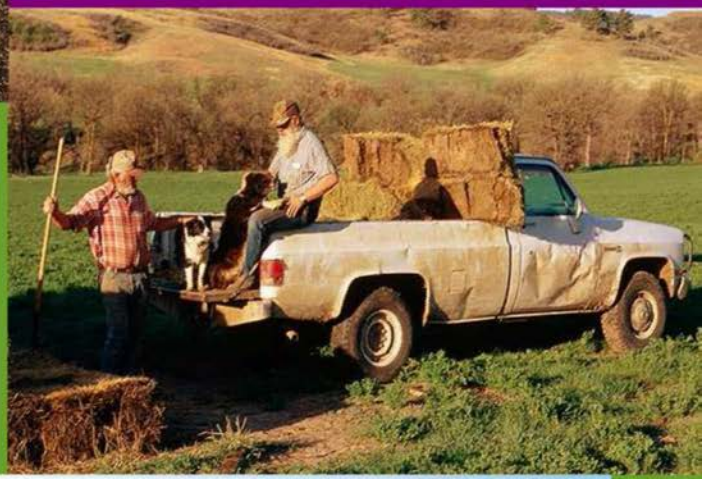
WYOMING CANCER PLAN 2016-2020



WYCC

WYOMING CANCER COALITION

Wyoming Cancer Control Plan

2016-2020

Published February, 2016
Matthew H. Mead, Governor

Thomas O. Forslund
Director, Wyoming Department of Health

For more information regarding the Wyoming Cancer Coalition (previously known as the Wyoming Comprehensive Cancer Control Consortium) and the Wyoming Cancer Control Plan, please contact:

Wyoming Integrated Cancer Services Program
Comprehensive Cancer Control
Wyoming Department of Health
6101 Yellowstone Road, Suite 510
Cheyenne, Wyoming 82002
307-777-8609
www.fightcancerwy.com

This publication was supported by Cooperative Agreement Grant # 5U58DP003896-03 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

MATTHEW H. MEAD
GOVERNOR

THE STATE OF WYOMING

STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

I am pleased to present Wyoming's Cancer Control Plan for 2016-2020 and thank the Wyoming Comprehensive Cancer Control Conso11ium (WCCCC) for preparing it. To create this plan for the future, the WCCCC looks to the work done under the past plan and recommends changes in focus and direction to address the burden of cancer in Wyoming and lessen its impact.

All individuals , all families, are touched some way, somehow, some time in their lives, by cancer. Whether it is a parent, a si bl ing, a child, a friend, a work colleague - everyone is affected. None of us are strangers to this disease , and we greatly appreciate the efforts of the WCCCC to plan strategically to reduce its reach and effects.

This plan is comprehensive. It provides our state with a complete program that outlines goals , objectives and strategies for prevention , early detection, diagnosis and treatment, quality of life, childhood cancer and advocacy. It provides a call to action for everyone to be involved. We can all do our part by helping ourselves and by helping others - for example , with healthier lifestyles, getting screened, supportive care and volunteering.

The work of many hands , not just a few is vital to lessening the impact of cancer in Wyoming. I thank the chairpersons of the WCCCC for their leadership. I thank the individuals and sponsoring organizations who have dedicated time and expertise to developing this plan. I thank all Wyomingites for joining the fight against cancer. Together, we can make a difference!

Matthew H. Mead
Governor

Call to Action

What can YOU do?

The Wyoming Cancer Control Plan aims to reduce the cancer burden in Wyoming and improve the lives of all Wyoming residents. The overall success of the plan will depend on the cooperation, collaboration, and resources of many stakeholders across the state.

Below are a few examples of what you can do to help work toward the goals presented in the Cancer Control Plan. Use these examples, and think of other actions you can take to reduce the burden of cancer in your community and throughout Wyoming.

If you are a hospital:

- Ensure that your cancer cases are reported in a timely manner.
- Collaborate to sponsor navigation and survivorship programs.
- Collaborate to sponsor community screening and education programs.
- Seek or maintain accreditation through American College of Surgeons, The Joint Commission, etc.
- Implement tobacco-free policies at your facility.

If you are a local health department:

- Support policy, environmental, and systems changes for cancer control.
- Provide cancer prevention awareness information and screening programs.
- Provide navigation services for clients.
- Collaborate in community prevention campaigns.
- Work with health care providers to promote screening programs and case reporting.
- Encourage participation in clinical trials.

If you are a community-based organization:

- Support policy, environmental, and systems changes for cancer control.
- Implement tobacco-free policies at your facility.
- Collaborate with local health departments or hospitals to host screening events.
- Provide navigation services for clients.
- Collaborate to provide community prevention programs.

If you are an employer:

- Seek or maintain ***CEO Cancer Gold Standard™*** accreditation.
- Implement tobacco-free policies and provide access to healthy foods.
- Encourage employees to increase physical activity.
- Collaborate with local health care providers to host screening events.
- Use reminders and incentive programs (e.g., paid time off for screenings, screenings in the workplace) to reduce barriers to screening.

We are NOT powerless against cancer! Each of us can do many things each day that will ultimately reduce both our own personal risk of cancer, and in turn, Wyoming's overall cancer burden. In the end, we will look back and say we had a part in "making cancer history for all Wyoming Residents!"

What can YOU do?

If you are a school/university:

- Include cancer prevention messages in health classes.
- Provide healthy foods in vending machines and cafeterias.
- Increase physical education requirements.
- Collaborate with local health departments or hospitals to host screening events.
- Make your entire campus a tobacco-free environment.

If you are a faith- based organization:

- Provide cancer prevention information to members.
- Learn how to provide healthy potlucks and meeting meals.
- Provide space for physical activity programs.
- Collaborate with local health departments or hospitals to host screening events.
- Encourage members to get cancer screening tests on time.

If you are a health care provider:

- Provide culturally relevant counseling, information, and referrals for cancer screening tests.
- Adhere to guidelines and best practices for prevention, treatment, and supportive care.
- Refer patients to smoking cessation, physical activity, and nutrition programs.
- Be sure your cancer cases are reported in a timely manner.
- Find out how to enroll patients in clinical trials.
- Make appropriate referrals to hospice for end-of-life care.

If you are a Wyoming Resident:

- Stop using tobacco products or never start.
- Eat more fruits and vegetables and maintain a healthy weight.
- Increase your daily physical activity.
- Know when to be screened and do it on schedule.
- Support comprehensive tobacco-free environment policies.
- If diagnosed, consider enrolling in a clinical trial.
- Show your support and care for those who are diagnosed.
- Volunteer with your hospital.

