010-2014, a total of 872 males and 748 females lost their lives to cancer.

INCIDENCE	TOTAL	MALES	FEMALES
Incidence (New Cases)	4,597	1,935	2,662
Incidence Rate	496.2	463.5	527.8
MORTALITY	TOTAL	MALES	FEMALES
Mortality Cancer Deaths	1,620	872	748
Mortality Rate	190.0	208.3	173.9

Source: Oklahoma State Department of Health, Oklahoma Central Cancer Registry via OK2Share

**Figure 3.**

Differences by Sex -  
Cancer Incidence and Mortality among  
Cherokee Nation AI/ANs, 2010-2014.

**Figure 4.**

Differences by Sex -  
Most Common Cancers among  
Cherokee Nation AI/ANs, 2010-2014.

	MALES		FEMALES
1 <sup>a</sup>	Prostate (17.8%)	1	Breast (26.2%)
2 <sup>b</sup>	Lung (16.5%)	2	Lung (13.0%)
3	Colorectal (10.9%)	3	Colorectal (8.2%)

Source: Oklahoma State Department of Health, Oklahoma Central Cancer Registry via OK2Share

a - Excluding in situ  
b - Lung and bronchus

## Regional Differences

According to an American Indian Cancer Foundation report, Southern Plains AI/ANs (those living in Kansas, Oklahoma and Texas), have higher cancer diagnoses for the top three cancers compared to Whites. Although in a different order, the three most common cancers for AI/AN males and females in the Southern Plains are the same for Cherokee Nation AI/ANs. Lung cancer was the most commonly diagnosed cancer for Southern Plains AI/AN men and women. For Cherokee Nation AI/AN men, the most common cancer diagnosed was prostate; breast cancer was the most diagnosed for Cherokee Nation AI/AN women.

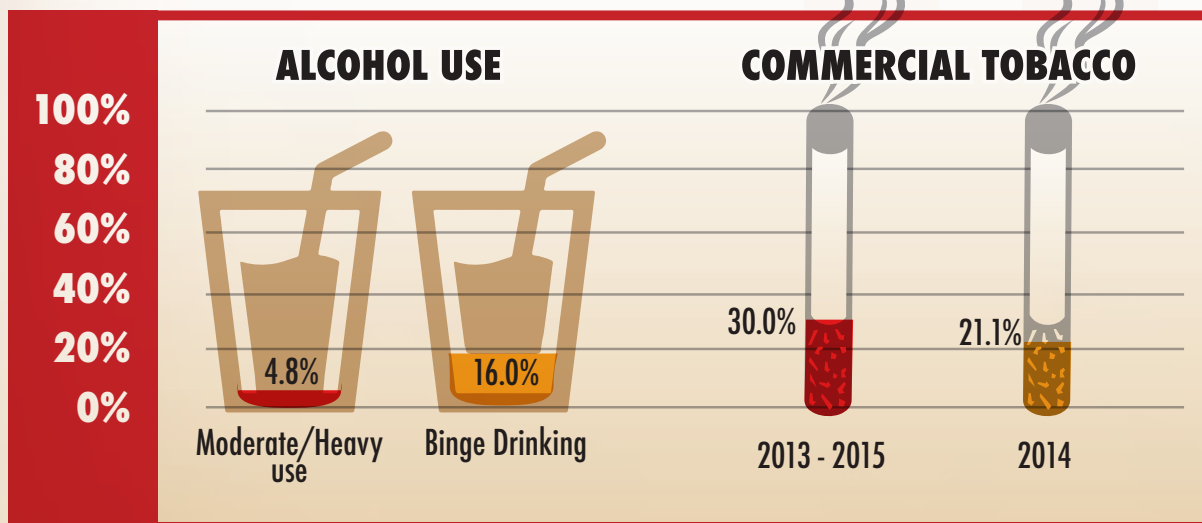


## Risk Factors

By creating healthier communities and reducing risk factors for chronic disease, Cherokee Nation can work toward preventing cancer over time. The risk of cancer can be reduced not only by individual changes, such as preventing or stopping commercial tobacco use and improving diet, but also through broader efforts. Cherokee Nation addresses the factors in the environment that influence community members' opportunities to be healthy (i.e. creating policies that promote healthy nutrition in schools and smoke-free policies in public areas).



**Figure 5.**  
*Percent of AI/AN adults reporting moderate/heavy use of alcohol, binge drinking, or commercial tobacco use*



## Substance Use -

### Alcohol and Commercial Tobacco

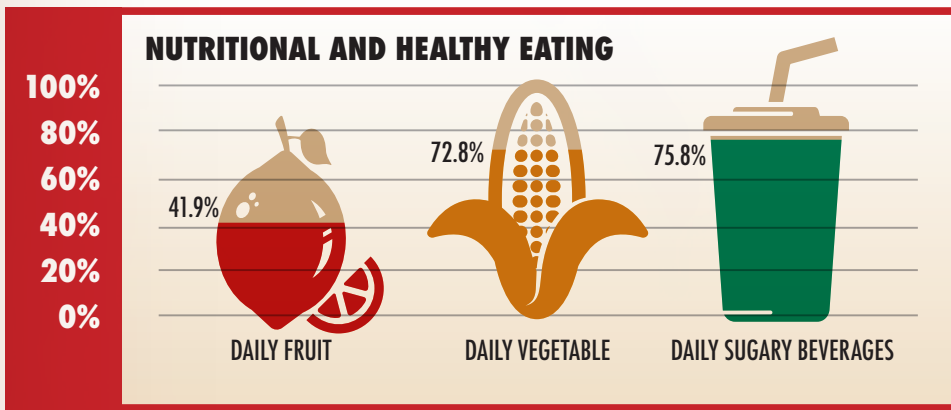
Excessive alcohol can be harmful to one's health, and drinking alcohol is linked to a higher risk of various cancers. According to the Oklahoma Behavioral Risk Factor Surveillance System (BRFSS), 4.8 percent of AI/AN adults in northeast Oklahoma reported moderate or heavy alcohol use. Binge drinking was more common among the same group - 16.0 percent reported binge drinking (measured as  $\geq 4$  drinks for women or  $\geq 5$  drinks for men per occasion during the past 30 days).