Table of Contents

***Sections containing the 2016-2020 Cancer Control Plan Goals, Objectives, and Action Items**

Table of Figures

Introduction

What is Comprehensive Cancer Control?

The Centers for Disease Control and Prevention (CDC) defines Comprehensive Cancer Control as *"a collaborative process through which a community pools resources to reduce the burden of cancer that results in risk reduction, early detection, better treatment, and enhanced survivorship."* Wyoming is dedicated to this approach and believes that this is the best way to successfully eliminate cancer. The CDC created the National Comprehensive Cancer Control Program (NCCCP) to help states, tribes, and territories form coalitions to conduct comprehensive cancer control. Wyoming received funding from the CDC in 2004 to establish Wyoming's Comprehensive Cancer Control Program and the Wyoming Comprehensive Cancer Control Consortium, which is now known as the Wyoming Cancer Coalition (WYCC).

What Is Wyoming's Cancer Control Plan?

Wyoming's Cancer Control Plan 2016–2020 (the Plan) is a strategic plan to reduce the cancer burden in our state. It is designed to provide guidance to individuals and organizations spanning a wide range of health and social disciplines that can play a role in controlling cancer. All aspects of the cancer continuum are addressed including: primary prevention, early detection and screening, treatment, quality of life and end-of-life care, as well as cross-cutting issues such as: advocacy, eliminating disparities, research, and surveillance. Wyoming's plan has been revised with updated goals and measurable objectives to support continued cancer control efforts through 2020. This Plan builds on the hard work and collaborations that have made comprehensive cancer control a success in Wyoming.

History of Wyoming's Comprehensive Cancer Control

Wyoming's Comprehensive Cancer Control (CCC) Services follows the national model developed in 1998 as an integrated and coordinated approach to cancer control. This table outlines some of the group's major milestones:

Date	Significant Event
July 2004	Receipt of CDC NCCCP Cooperative Agreement award.
September 2004	Creation of the Wyoming Comprehensive Cancer Control Consortium.
October 2005	Published Wyoming Cancer Control Plan 2006-2010.
March 2007	*Wyoming Cancer Control Act* signed into law by Governor Dave Freudenthal. This legislation provided $1.6 million for enhanced cancer screening efforts and laid the foundation for future efforts in comprehensive cancer control.
July 2007	Implementation of the County Cancer Resource Centers Program
June 2009	Wyoming Comprehensive Cancer Control Consortium awarded the C-Change 2009 Exemplary State Comprehensive Cancer Control Implementation Award. Wyoming House Representative Ken Esquibel, WYCC Co-Chair, was awarded the 2009 Exemplary State Elected Official Comprehensive Cancer Control Leadership Award.
July 2009	County Cancer Resource Centers were renamed to Wyoming Cancer Resource Services and "regionalized" around the existing county locations to provide cancer resource services statewide.
January 2010	Published Wyoming Cancer Control Plan 2010-2015.
August 2012	Camp Courage Wyoming was implemented and successfully held its first year of camp.
October 2012	Keith Howard was awarded the C-Change 2012 Exemplary Cancer Coalition Member Award.
January 2016	The Wyoming Comprehensive Cancer Control Consortium was renamed the Wyoming Cancer Coalition. The 2016-2020 Wyoming Cancer Control Plan is published.

Table 1 History of Wyoming's Comprehensive Cancer Control

The Wyoming Cancer Coalition

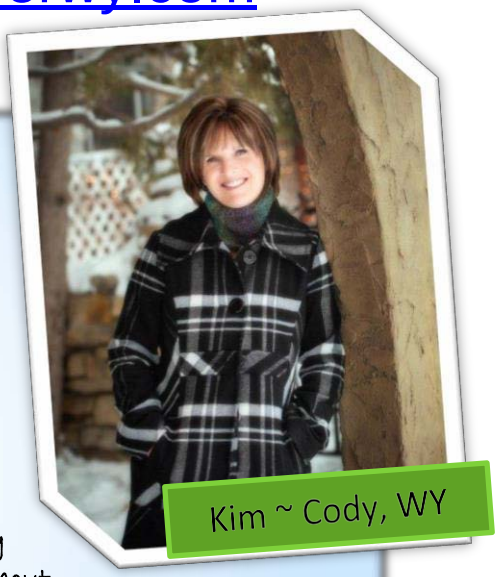
The Mission

The mission of the Wyoming Cancer Coalition (WYCC) is to develop and implement a collaborative and comprehensive approach to address cancer prevention, early detection, access to health care, diagnosis and treatment, and quality of life services to lessen the impact of cancer in Wyoming. It is through this mission that the burden of cancer in Wyoming is addressed.

The **Wyoming Cancer Coalition** (WYCC) is a group of over 300 Wyoming residents and supporters working together to promote and implement the Wyoming Cancer Control Plan by coordinating efforts throughout the state. The Coalition focuses on reducing cancer disparities, increasing awareness of the cancer burden in the state, and improving outcomes for cancer patients. Coalition members are: policy makers, advocates, individuals, businesses, cancer survivors, caregivers, family members, health care providers, hospitals, insurers, non-profit and volunteer organizations, the public health community, state and local government, and others committed to cancer prevention and control.

WYCC WYOMING CANCER COALITION

www.fightcancerwy.com



Kim ~ Cody, WY

I am a wife, a mother, and a Cancer Survivor. At the age of 42, five months after my annual mammogram, I found a small lump underneath my right breast. I made an appointment with my physician who, not being concerned, told me to watch it for a month and if it was still there to make an appointment for an ultrasound. I wasn't worried as I have no family history. Luckily I followed up and on September 17, 2013 at 1:50 p.m. in the afternoon (yes, I remember the exact moment) I was diagnosed with an extremely aggressive and fast growing type of breast cancer. Two years later, after numerous surgeries and chemotherapy, I am alive and I am Cancer Free. I feel very strongly that my persistence and acting as my own advocate saved my life. If not for the wonderful people who preach about early detection, screenings and what to do if something does not feel right, I might not be here today. I was also fortunate to have care givers who understand the toll that cancer can have on your psyche and suggested I apply for the Wyoming *Casting for Recovery* retreat. During the summer of 2014, I was one of 14 lucky ladies to experience this life changing weekend long event. I still smile every time I think of my "sisters," the "Ladies in Waders!"

Wyoming Geography & Demographics

Wyoming covers more than 97,000 square miles, making it the tenth largest state in the US, while concurrently being one of the nation's least populated states, with only 584,153 persons claiming residency, [1] giving it an average of 5.8 people per square mile. [2] Of Wyoming's 23 counties, 17 are designated as "frontier" and four counties are designated as "rural," with 47 percent of Wyoming's population living in frontier designated areas.

Wyoming comes from the Dakota Indian word "wscheweamiing" meaning "at the big flats" or "large plains." Wide-open grasslands, scenic rivers, and spectacular mountains dominate the Wyoming landscape from the Grand Teton to Yellowstone National Park, from the Shoshone National Forest to the eastern Great Plains.

According to the US Census Bureau, 84.1 percent of the state's population is white only (not Hispanic or Latino), 9.8 percent of the population claim Hispanic/Latino heritage, 2.7 percent is American Indian, 1.6 percent African American/Black, with the remaining 1.8 percent identified as other or mixed-race. [3] Because of the low racial/ethnic diversity in Wyoming, the disparities that are most often identified relative to cancer diagnoses and outcomes are associated with socio-economic and access issues more so than race/ethnicity. Wyoming's unemployment rate of 4.3 percent is lower than the national rate of 6.2 percent, and the median household income is $58,752.00. [4] Wyoming's median age is 36, with 23.6 percent of the population being under 18 years of age and 13.5 percent of the population being 65 or older. [5]

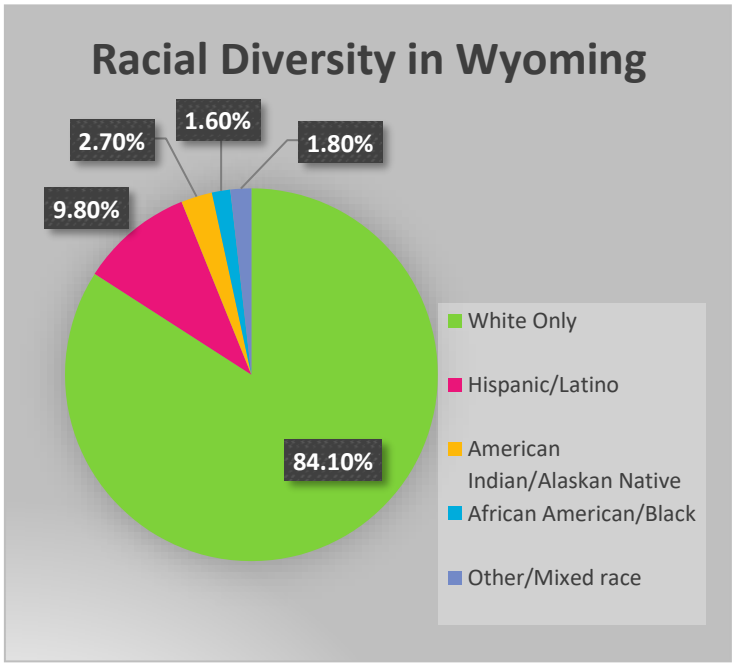


Chart 1 Racial Diversity in Wyoming

There are 26 hospitals in Wyoming, 23 of which are located in rural or frontier areas. [6] The state has 16 hospitals designated as Critical Access Hospitals, [7] 16 Rural Health Clinics, [8] 5 Federally Qualified Health Centers that provide services at 13 sites statewide, [9] and 2 Veterans Affairs Medical Centers. [10]

Unique Challenges of Wyoming

The term "Frontier" is used to describe the most remote and sparsely populated places, with residents far from healthcare, schools, grocery stores, and other necessities. It is often defined as having a population density of six or fewer people per square mile.

FRONTIER:

Communities in frontier areas face additional challenges in accessing healthcare and necessary services, even greater than those faced by other rural communities. The isolation and distances that classify an area as frontier result in long trips to attend school, shop for groceries, visit health care providers, and reach other basic services. Public transportation options are often limited or unavailable, making access to needed services even more difficult for low-income households, the elderly, and people with disabilities.

In Wyoming, many of these frontier areas face seasonal travel barriers that make it difficult or impossible to access services during the winter months. Some Wyoming roads close for the season, while others become obstructed by blowing snow and ice, leading to longer travel times for those who are willing to risk the drive. These barriers to travel can be particularly problematic when it comes to emergency transportation, but can also lead to increased risks for people seeking routine exams, ongoing care for chronic conditions, and other necessary services. [11]

HEALTHCARE PROFESSIONAL SHORTAGES:

In many frontier areas there is not only limited access to health care, but often there is also a shortage of health care professionals and specialists. Of the state's 23 counties, 22 have some form of primary health care professional shortages and 14 counties have at least one medically underserved area or medically underserved population designation. [12] To further compound the problem, low population in these areas makes it difficult to provide competitive wages and amenities that are often offered to physicians and nurses in larger metropolitan areas. [13]

For instance, there are currently nine practicing gastrointestinal specialists in the state, all of whom reside in Laramie county or Natrona county (the two areas of the state that are not designated as frontier or rural). Although some of these healthcare professionals provide outreach in other parts of the state, the lack of permanent specialists proves to be a significant barrier to care and appropriate screening.

Frontier communities that have hospitals may experience higher costs for care due to the lower volume of patients served. Some areas must cope with seasonal variations in healthcare needs, such as population surges with tourists and seasonal workers. The limited health resources available are often needed to care for the increased population, further restricting resources available for local residents. [11]

HEALTH INSURANCE:

In 2014, approximately 10 percent of the residential population in Wyoming was not covered by health insurance, a decrease from the previous year's 16 percent. In Wyoming's Private Sector, 61 percent of employers offered health insurance, an increase from 53 percent in 2013. Estimates from 2013 indicate a poverty rate of 11.2 percent in rural Wyoming, compared to 10.2 percent in more urban areas of the state, which is lower than the national rate of 14.5 percent. [14]

HEALTH DISPARITIES:

A *health disparity* is best described as a type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have regularly experienced obstacles to health based on a characteristics historically linked to discrimination or exclusion, for example race or ethnicity, religion, socioeconomic status, gender, sexual orientation, age, mental health, or disability.

Wyoming is one of the least racially diverse states in the United States, reporting 84.1 percent of the population as white only, higher than the national average of 63.7 percent. The American Indian population in Wyoming is also higher than the national average at 2.7 percent (national average is 1.2 percent). [1]

On the Wind River Indian Reservation, there are several healthcare resources available to tribal members. There are two outpatient clinics, and nearby hospitals in Lander and Riverton. The outpatient clinics are staffed with multiple healthcare professionals, providing specialized and primary care to their clients. The clinics also host a number of specialty programs such as orthopedic, podiatry, obstetrics, audiology, women's health, nephrology, and cardiopulmonary services. [15]

The Wind River Indian Reservation located in southwestern Wyoming near Lander, is the third largest reservation in the US, with an area of about 3,500 square miles. It is home to over 3,900 Eastern Shoshone and 8,600 Northern Arapahoe tribal members.