Commercial tobacco is highly addictive, and its use is linked to cancer. Data from the 2014 Cherokee Nation American Indian Adult Tobacco Survey show that nearly 21.1 percent of respondents were smokers. That's slightly more than one in five adults. According to the Nation's 2011 Tobacco Survey, Cherokee adult smokers had their first cigarette before turning 16 years old, and only 13 percent reported using tobacco for ceremonial, prayer, or traditional reasons.

**Nutrition, Physical Activity, and Weight Status**

Better nutrition means better health. Practicing healthful eating habits and staying physically active to maintain a healthy weight can reduce the risk of cancer. According to the Oklahoma BRFSS, 41.9 percent and 72.8 percent of Cherokee Nation AI/AN adults reported consuming the daily recommended amount of fruits and vegetables, respectively. However, 75.8 percent reported drinking a sugary

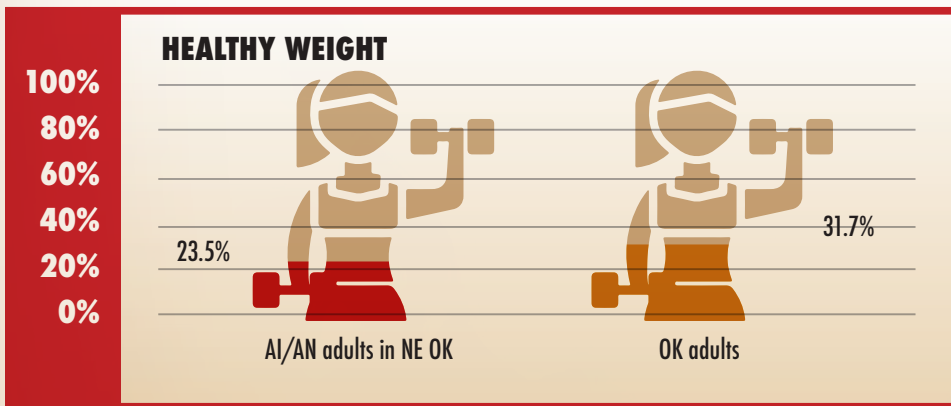
drink on a daily basis, which is considered an unhealthy eating habit. The majority (64 percent) of Cherokee Nation AI/AN adults report being engaged in a leisure time physical activity. For weight status, fewer Cherokee Nation AI/AN adults reported maintaining a healthy weight than Oklahoma adults (23.5 vs 31.7 percent).



**Figure 6.**  
Percent of AI/AN Cherokee Nation adults with daily consumption of fruits and vegetables and sugary beverages.



**Figure 7.**  
Percent of AI/AN Cherokee Nation adults who self-reported engaging in leisure time physical activity.



**Figure 8.**  
Percent of AI/AN adults and Oklahoma adults classified as healthy weight.

Sources for Figures 7-10: Oklahoma Behavioral Risk Factor Surveillance System (BRFSS); 2014 Cherokee Nation American Indian Adult Tobacco Survey

## Screening and Early Detection

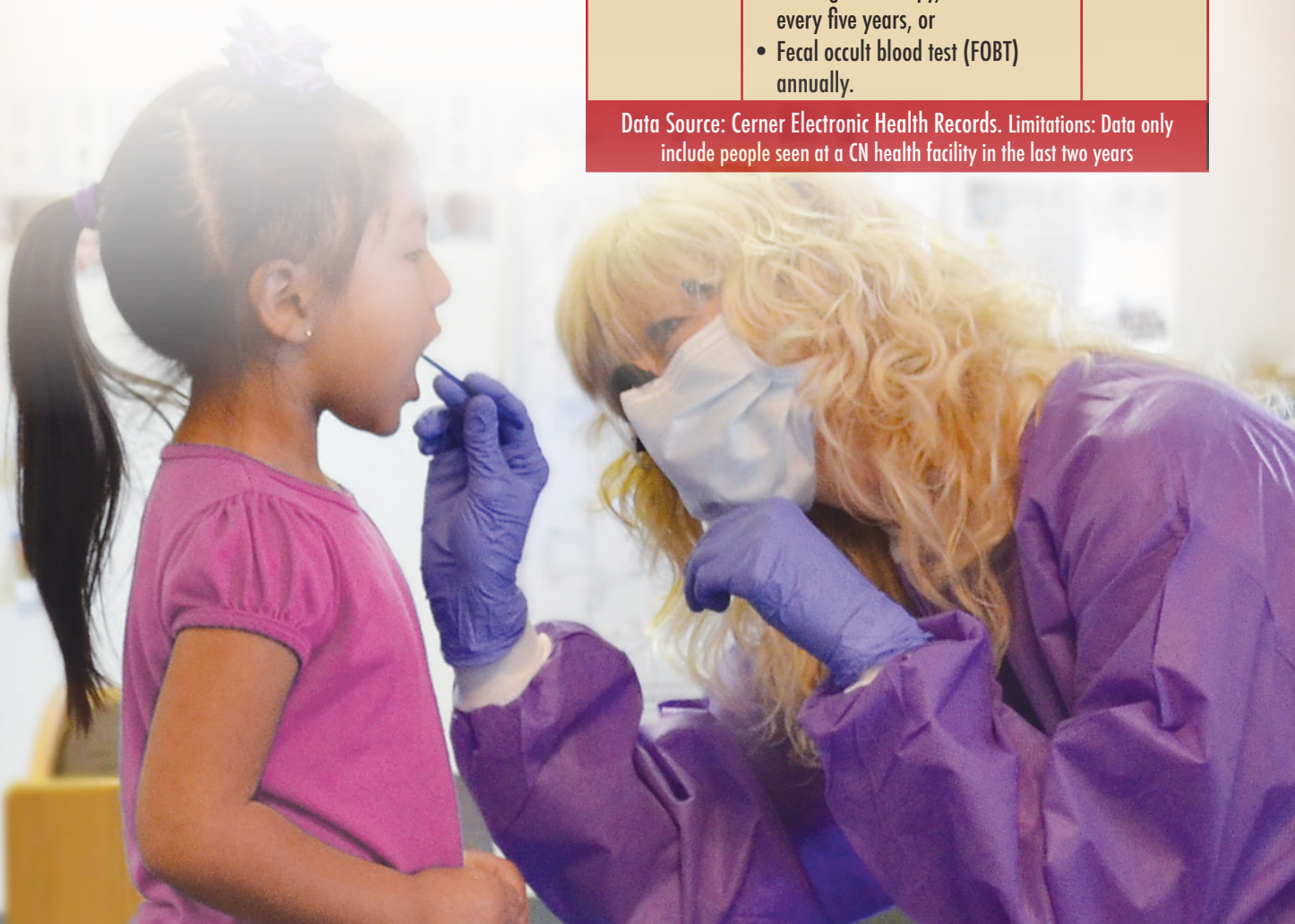
For certain cancers, screening tests can detect cancer or pre-cancerous changes at an early stage when they are most curable and treatment is most likely successful. This section shows data on breast, cervical and colorectal cancer screenings from 2016-2017 Cerner Electronic Health Records. In 2016-2017, the screening rate for mammograms was higher than pap tests or the screening tests for colorectal cancer. The data show that 41.6 percent of active female patients had a mammogram, 28.6 percent of eligible female patients were screened with a pap test, and 29.1 percent of eligible adult patients were screened for colorectal cancer.