A review of surveillance data from the Wyoming Cancer Surveillance Program shows that cancer incidence rates are not significantly disparate among racial/ethnic minorities in Wyoming. In fact, incidence of some cancer types are significantly lower in Wyoming's minorities than among the white population. While rates among minorities are higher in some cases, they are not statistically different from the white population rate.

CANCER INCIDENCE RATES 2009 – 2013 BY RACE

CANCER SITE	WHITE	AMERICAN INDIAN	BLACK	OTHER
ALL SITES	419.1 / 100,000	252.6 / 100,000*	157.2 / 100,000*	196.7 / 100,000*
BREAST (FEMALE)	111.5 / 100,000	54.0 / 100,000*	37.2 / 100,000*	55.1 / 100,000*
COLORECTAL	37.6 / 100,000	38.3 / 100,000	19.4 / 100,000*	33.9 / 100,000
LUNG	48.2 / 100,000	16.3 / 100,000*	No Cases	25.2 / 100,000*
PROSTATE	117.9 / 100,000	42.5/ 100,000*	42.0 / 100,000*	

*Significantly lower than the white population rate.

Table 2 Cancer Incidence Rates 2009-2016 by Race

In spite of lower cancer incidence rates, the minority populations of Wyoming face unique challenges related to health care services. High insurance rates, an average income of less than median, and more single-parent households, coupled with limited local access to specialized health care providers can make receiving appropriate screening and care difficult.

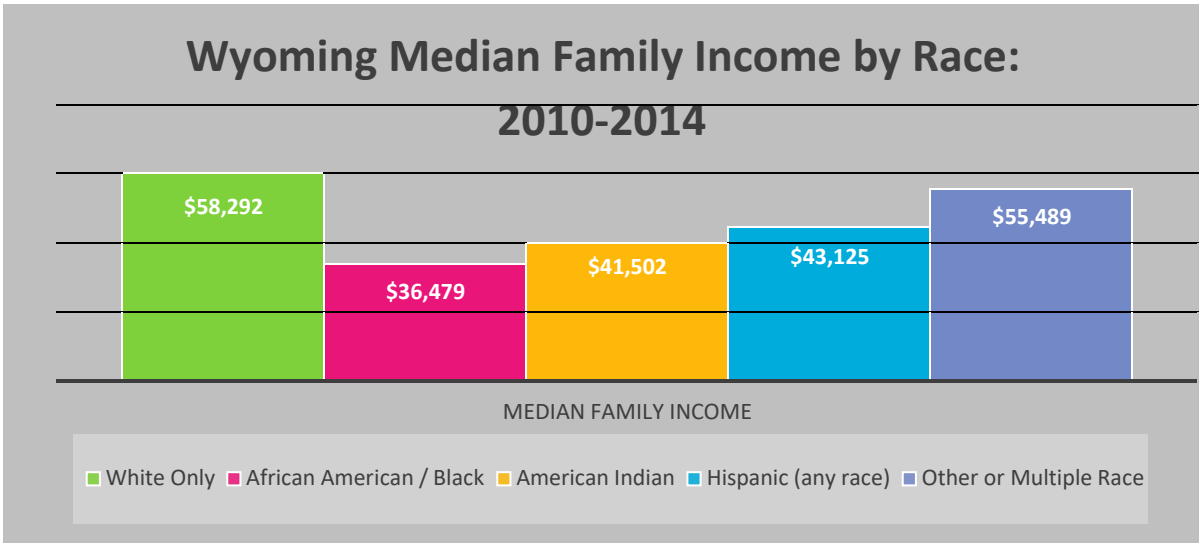


Chart 2 Wyoming Median Family Income by Race 2010-2014

Wyoming's minorities have significant cancer risk factors. The Wyoming Behavioral Risk Factor Surveillance System (BRFSS) collects data specific to five cancer risk factors:

- current tobacco use
- being overweight (Body Mass Index greater than 25)
- not meeting recommendations for physical activity (150 minutes of moderate to vigorous physical activity per week)
- heavy drinking (men: 60 or more drinks in the last month; women: 30 or more drinks in the last month)
- eating fruits and vegetables less than five times per day

Almost half of the non-white population in Wyoming has three or more of these five risk factors. [16]

Incorporated throughout the 2016-2020 Cancer Plan, you will find objectives and action steps aimed at reducing the barriers and effects of the unique challenges identified in this section, as well as measures focused on improved access to appropriate healthcare, advocacy for policy, systems, and environmental (PSE) changes to support healthier living choices and reduce risk for all residents of Wyoming.

Healthy Living

Rural communities are at higher risk for substance abuse, suicide, motor vehicle fatalities, obesity, cigarette smoking, and death from unintentional injury. [11]

Research suggests that only 5 to 10 percent of cancers are hereditary. [17] That means the non-inherited causes of cancer - lifestyle choices, the foods we eat, and physical activity levels – have a direct impact on overall cancer risk. If preventing cancer was as simple as eating a certain food or doing a certain exercise, this would be a much shorter conversation.

This much is clear:

- You have a higher risk of developing cancer if you are overweight. Staying at a healthy body weight reduces your risk of cancer.
- Eating well – lots of veggies, fruit, and fiber, and little fat and sugar – will help prevent cancer and keep a healthy body weight.
- Regular physical activity helps protect against cancer and is another great way to maintain a healthy body weight, which reduces your risk of cancer.
- Eating processed meat increases your risk of cancer.
- Alcohol consumption increases your risk for multiple chronic problems, including cancer.
- Smoking cigarettes or using smokeless tobacco products increases your risk for developing cancer (this is discussed in greater detail in the prevention section of this plan).[18]

FOOD FOR THOUGHT: PHYSICAL ACTIVITY

About one-third of all cancers can be prevented by eating well, being active, and maintaining a healthy body weight. You can lower your risk for cancer if you move more, stay lean, and eat plenty of vegetables and fruit, as well as other plant foods such as whole grains and beans.

People who are overweight or obese are at greater risk for many cancers, including breast, colon and rectum, esophagus, kidney, pancreas and uterus. Including at least 150 minutes of moderate activity each week can make a difference.

Physical activity is also one of the best ways to get to and maintain a healthy weight.