**Figure 9**

*Cancer Screening Rates, Cherokee Nation, 2016-2017.*

CANCER	SCREENING RECOMMENDATIONS AT CHEROKEE NATION (AVERAGE RISK INDIVIDUALS)	PERCENT SCREENED
<b>Breast</b>	All women ages 40-74 should be screened with a mammogram annually.	41.6%
<b>Cervical</b>	All women ages 21-29 should be screened with a pap test every 3 years, and ages 30-65 every 5 years (1 year if abnormal).	28.6%
<b>Colorectal</b>	All adults ages 50-75 should be screened with a: <ul style="list-style-type: none"> <li>• Colonoscopy every 10 years,</li> <li>• Flex sigmoidoscopy/barium enema every five years, or</li> <li>• Fecal occult blood test (FOBT) annually.</li> </ul>	29.1%

Data Source: Cerner Electronic Health Records. Limitations: Data only include people seen at a CN health facility in the last two years



# Cancer Stories of Hope

Cancer survivor is a term used for people who have been diagnosed with cancer. Other than the physical toll cancer patients face, they may also have emotional, social, spiritual and financial hardships and challenges. In addition to cancer patients, family members, friends and caregivers can also be affected by a cancer diagnosis. Even for those who are post-treatment, cancer survivors continue to have healthcare and public health needs long after treatment has been completed.

We are proud to feature the stories of four cancer survivors and their caregivers who fought cancer in the Cherokee Nation. Despite the common thread of being impacted by cancer, their experiences differ. One survivor faced cancer after losing a loved one to the disease and another found strength in the support that her family provided; a 25-year survivor advocates for people to get screened early and a couple sought care for their son. Although unique, all their stories prove there is hope and life beyond cancer.



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# Eva Oxford

*“Never give up. Never ever give up.”*

Like so many people, Eva Oxford knows cancer all too well. After a recurring sickness and a routine colonoscopy, the Cherokee Nation boilermaker was diagnosed with colon cancer. But thanks to her fighting spirit, she pushed through.

“The Good Lord seen fit to let me survive it,” she said. She was initially worried. “You know, it’s kind of a sinking feeling. But I just had a feeling that I would be okay.” Her medical team was immediately responsive. Upon her diagnosis, she went into surgery and treatment and she bounced back. However, her resilience was put to the test once more.

Oxford was diagnosed with breast cancer roughly a decade after her first battle. Though cancer is never an easy thing to deal with, her second diagnosis proved to be the most difficult.

“With my first one, the treatments didn’t make me sick. But with my breast cancer, it was such a rough treatment,” she said. “I’d get sick every time I take it.” The aggressive treatments left her weak and somewhat immobile. However, she realized this was a necessary step on the road to recovery.

Oxford credits her medical team for their expertise and top-notch care. “They saved my life. They really did,” she said.

Unfortunately, her personal cancer fight wasn’t the only one she had to worry about. One of her daughters was diagnosed with lung cancer four years prior and lost her battle.

“There’s hardly anyone that hasn’t been affected in some way by cancer,” she shared.

Also sadly, Oxford recently lost her husband of 57 years. He was one of her biggest supporters and caretakers during both diagnoses and treatment cycles. He continuously pushed her, never allowing her to lose hope. “He said, ‘You’re going to be okay. You’re gonna make it.’”



Since beating her second round with cancer, Oxford has changed her health habits, giving up smoking and heeding the advice of her medical team. But even more significantly, she’s changed her outlook on life.

“I’m more considerate of other people,” she said. “I think it’s made me appreciate everything that I have.”

Now a two-time cancer survivor, she thinks a new mission might be on the horizon. “I figured the good Lord’s got more for me to do. There’s something else out there for me. And maybe something like helping people.” Her story of survival is inspirational to those around her, including her 29 great grandchildren and two remaining children (she also lost another child in an automobile accident). But perhaps it’s most motivational to others who are currently fighting cancer. For existing patients, she offers words of encouragement.

“You never want to give up. Never give up,” she said. “In my whole life, I’ve been very fortunate. You meet so many people in your lifetime and see what some of them go through. And anytime that you think you’ve got it bad, you just look around—there’s always someone that you can help that needs something.”

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# Lisa Lyon

*“Take control of your health. Early detection is the key to the cure.”*

Lisa Lyon was no stranger to cancer. “I had seen many others walk the cancer journey during my career,” she said. As the Senior Clinical Informatics Coordinator for Cherokee Nation Health Services, she deals with the technical side of health and electronic health records. But cancer wasn’t prevalent in her family, and she never expected to fight a cancer battle of her own.