According to the National Cancer Institute, over fifty studies have found that increasing physical activity can reduce your risk of colorectal cancer by 30 to 40 percent. Sixty studies on physical activity and breast cancer have also shown risk reductions between 20 and 80 percent. About 20 other studies have shown that increasing physical activity can reduce a woman's risk of endometrial cancer by 20 to 40 percent. While not as well studied, there is some evidence that shows that physical activity can also reduce a person's risk of lung cancer and prostate cancer. [19]

FOOD FOR THOUGHT: HEALTHY EATING

While there is no one single food that you can eat to prevent or fight cancer, a balanced diet filled with vegetables, fruits, soy, nuts, whole grains, and beans may help lower your risk for many types of cancer.

Adding "cancer protective foods" to one's diet helps decrease cancer risk. Cancer protective foods are low in calorie density (high in fiber and low in fats and sugars). Examples of "cancer protective foods" include whole grains, broccoli, carrots, leafy greens, green tea, grapes, berries, cherries, soy products, cauliflower, and apricots. These plant-based foods are high in nutrients that boost your immune system. Fruits and vegetables are a great source of antioxidants such as beta-carotene, Vitamin C, Vitamin D, and selenium. These powerful vitamins help the cells in your body function properly. The less processed these foods are, the better.

Limiting consumption of foods that increase risk (such as red meats) and avoiding processed meats (bologna, bacon, ham, hot dogs) can further decrease cancer risk. [20]

FOOD FOR THOUGHT: ALCOHOL CONSUMPTION

There is increasing evidence to suggest that alcohol intake affects a person's risk for cancer, specifically of the mouth, pharynx, larynx and esophagus, breast, colon, rectal, and liver. Even small amounts of alcohol can increase your risk for certain cancers. [21]

Heavier drinking raises the risk for many chronic problems, including cancer, heart disease, high blood pressure, stroke, osteoporosis, inflammation of the pancreas, damage to the brain, liver cirrhosis, accidents, violence and suicide. Alcohol can also cause birth defects. If you are pregnant or may become pregnant, do not drink any alcohol. A woman's risk for breast cancer increases with greater alcohol consumption. Women at high risk for breast cancer should consider not drinking. [22]

We encourage the people of Wyoming to take charge of their health by

- making healthier lifestyle, fitness and nutrition choices, and
- visiting with their health care provider regularly about:
    - Age-appropriate screenings
    - Fitness and nutrition
    - Any physical changes or health concerns

Wyoming Cancer Control Plan

Definitions

Goal:

A comprehensive declaration of purpose used to guide planning, and to identify the eventual desired outcome of the *objectives* and *action steps* documented within this plan. These are few in number and emphasize the highest priorities throughout the cancer control continuum.

Objective:

A time-oriented and measurable statement that provides a specific focus in support of a *goal.* Objectives have quantifiable milestones which include baseline data and targets where possible.

Action Steps:

Action oriented strategies and evidence-based (where possible) activities that have the potential to significantly and positively impact the outcome of the documented *objectives*, thereby supporting the *goals* of the plan. The action steps listed in this plan do not comprise a complete list of all possible strategic actions. Rather they act as examples of recognized approaches that may be used to affect an outcome.

Goals

across the cancer care continuum

Prevent cancer from occurring

Detect cancer at its earliest stages

Diagnose and Treat all patients using the most effective and quality care

Enhance survivorship and quality of life for every person affected by cancer

Provide the highest quality of cancer care and support for childhood cancer patients and their families

Prevention

In 2015, an estimated 589,430 Americans were expected to die of cancer. This is almost 1,600 people a day. Cancer is the second most common cause of death in the United States and accounts for nearly one of every four deaths. [23] In 2014, cancer accounted for approximately 990 deaths in Wyoming. [24]

Cancer prevention is action taken to lower a person's risk of getting cancer. In 2015, approximately 1.6 million people were diagnosed with cancer in the United States. [23] The goal of prevention is to keep cancer from developing through healthy lifestyle choices and avoiding contact with known cancer-causing substances. It is not possible to know exactly why one person develops cancer and another does not, but there are ways to reduce the potential for certain cancers to develop over a person's lifetime. By avoiding certain behaviors, taking action to improve your health, and preventing exposure to cancer-causing situations and substances, a person can reduce his or her risk for more than 15 kinds of cancer.

Tobacco

In the United States, tobacco use accounts for nearly one in five deaths, roughly 480,000 a year. It is responsible for 87 percent of lung cancer deaths in men and 70 percent in women. Smokeless tobacco products **should not** be considered a safe substitute for tobacco cessation. These products can cause oral and pancreatic cancers, precancerous lesions of the mouth, gum recession, bone loss around the teeth and tooth staining. Tobacco use is linked with increased risk of more than 15 types of cancer including: mouth, lips, nose and sinuses, larynx (voice box), pharynx (throat), esophagus (swallowing tube), stomach, pancreas, kidney, bladder, uterus, cervix, colon/rectum, ovary (mucinous), and acute myeloid leukemia.

Exposure to secondhand smoke significantly increases a non-smoker's risk of developing lung and other cancers in addition to other health problems such as decreased respiratory function and other respiratory diseases, eye and nasal irritation, heart disease and stroke. Pregnant women and children are particularly vulnerable to the health risks of exposure to secondhand smoke. [25]

Based on data from the Wyoming Cancer Registry, in 2014 there were 254 cases and 226 deaths attributed to lung cancer. Wyoming Cancer Registry data also showed 112 cases of esophageal, laryngeal, nasal and oral cancers diagnosed in 2014 in Wyoming residents with 42 deaths attributed to cancers of the nasal, throat and oral cavities.

Radon

Radon is a colorless, odorless radioactive soil gas that comes from the decay (breakdown) of radioactive elements found in the earth's crust. It is inert, meaning that it is drawn by pressure differentials in the ground, and can be drawn into the air and water sources. Radon can build up in enclosed spaces, such as homes and basements, and if breathed over a prolonged period can cause damage to cells in the lungs. The EPA estimates that approximately 22,000 people die each year from radon-induced lung cancer, and that between 10 and 14 percent of all lung cancers can be attributed to radon exposure. The only way to know if there are high levels of radon in a home is to test for it. [26]

According to the 2010 Wyoming BRFSS, only 33.1 percent of Wyoming adults reported that their home had been tested for radon. [16]

Radon levels can be reduced by: improving the ventilation in the home, avoiding the passage of radon from the basement into living rooms, increasing under-floor ventilation, sealing floors and walls, installing a positive pressurization or ventilation system, or installing a radon sump system in the basement.

Skin Cancer Prevention

In 2013, there were 125 new melanoma cases identified in Wyoming, and 15 deaths attributed to this form of skin cancer. [24] Melanoma accounts for less than 2 percent of cases nationwide, but is more serious than other types of skin cancer as it more readily metastasizes to other parts of the body.

The primary risk factors for melanoma include a personal or family history of melanoma and the presence of atypical or numerous moles (more than 50). [27] Other risk factors for all types of skin cancer include sun sensitivity (sun burning easily, difficulty tanning, natural blond or red hair color), a history of excessive sun exposure (including sunburns and use of tanning booths), diseases that suppress the immune system, a past history of basal cell or squamous cell skin cancers, and occupational exposure to such things as coal tar, pitch, creosote, arsenic compounds, or radiation. [28]

To help reduce the risk for skin cancer, protect skin from intense sun exposure with sunscreen that has a sun protection factor (SPF) of 30 or higher and clothing, and avoid sunbathing. Wear sunglasses to protect the skin around the eyes. Because severe sunburns in childhood may greatly increase the risk of melanoma later in life, children should be protected from the sun. Avoid tanning beds and sun lamps which provide an additional source of ultraviolet (UV) radiation. [29]

Cervical Cancer / HPV

Nearly twenty years ago, experts discovered a relationship between the human papillomavirus (HPV) and cervical cancer. There are more than 100 types of HPV. Many sexually active men and women will contract it at some point in their life, but because the infection does not cause symptoms, most will never know.

Certain types of HPV can lead to abnormal cell changes and cause cervical cancers. Researchers say that virtually all cervical cancers (more than 99 percent) are caused by these high-risk HPV viruses. [30]

It is predicted that almost 13,000 women will be diagnosed with cervical cancer and roughly 4,000 will die of the disease this year in the United States. [30]

There are three vaccines for HPV currently being used in the U.S. These vaccines provide strong protection against new HPV infections but do not treat already established HPV infections. [31] Therefore, it is recommended that the vaccine be administered to youth before they become sexually active. Additional recommendations include correct and consistent condom use for sexually active individuals and regular pap screenings for women age 21 and older. [32]

Goal 1

Prevent Cancer from Occurring

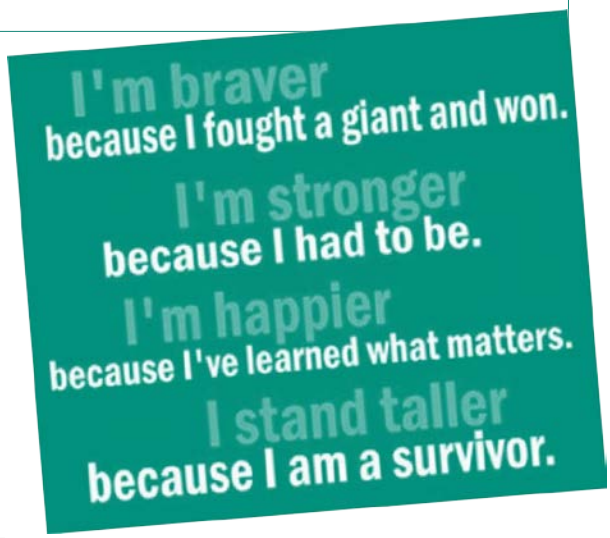
Objective 1.1a: Tobacco Use—Reduce tobacco use among Wyoming Adults

Objective 1.1b: Tobacco Use—Reduce the number of Wyoming youth reporting tobacco use (cigarette or smokeless) during the previous 12-month period.

Action Steps

- Advocate for the increase of tobacco tax by at least one dollar.
- Work with key stakeholders and decision-makers to pass comprehensive smoke-free laws (including bars, restaurants, and private clubs) in five (5) Wyoming communities.
- Encourage Wyoming legislators and lawmakers to increase state tobacco program funding to meet the CDC's best practices.
- Work with the Wyoming Tobacco Prevention Program and the Prevention Management Organization to support adequate media campaigns focusing on reducing tobacco use statewide.

Measures	Baseline	2020 Target
Adults who report using cigarettes or smokeless tobacco	26%	23%
High school students who report smoking during the previous 30 day period	17%	15%



PREVENTION

Prevent Cancer from Occurring

Goal 1

Objective 1.2 Radon: Increase the number of Wyoming homes being tested for radon each year.

Action Steps

- ➔ Provide low-cost test kits to Wyoming residents, real estate agents, and radon professionals.
- ➔ Increase access to radon specific trainings for contractors, real estate agents, and residents.
- ➔ Increase awareness about radon as an avoidable environmental cancer risk.
- ➔ Research potential synergies between tobacco and radon as it affects cancer risk.
- ➔ Research policy, system, and environmental change strategies that could be implemented in Wyoming to support the National Radon Action Plan initiative of reducing radon risk in 5 million homes nationwide by 2020.

Measures	Baseline	2020 Target
Number of homes tested for radon	850	900

My Grandmother was the strongest example of what a good person should be. Doris provided for and raised six kids in Red Lodge Montana. She would later raise her grandson, me. Doris set the example for what you could achieve through honest hard work and to appreciate everything you earned. In her final days it was I that provided hospice care. I watched the strongest most caring woman I had ever known fade piece by piece. Doris insisted that she cooked breakfast for me every morning I was with her. She refused to let me help cook because she wanted to do it for me. She rarely let me do dishes because I was not the one who made them dirty. In the final weeks I called my uncle every morning to let him know I was heading to work and that Doris had not come down for breakfast. Doris's only wish was to die at home. I honored that and stayed with her until the end. I hate cancer, it stole the person I have loved the most and that had the greatest influence in my life. ~ David Koch, Cody WY

PREVENTION

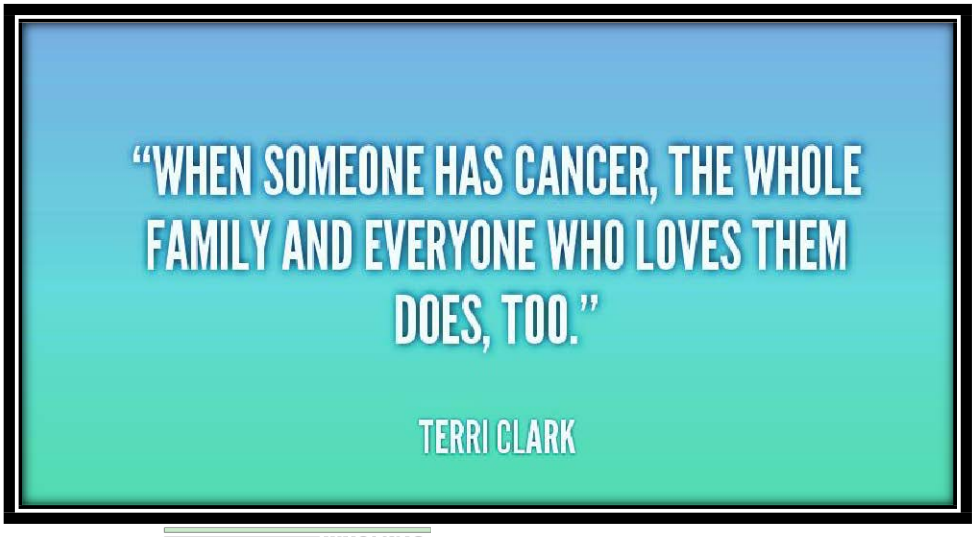
Prevent Cancer from Occurring

Objective 1.3 Skin Cancer: Reduce the incidence of Melanoma in Wyoming Residents.