In mid-2014, she was hospitalized for a series of symptoms that doctors misdiagnosed. After being released, she returned for a two-week check-up and received unexpected news—she had stage 1 colon cancer. “It came as a complete shock, as the only term used prior to that was ‘dysplasia’,” she said.

In Lyon’s case, early detection was key. She was able to circumvent the typical course of treatment, with surgery and strict monitoring. “Thanks be to God, I did not require treatment, just surveillance every 3 months for a couple of years, and then labs and checkups every 6 months for the remainder of 5 years out from diagnosis.”

At one point, it seemed surveillance may not have been enough. “I did have another colonoscopy a year after surgery because of some indicators, and I’m thankful to report it was fine.”

Lyon credits Cherokee Nation’s numerous cancer support resources with aiding her recovery as well as the recovery and treatment of other cancer patients. “Patients with a cancer diagnosis that are able to use Cherokee Nation Health Services are blessed to have resources, support, and help when they need it,” she said. She points specifically to the case managers, who “become like family.”

She sees cancer survivorship as a blessing. “Each day is a gift,” she said. “I appreciate every little smile and laugh from a grandchild, time spent with family and friends.” Though she finds her work rewarding, she sees her family as her greatest accomplishment, and her survival means she has even more time to spend with them. “Education, degrees, and awards pale in comparison to my husband, kids, and grandchildren.”



Her survival also serves as inspiration for others in Cherokee Nation. She suggests everyone should prioritize their health. “Be your own advocate,” she said. “I had a colonoscopy the year before my diagnosis and the cancer was missed.” She describes having “a feeling” that something just wasn’t right, and she acted on it. It’s that action—trusting her instincts—that ultimately led to her early diagnosis and full recovery.

“Continue to push for answers if something doesn’t seem or feel right. You know your body better than anyone else.”

She urges all Cherokee Nation residents to find out about and schedule their annual screenings, including mammograms, pap smears, colonoscopies, and all other recommended testing.

Being proactive about her health not only saved her life and gave her more time to spend with her family—it also helped her determine how best to care for her kids.

“Because I was diagnosed with colon cancer at an age that was younger than many people, my children should have their first colonoscopies sooner than the standard recommendation of age 50,” she said.

Though her experience was unexpected and scary, her recovery ultimately serves as a tool to inspire better health practices within her family and all throughout Cherokee Nation.



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# Lisa Pivec

As Cherokee Nation Senior Director of Public Health, Lisa Pivec is tasked with advancing the health of others. But this is more than just a job responsibility; it's personal. At the age of 23, Pivec was diagnosed with carcinoma in situ cervical cancer during a regular checkup.

Immediately after her diagnosis, Pivec feared for her life.

"I thought I was going to die," she said. "I thought that I wouldn't make it through. I thought I wouldn't have children and I probably wouldn't live very long, and it scared me half to death."

But upon seeking treatment, Pivec learned two crucial pieces of information—early screening was half the battle and cervical cancer was easily treatable.

"I didn't know that cervical cancer could be cured at that time ... I learned so much when I got it. I read everything I could find and learned the importance of early detection and treatment," she said. She credits her recovery with this newfound knowledge as well as her mother's unconditional support. But she also attributes her treatment to a caring medical team that not only diagnosed her early but took steps to protect her future fertility.

"I was fortunate because they caught it so early. They were able to do what's called a cone biopsy. And when they did, they were able to get everything with the borders free of any cancer cells. And they monitored me closely for the next 5 to 10 years," she said. "They saw me as a real person who had a life and a future, a purpose."

During this period of monitoring, she'd go in for further examination if any results were abnormal. Early detection combined with ongoing care helped her become – and remain – a cancer survivor.

"I'm a 25-year survivor now," she said. "I was so fortunate to have a health care system that prioritizes and made it important. And I had health care providers that wanted to take care of it immediately and guided me through this."



Pivec often encounters women in the community who are reluctant to follow health care guidelines and schedule their annual screenings. But she advises them to follow through, as the discomfort of the test is nothing compared to the pain of needlessly suffering cancer.

"This is a test that saves lives," says Pivec. "You know, I try to advocate all the time and try to tell everybody I know, 'Make sure you get your annual exam and make sure you follow up on that.' There's no need to let that take a life when you are so easily cured."

In addition to annual screening exams, she advises existing cancer patients to seek out resources in the community, including Cancer Support meetings, cancer case managers and patient navigators, as well as the strength and support of friends and family.

She also believes her story serves as a motivational example for those in Cherokee Nation. She's an Adair County native who has lived in and worked with Cherokee Nation for more than 27 years. Her ties to the community aren't just through her work; this is her home.

She reminds everyone, "Being a cancer survivor means hope - for the community, for our tribe."

# Mary Owl

*“My case manager helped me through the process and my concerns.”*

Mary Owl was no stranger to cancer. Her mother had battled breast cancer and her son had passed away from leukemia. Still, she never expected to endure a cancer battle of her own.

“I was kind of shocked that I actually did have breast cancer,” said Owl.

In 2011, she underwent two biopsies, both of which came back benign. During her next mammogram, her doctors identified a cloudy mass in her right breast and requested an MRI. Due to insurance red tape, she had to wait another 6 months before any conclusive testing could be completed. In May 2012, she had another mammogram, a biopsy and a diagnosis—breast cancer.

“I shed a few tears,” Owl said, but she didn’t stay sad for long. She channeled the strength she’d summoned during her son’s leukemia battle. Back then, she prayed, “Let me have this. Not him.” When she received her diagnosis, she knew this wasn’t a death sentence; it was an opportunity for her to be strong and honor her son’s memory.

“This is my challenge this time. I’m going to take care of this,” she said.

Throughout the process, Owl found support in her case managers, who helped her with everything from physician referrals to appointment reminders. Without her case managers, she says, “I would have wasted a lot of trips to Tulsa.”

Aside from her team of case managers, Owl relied on her faith and strength throughout her treatment.

“I’m pretty much the backbone of my family,” she said. Her sister helped as much as she could, but Owl says it was “... mainly the Lord watching over me.”

She faced some challenges understanding the medical terminology associated with her diagnosis and enduring the sheer number of services and appointments she needed. Here, her case managers also played an important role in ensuring treatments were covered correctly.



“A lot of patients don’t understand that,” she said. The case managers helped connect her to the services she needed.

Though Owl has been cancer-free for five years now, she doesn’t see herself any differently, saying, “I really never considered myself a survivor. I consider myself a very blessed person.”

She advises current cancer patients to use all the resources available to them, including the survivor support groups and community health guidelines regarding physical activity and weight.

“Don’t prolong a really stressful situation,” she said. “It can really damage your health, especially if you have history within your life [and] family. What you do to your body is eventually going to come back on you.”

To honor her son’s memory each year, she coordinates The Bird Walk to encourage physical activity and ensure his battle wasn’t in vain. The walk also serves as a symbol of her philosophy in dealing with a condition as serious and difficult as cancer.

“Stay strong throughout the process. Just know that you’re gonna make it,” she said.

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# Sam Bilby

*“People are really drawn to how well he’s rebounded.”*

Sam Bilby was like any other school age kid—full of energy, positivity, humor and a love for his twin sister. But unlike other kids his age, he faced some scary health issues.

“Sam had been sick on and off, and all the doctors had said it was viral,” his father Greg Bilby said.

Initially, Sam seemed to suffer from the kind of bad viral bug that kids typically catch. But the longer his sickness lingered, the more Greg and his wife worried. Sam was often fatigued, his nail beds had changed color and texture, and his skin was excessively dry. During Sam’s initial hospital visit, his mother, Melissa, who was raised by a practicing nurse, demanded full bloodwork.

“This is kind of a good lesson for a lot of health care professionals because a lot of them, you know, the moms come in and they’re all nervous, and they get all freaked out and want all the tests done,” Bilby said. But soon, the doctor and nurse practitioner learned that Sam’s sickness wasn’t a virus. On October 25, 2016, he was diagnosed with acute lymphoblastic leukemia.

Thanks to an action-oriented care team, Sam began his first chemotherapy session within 48 hours of his diagnosis. His doctors were optimistic. Dr. Kirkpatrick, Sam’s pediatric oncologist, assured Bilby that this cancer was beatable. “He told me it was a pretty immature strain and that there was a very good chance he could beat it,” Bilby said.

Soon after Sam’s chemo treatments were underway, Bilby and his wife learned that St. Jude’s Children’s Hospital would handle any medical expenses not covered by their insurance. With a huge financial burden removed, they could focus on Sam’s treatment and eventual recovery.

Throughout his treatment process, Sam has maintained his spirit and boisterous personality. “He’s a social butterfly, he’s outgoing, he’s kind of a big flirt,” Bilby said. “And he had a couple of nurses that would, you know, fight over him and they would find out when he was going to be up there [in treatment].” Sam also maintained his weight during his chemo treatments. Since the hospital food brought on nausea, the Bilby family – including Greg, his parents,



Melissa and her mother – and countless friends would bring food from Chopsticks and Cane’s Chicken. “We were very thankful that he could eat,” Bilby added.

By March of 2017, Sam entered remission. It was a huge milestone in a tough battle. He will remain in treatment until 2020. Some of his regular appointments will include different forms of chemo and regular checks of his spinal fluid. The process is all part of what Greg Bilby considers his family’s “new normal.”

He also credits his family, church and community for the support they’ve provided throughout Sam’s treatments. Sam’s grandfather, a retired teacher and school superintendent, stepped in to homeschool Sam and take him to key appointments. Members of their church banded together to ensure the family had hot meals.

Additionally, Bilby is thankful for early detection and the great service he received from Sam’s medical team.

But most important, throughout Sam’s diagnosis and treatment, Greg and Melissa Bilby have leaned on their faith. Greg feels Sam has survived his bout with leukemia to exhibit strength for the community. “He’s the strongest person in our family, church and community and he’s pulled through really well,” Greg said. “People are really drawn to how well he’s rebounded.”

Sam’s story is one of hope for children and adults alike.

# Cherokee Nation's Comprehensive Cancer Prevention and Control Plan

Cherokee Nation's Cancer Plan is a strategic action plan to reduce the cancer burden within the tribal reservation and among all citizens. The Cancer Plan addresses all aspects of Cherokee Nation's Comprehensive Approach to Cancer (see page 10). The plan is structured around goals, objectives, strategies and targets. The goals reflect one or more focus areas (primary prevention, early detection and screening, treatment, quality of life). Priorities outline the major content areas to be addressed with each goal. Objectives describe what we aim to accomplish. The strategies and activities define the key approaches individuals and organizations can take to make an impact on cancer, and the targets show how we will measure progress and expected outcomes if we successfully implement the strategies and activities.

**Figure 10.** *Summary of Goals and Priorities*

<b>PREVENTION</b>	
<b>Goal:</b> Reduce the number of new cancer cases and deaths.	
1.	Nutrition and physical activity
2.	Community engagement and health promotion
3.	Infections
4.	Radon
<b>Goal:</b> Prevent commercial tobacco use among youth and young adults.	
5.	Tobacco Prevention – Adults
6.	Tobacco Prevention – Youth
7.	Tobacco-free policies
<b>SCREENING AND EARLY DETECTION</b>	
<b>Goal:</b> Detect cancer at its earliest stages.	
8.	Screening Rates
9.	Screening for Viral Hepatitis
10.	Early detection
<b>QUALITY OF LIFE, TREATMENT, AND CARE</b>	
<b>Goal:</b> Improve access and the quality of diagnoses, treatment, care and life for everyone affected by cancer.	
11.	Survivor Health Promotion
12.	Access to resources



# Prevention

**Goal 1:** Reduce the number of new cancer cases and deaths.

## NUTRITION AND PHYSICAL ACTIVITY

**Objective 1.1:** On an annual basis from 2018-2022, increase the number of active members utilizing healthy eating and physical activity programs available to the Cherokee Nation community.