Action Steps

- Educate Wyoming residents on key sun safety measures to decrease the occurrence of sunburns.
- Implement policy, systems, and environmental change, and other evidence-based strategies that increase skin cancer awareness and ultraviolet radiation safety behaviors by:
  - Advancing policies that minimize or eliminate the use of tanning beds.
  - Increasing skin cancer education for all Wyoming residents.
  - Implementing sun protection policies and environmental changes in settings where outdoor activities occur, such as park and recreation centers, schools, daycares, and worksites.

Measures	Baseline	2020 Target
Incidence of melanoma	19.39/ 100,000	17.5/ 100,000



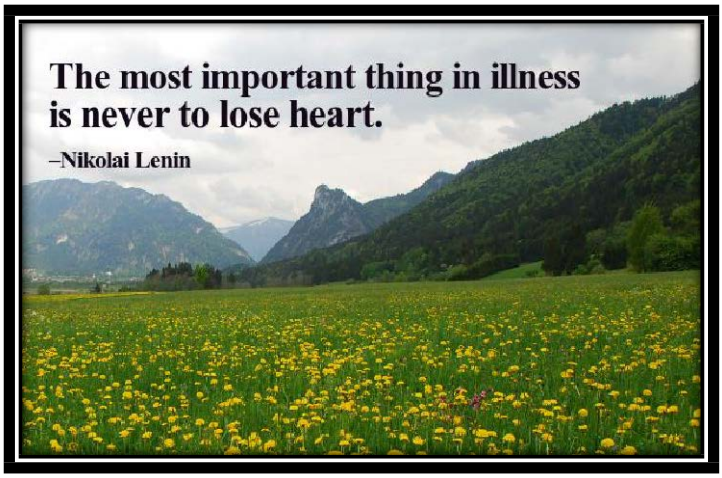
Objective 1.4 Cervical Cancer: Increase the multiple-dose HPV vaccine series completion rate among Wyoming youth and young adults ages 13-26.

Action Steps

- Provide education to youth, parents, and providers about the connection between Human Papilloma Virus and cervical cancer, and the importance of immunization at an early age.

- Provide resources to providers to encourage conversations with adolescents and parents about teen health, sexual health, and necessary immunizations by:
  - Encouraging healthcare providers to send reminder messages to adolescents and/or parents regarding required and recommended immunizations, including the HPV vaccine.
  - Encouraging providers to promote scheduling of immunizations during other screening and wellness events.

Measures	Baseline	2020 Target
Average percent of 13-26 year olds that have completed the multiple-dose HPV vaccine series	30%	35%



Early Detection

Early detection of cancer involves identifying disease as early as possible, often before symptoms develop, and treating the disease immediately thereafter. Screening for certain cancers can increase the probability of effective, timely, and cost effective treatment.

Breast Cancer

According to the 2012 Wyoming Behavioral Risk Factor Surveillance System (BRFSS), only 61.9 percent of Wyoming women over the age of 40 had received a mammogram within the last two years, which is one of the lowest percentages for any state in the nation. [16] Mammography can detect breast cancer at an early stage, when treatment is more effective and a cure is more likely. Numerous studies have shown that early detection saves lives and increases treatment options.

The WYCC supports regularly scheduled mammography for women ages 50-75 years. All women are encouraged to visit with their provider about clinical and self breast examinations.

Cervical Cancer

With the advent of Pap testing in the last 40 years, the number of cervical cancers in Wyoming and the United States has dramatically decreased. According to the 2012 Wyoming BRFSS, only 73.4 percent of adult Wyoming women have regular Pap tests, one of the lowest rates in the nation. [16] The WYCC supports cervical cancer screening beginning within three years of onset of sexual activity or age 21, whichever comes first. Screening should be done every three years based on provider recommendations for women 21 and older.

Colorectal Cancer

The WYCC supports colorectal cancer screening beginning at age 50 with a colonoscopy every ten years. There are several recognized screening options that can be utilized in coordination with colonoscopies, such as immunochemical fecal occult blood testing (iFobt is a test that detects blood in stool), which should be done annually beginning at age 50. Rescreening more frequently than every ten years may be recommended based on results of first colonoscopy. Individuals are encouraged to talk with their provider about screening before age 50 if they have a family history of colon cancer. African Americans should begin screening at age 45.

Detect Cancer at its Earliest Stages

Goal 2

Objective 2.1 Breast Cancer: Reduce the percentage of breast cancer cases diagnosed as late-stage.

Action Steps

- Educate healthcare providers and their staff about the low and no cost breast cancer screening resources in Wyoming.
- Use evidence based interventions to provide education about breast cancer and screening guidelines, and raise awareness of low and no cost screening programs in Wyoming.
- Identify and work with women ages 50 and older to remove barriers to self-referral in obtaining annual mammography screening.
- Implement strategies such as direct to consumer advertising and mobile mammography services to reach underserved individuals.
- Research policies that would allow work-time release to obtain cancer-related screening services.
- Increase screening for breast cancer through public health funded programs for low income and underinsured/uninsured Wyoming residents.
- Utilize targeted education, culturally trained educators, and evidence-based strategies to promote breast cancer screenings among Wyoming's high risk and disparate populations.

Measures	Baseline	2020 Target
Percent of breast cancer cases diagnosed as late stage.	26%	21%

EARLY DETECTION

Detect Cancer at its Earliest Stages

Objective 2.2 Cervical Cancer: Reduce the percentage of cervical cancer cases diagnosed as late-stage.

Action Steps

- Educate healthcare providers and their staff about the low and no cost cervical cancer screening resources in Wyoming.
- Use evidence-based interventions to provide education about cervical cancer and screening guidelines, and raise awareness of low and no cost screening programs in Wyoming.
- Research policies that allow work-time release to obtain cancer-screening services.
- Increase screening for cervical cancer through public health funded programs for low income and under or uninsured Wyoming residents.
- Utilize targeted education, culturally trained educators, and evidence-based strategies to promote cervical cancer screenings among Wyoming's high risk and disparate populations.