### Strategies and Activities:

- Promote the Cherokee Nation Public Health Programs' website listing of community health opportunities
- Educate the community on the connection between cancer and obesity and the preventative and protective value of good nutrition and regular physical activity
- Increase physical activity among elders and survivors
- Support community cancer events and other programs that promote nutrition and physical activity

**Measure:** Number of Wings Fitness Program active members

**Baseline:** 8,259 in 2017

**Target:** 9,000 in 2022

**Measure:** Number of Cherokee Nation Walking Groups active members

**Baseline:** 185 in 2017

**Target:** 300 in 2022

**Measure:** Number of Male Seminary Recreation Center active members

**Baseline:** 11,781 in 2017

**Target:** 12,500 in 2022

**Source:** Cherokee Nation Public Health Programs

## COMMUNITY ENGAGEMENT AND HEALTH PROMOTION

**Objective 1.2:** By 2022, increase the number of comprehensive cancer control partnerships with tribal, regional and state organizations that are focused on community engagement and health education.

### Strategies and Activities:

- Develop a partner engagement plan to broaden relationships with organizations that share a common goal for community engagement and promoting healthy living
- Identify groups for outreach who are at higher risk for developing cancer, such as people diagnosed with diabetes and other chronic diseases
- Increase health promotion in small rural communities

**Measure:** Number of active organizational partners in OSTA

**Baseline:** 13 in 2017

**Target:** 18 in 2022

**Source:** Cherokee Nation Cancer Programs



## INFECTIONS AND VIRUS EXPOSURE

**Objective 1.3:** By 2022, increase vaccination rates against Human papillomavirus (HPV) infection, a cause of cervical cancer.

### Strategies and Activities:

- Assess HPV vaccination rates among preteens
- Encourage vaccination programs in schools and community organizations
- Encourage providers to use client reminder systems

**Measure:** 2-dose HPV vaccination rate for preteen girls and boys aged 11-12

**Baseline and Target:** Developmental – Figures will be provided in annual progress report

**Source:** Cherokee Nation Electronic Health Records

## RADON

**Objective 1.4:** By 2022, increase the percentage of Cherokee Nation AI/AN households that have been tested for radon exposure.

### Strategies and Activities:

- Assess and identify the areas with the highest potential for elevated radon levels in Cherokee Nation
- Distribute radon testing kits to homeowners in areas susceptible to elevated radon levels
- Provide radon testing kits to individuals newly diagnosed with lung cancer as requested
- Educate Cherokee Nation about radon risk and control

**Measure:** Number of households tested in 1 calendar year

**Baseline:** 6 in 2017

**Target:** 36 in 2022

**Source:** Cherokee Nation Environmental Program

**Goal 2:** Prevent commercial tobacco use among youth and young adults.

## TOBACCO PREVENTION AMONG ADULTS

**Objective 2.1:** By 2022, decrease commercial tobacco use among adults.

### Strategies and Activities:

- Conduct provider assessment and obtain feedback on tobacco cessation referral system
- Use provider reminders to increase use of tobacco cessation resources
- Employ mass media education campaigns to reduce tobacco use initiation
- Educate the community on ways to reduce second hand smoke exposure and existing policies
- Identify ways to reduce client out-of-pocket costs for tobacco cessation

**Measure:** Percentage of American Indian adults in northeast Oklahoma self-reporting as a smoker

**Baseline:** 29.2% in 2014-2015

**Target:** 26.2% in 2022

**Source:** Oklahoma State Health Department BRFSS



## TOBACCO PREVENTION AMONG YOUTH

**Objective 2.2:** By 2022, decrease percentage of youth who have ever tried cigarette smoking.

### Strategies and Activities:

- Support community mobilization activities to restrict minors' access to tobacco products
- Inform the community about benefits of restricting minors' access to tobacco products
- Review existing legislation and support new laws directed at minors' purchase, possession or use of tobacco products
- Provide retailer education on laws restricting minors' access to tobacco products
- Enforce sales laws directed at retailers to restrict minors' access to tobacco products

**Measure:** Percentage who students who reported ever trying smoking (cigarettes)

**Baseline:** 40.9% in 2017

**Target:** 33.0% in 2022

**Source:** Cherokee Nation Youth Risk Behavior Survey

## TOBACCO-FREE POLICIES

**Objective 2.3:** By 2022, increase the number of schools, organizations, and businesses who have updated tobacco-free policies to include e-cigarettes or vaping.

### Strategies and Activities:

- Evaluate community-wide policies for the inclusion of information on e-cigarettes or vaping
- Provide resources for schools, communities and businesses to update or create new policies for e-cigarettes or vaping

**Measure:** Number of Cherokee Nation programs and community organizations with tobacco-free policies addressing e-cigarettes or vaping

**Baseline:** 22 in 2017

**Target:** 30 in 2022

**Source:** Cherokee Nation Public Health Programs



# Screening and Early Detection

**Goal 3:** Detect cancer at its earliest stages.

## SCREENING RATES

**Objective 3.1:** By 2022, increase breast, cervical, and colorectal cancer and tobacco use screening rates by 3%.

<p><b>Strategies and Activities:</b></p> <ul style="list-style-type: none"> <li>• Assess and review cancer screening rates</li> <li>• Reduce barriers to getting screened by offering screenings at different hours and aiding in transportation assistance</li> <li>• Increase access to screening through a traveling mobile unit</li> <li>• Increase public awareness of breast cancer screening through outreach events</li> <li>• Provide culturally appropriate educational materials in the Cherokee language to the community</li> <li>• Use media such as websites, print, radio and newsletters to provide messages about the importance of breast cancer screening</li> </ul>	<p><b>Measure:</b> Screening rates among Cherokee Nation patients  <b>Baseline and Target (2017 and 2022):</b></p> <ul style="list-style-type: none"> <li>• Breast cancer – mammogram: 41.6% to 44.6%</li> <li>• Cervical cancer – Pap test: 28.6% to 31.6%</li> <li>• Colorectal cancer – Colonoscopy, FOBT, or Sigmoidoscopy: 29.1% to 32.1%</li> <li>• Tobacco products screening by healthcare provider: 78.0% to 80.0%</li> </ul> <p><b>Source:</b> Cherokee Nation, Cerner Electronic Health Record</p>
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## SCREENING FOR VIRAL HEPATITIS

**Objective 3.2:** By 2022, increase the number of Cherokee Nation adults aged 20-69 years old screened for hepatitis C (HCV).

<p><b>Strategies and Activities:</b></p> <ul style="list-style-type: none"> <li>• Support the virtual clinic or Community Healthcare Outcomes (ECHO) telehealth project</li> <li>• Partner with Cherokee Nation Health services providers to convene meetings focused on increasing awareness of liver cancer prevention and detection</li> <li>• Ensure quality treatment for those who test positive</li> </ul>	<p><b>Measure:</b> Number of Cherokee Nation AI/AN adults screened for HCV  <b>Baseline:</b> 40,000 cumulative through 2017  <b>Target:</b> 85,000 cumulative through 2022  <b>Source:</b> Cherokee Nation Health Services</p>
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## EARLY DETECTION

**Objective 3.3:** By 2022, increase the rate of early-diagnoses cancer.

<p><b>Strategies and Activities:</b></p> <ul style="list-style-type: none"> <li>• Promote screening and early detection through media campaigns, and by providing educational resources</li> <li>• Decrease the percentage of entries with unknown stage of diagnoses in registry</li> </ul>	<p><b>Measure:</b> Percentage of patients diagnosed with cancer at an early stage (in situ or stage I) for: Breast, cervical, colon, prostate, lung and melanoma cancers  <b>Baseline and Target:</b> Developmental – Figures will be provided in annual progress report  <b>Source:</b> Cherokee Nation Health Services</p>
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# Quality of Life, Treatment and Care

**Goal 4:** *Improve access and the quality of life, through treatment and diagnosis and care for everyone affected by cancer.*

## SURVIVOR HEALTH PROMOTION

**Objective 4.1:** By 2022, increase the percentage of cancer patients participating in health promotion activities.

### Strategies and Activities:

- Disseminate information to educate survivors on cancer risks after initial cancer diagnosis
- Promote wellness and connect patients with culturally relevant resources during cancer treatment
- Encourage survivors to participate in activities related to healthy eating, active living and healthy diet to decrease risk of recurrence of cancer.

**Measure:** Percentage of cancer patients who report participating in health promotion activities at least one time per month

**Baseline and Target:** Developmental – Figures will be provided in annual progress report

**Source:** Cherokee Nation Cancer Programs

## ACCESS TO RESOURCES

**Objective 4.2:** By 2019, establish an online library of culturally appropriate and up-to-date resources for patients diagnosed with cancer, their families and caregivers.

### Strategies and Activities:

- Review and update existing resources
- Partner with OSTA Media workgroup to design and promote website
- Promote online library to cancer patients, family members and caregivers

**Measure:** Number of online libraries maintained by Cherokee Nation Cancer Programs

**Baseline:** 0 in 2017

**Target:** 1 launched in 2019, maintained annually through 2022

**Source:** Cherokee Nation Cancer Programs



# Our Next Steps Forward

Cherokee Nation's Cancer Plan 2018-2022 details an agenda that will help us collectively move toward reducing cancer in the Cherokee Nation. The Plan goes beyond what happens in hospitals and clinics. It proposes a comprehensive approach with a heavy focus on prevention in every aspect of our lives. While the Cancer Plan does address specific health priorities and strategies, it is important to acknowledge that we will continue to support other health initiatives to ensure the overall health of all Cherokee citizens, families and communities remains a priority. The strategic goals, initiatives and measures presented in the Plan will focus our attention and help us monitor progress toward a cancer-free community.

Implementation of the Cancer Plan will begin immediately. We all have a role in cancer prevention, so the Plan will be the responsibility of all partners and community members. Cherokee Nation Public Health Programs and OSTA are committed to working in tandem with individuals and community partners over the next five years. Together, we will address the key priority areas that will have the greatest impact on our community.

As more information is gathered and learned, Cherokee Nation will continue to implement new strategies, and make further adjustments to achieve and maintain a healthier community. The OSTA Data and Evaluation Work Group will also continuously evaluate the implementation of the plan. Coalition members will monitor activities on an annual basis and will make annual reports available to the public so you can see the changes being made over time. Just as the Cancer Plan is a living document that will change constantly, we'll continue to adapt and alter best practices to protect the well-being of Cherokee Nation residents.

Together, we will ensure a healthy future for this generation and generations to come!





ANGE



# Appendix

## B. Oklahoma Strategic Tribal Alliance for Health (OSTAH) Members

**Tony O. Ballou**  
Public Health Educator  
Cherokee Nation

**Ben Buckskin, B.S.**  
Public Health Educator  
Cherokee Nation

**Stefanie Buckskin, MPH**  
Research Project Coordinator  
University of Oklahoma Health Sciences Center

**Margie Burkhart**  
Comprehensive Cancer Control Program Manager  
Cherokee Nation

**Youlanda Cain, LPN**  
Women's Health Case Manager  
Cherokee Nation

**Janis E. Campbell, PhD., G.I.S.P.**  
Associate Professor of Research  
Biostatistics & Epidemiology  
College of Public Health  
University of Oklahoma Health Sciences Center

**Andrea Carpitcher, MSN, RN**  
LT, USPHS Commissioned Corps  
Cherokee Nation Breast & Cervical Cancer Early  
Detection  
Program Manager

**Erin Collier, B.S.**  
Health Systems Manager, Primary Care  
American Cancer Society, Inc., High Plains Division

**Carol Choate, MS, RN**  
Coordinator  
TSET Healthy Living Program, Tahlequah

**Ashley Comiford, DrPH**  
Epidemiologist  
Cherokee Nation

**Sonya Davidson, B.S.**  
Public Health Educator  
Cherokee Nation

**Julie Deerinwater-Anderson, MPH**  
Primary Prevention Project Coordinator  
Cherokee Nation

**Amy DeVore, M.A.**  
Public Health Educator  
Cherokee Nation

**Val Dobbins**  
Coalition and Safe Schools Coordinator  
Tahlequah B.E.S.T. Community Coalition

**Shane Dominick**  
Health IT Senior Systems Analyst  
Cherokee Nation

**Tresa Eagle-Miller**  
Public Health Educator  
Cherokee Nation

**Neoma Flynn, BSN, RN**  
Women's Health Case Manager  
Cherokee Nation BCCEDP

**David Gahn, MD, MPH**  
Medical Director, Cherokee Nation Public Health  
Staff Physician, Hastings Hospital Department of  
Obstetrics and Gynecology

**Randy Gibson, M.A.**  
Program Liaison  
Cherokee Nation Health Services



**Denise Howard**

*Special Projects Officer  
Cherokee Nation*

**Sohail Kahn**

*Director of Health Research & Chair  
Cherokee Nation IRB*

**Abbi Lee, PhD Candidate, MPH**

*Community Health Manager  
Susan G. Komen Tulsa*

**Lisa Lyon, MSHI, BSN, CDE**

*Sr. Clinical Informatics Coordinator  
Cherokee Nation Health IT*

**June Halfacre, MHA**

*Tobacco Program Manager  
Cherokee Nation*

**Hillary Mead, M.S.**

*Supervisor  
Cherokee Nation, Public Health Educator*

**Barbara Neal**

*BCCEDP Public Health Educator  
Cherokee Nation*

**Ronnie Neal**

*Public Health Educator  
Cherokee Nation*

**Tricia Nichols**

*Public Health Educator  
Cherokee Nation*

**Mary A. Owl**

*Public Health Educator  
Cherokee Nation*

**Jennifer Roysdon, MS, TTS**

*Tobacco Treatment Systems Coordinator  
Hospitals Helping Patients Quit  
Co-Chair, Oklahoma Comprehensive Cancer Network*

**Tammy Runabout**

*Manager, Administrative Operations  
Cherokee Nation BCCEDP*

**Charles Stilwell**

*Public Health Educator  
Cherokee Nation*

**Jeff Tucker, M.S.**

*Supervisor Primary Prevention  
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**Cindy Tuder, B.S.**

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**Barbara Williams, CPS**

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*Supervisor Primary Prevention  
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**Tia Yancy, MPH, CHES**

*Cancer Prevention and Control  
Cancer Prevention & Control Manager  
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### C. OSTA<sup>H</sup> Partners

American Cancer Society Inc., High Plains Division  
Cherokee County Health Department  
Cherokee Nation Health Services  
Indian Health Service  
Northeastern State University, Tahlequah, Oklahoma  
Oklahoma State Department of Health  
Oklahoma State University  
Oklahoma Tobacco Coalition  
Southern Plains Tribal Epidemiology Center  
Tahlequah Public Schools  
University of Oklahoma  
Susan G. Komen, Tulsa  
University of Oklahoma, Health Sciences Center  
Warren Cancer Research Center

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### E. Acronyms

<b>AI/AN</b>	American Indian and Alaska Native
<b>BRFSS</b>	Behavioral Risk Factor Surveillance System
<b>CCC</b>	Comprehensive Cancer Control
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CHR</b>	Community Health Representatives
<b>CN</b>	Cherokee Nation
<b>CNBCCEDP</b>	Cherokee Nation Breast & Cervical Early Detection Program
<b>CNCCCP</b>	Cherokee Nation Comprehensive Cancer Control Program
<b>CNCP</b>	Cherokee Nation Cancer Programs
<b>CNHS</b>	Cherokee Nation Health Services
<b>FOBT</b>	Fecal Occult Blood Test
<b>HBV</b>	Hepatitis B
<b>HPV</b>	Human Papilloma Virus
<b>IHS</b>	Indian Health Services
<b>OSTAH</b>	Oklahoma Strategic Tribal Alliance for Health
<b>UV</b>	Ultraviolet
<b>YPLL</b>	Years of Potential Life Lost
<b>YRBS</b>	Youth Risk Behavior Survey

### F. References

1. American Indian Cancer Foundation: American Indian Cancer Burden: Cancer Facts for American Indians and Alaska Natives: Available at <https://www.americanindiancancer.org/american-indian-cancer-facts>



## G. Sources of Cancer Data

This table outlines the sources of data and known limitations to the Cancer Plan’s indicators. All data are for the Cherokee Nation AI/AN population residing in the reservation service area, unless otherwise specified.

TOPIC & INDICATOR	DATA SOURCE
<b>Cancer Incidence and Deaths</b>	
<ul style="list-style-type: none"> <li>Incident cancer</li> <li>Leading incident cancer sites</li> <li>Cancer incidence rate</li> <li>Cancer deaths (mortality)</li> <li>Cancer mortality rate</li> </ul>	Oklahoma State Department of Health, Center for Health Statistics via OK2SHARE <sup>(a)</sup>
Years of Potential Lives Lost (YPLL)	Cherokee Nation Health Services
Vaccination rates <ul style="list-style-type: none"> <li>Hepatitis B</li> <li>Human papillomavirus (HPV)</li> </ul>	Data not available
<b>Risk Factors</b>	
Tobacco use – Adults	Cherokee Nation Adult Tobacco Survey, 2011 and 2014
<b>Alcohol use</b> – Adults <ul style="list-style-type: none"> <li>Moderate/heavy use</li> <li>Binge drinking</li> </ul> <b>Weight status</b> – Adults <ul style="list-style-type: none"> <li>Normal weight</li> <li>Overweight</li> <li>Obese</li> </ul> <b>Healthy eating</b> – Adults <ul style="list-style-type: none"> <li>Daily consumption of fruits, vegetables and sugary beverages</li> </ul>	Behavioral Risk Factor Surveillance System (BRFSS) <sup>(b)</sup>
Tobacco use – Youth	Youth Risk Behavior Surveys (YRBS) <sup>(c)</sup>
<b>Screening and Early Detection</b>	
Breast (Female) Cervical Colorectal	Cherokee Nation, Cerner Electronic Health Records <sup>(d)</sup>

Data Limitations:

- This is Indian Health Service (IHS)-linked race data and not enhanced race data. Except for breast cancer, includes in situ cancer diagnoses. Death certificates are often misclassified for AI/ANs.
- Small sample sizes for American Indians.
- Data only include people seen at a Cherokee Nation health facility in the last 2 years.



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