Measures	Baseline	2020 Target
Percent of cervical cancer cases diagnosed as late stage.	40%	30%

Detect Cancer at its Earliest Stages

Goal 2

Objective 2.3 Colorectal Cancer: Reduce the incidence of colorectal cancer cases in Wyoming.

Action Steps

- Provide targeted educational information to all Wyoming residents regarding colorectal cancer screening recommendations.
- Conduct targeted outreach using client reminders and small media campaigns to increase demand for screening among groups that experience high mortality rates from colorectal cancer.
- Increase colorectal cancer screenings through public health funded programs for low income, under and uninsured Wyoming residents.
- Identify ways to reduce financial barriers to colorectal cancer screening through policy, system, and environmental change.
- Increase access to colorectal cancer screenings for Wyoming residents through the use and distribution of immunochemical Fecal Occult Blood tests (iFOBt), or stool testing kits, to safety net healthcare providers in the state.
    - Support follow-up colonoscopy screening for all positive iFOBt.
- Utilize targeted education, culturally trained educators, and evidence-based strategies to promote colorectal cancer screenings among Wyoming's high risk and disparate populations.

Measures	Baseline	2020 Target
Incidence of colorectal cancer	32.01 /100,000	28 /100,000

EARLY DETECTION

Goal 2

Detect Cancer at its Earliest Stages

Objective 2.4 Prostate Cancer: Increase the number of targeted education materials and resources available highlighting shared decision making for prostate cancer screening and treatment to Wyoming men and health care providers.

Action Steps

- Provide targeted educational information that incorporates the principles of informed decision making to men in Wyoming.
- Provide information to prostate cancer patients and their families via the Wyoming Prostate Cancer Toolkit Resource.

Measures	Baseline	2020 Target
Number of Education materials provided	5	10

There are dates that have great meaning to our lives. Your wedding day, the birth of your children, and the day you are told you have cancer. October 10th, 2003 is that day for me. I was sitting in the doctor's exam room hearing that I had Prostate Cancer. I was 43 years old and had a cancer that a man who is older than me gets. The fear of what was going to happen to me? How would my family get along without me being there? I am lucky. My cancer was caught early. I had great doctors and surgeons that treated me. I have a fantastic family support group. I urge everyone to be educated about your health. Now when October 10th rolls around I celebrate being cancer free.

Robert Johnson
Cheyenne, WY

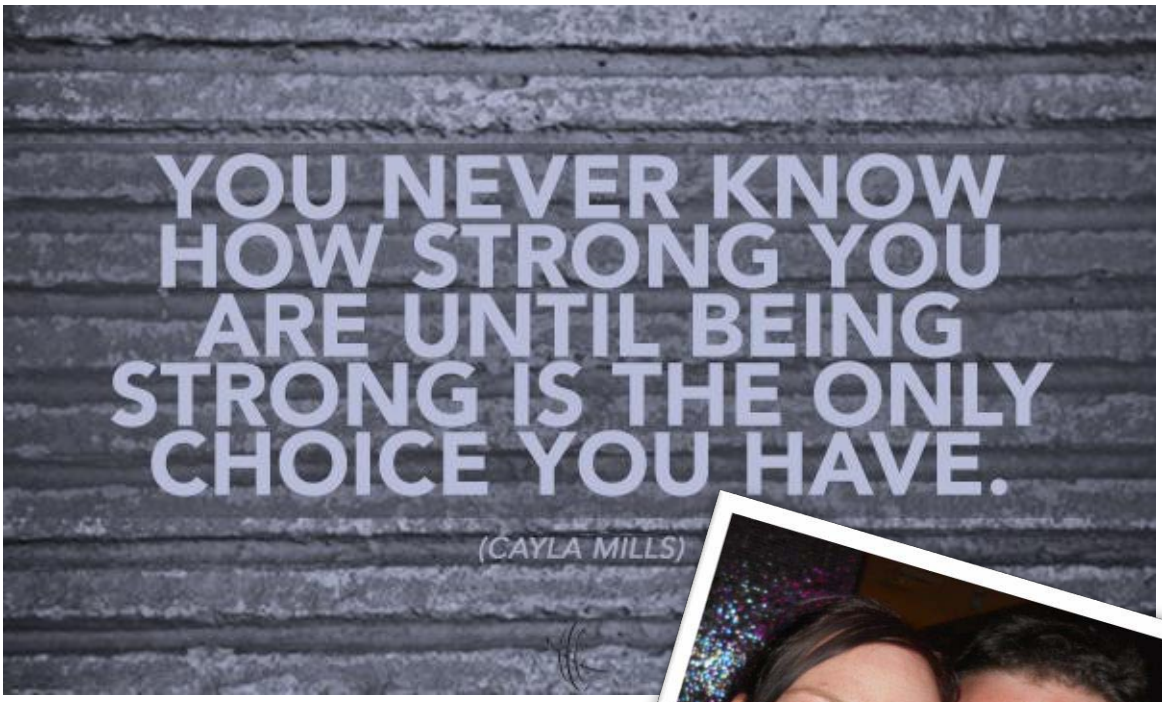
EARLY DETECTION

Diagnosis and Treatment

Approaches to diagnosis and treatment of cancer are complex. In Wyoming, additional complications continue to exist around several key issues: the lack of access to diagnostic and treatment facilities located near the patients' homes, lack of medical sub-specialists and specialized methods for diagnosis and treatment, transportation and travel costs, as well as cultural barriers.

With continuing advancements in science and technology related to cancer diagnosis and treatment, the opportunities to engage general health care professionals in the process of providing some of the much-needed cancer treatment is greatly expanding. Due to the relatively sparse population in Wyoming, and thereby the statistically low patient numbers, it is difficult to recruit specialists to support our existing physicians and health care professionals in providing enhanced cancer care.

Clinical trials (research studies in which people help doctors find ways to improve health and cancer care) also offer promising solutions to the challenges of cancer treatment. Clinical trials offer a high-quality cancer care option to patients who qualify and an opportunity to be among the first to benefit if a new approach is proven to work. Clinical trials should not be seen as a last resort or last option for treatment. It is one of the last stages of a long and careful cancer research process.



Dawn Scott
Cody, WY

Goal 3

Diagnose and Treat All Patients using the Most Effective and Quality Care

Objective 3.1: Increase the number of materials developed to educate Wyoming residents and health care providers about the resources and information available through the WYCC website (fightcancerwy.com).

Action Steps

- Develop and implement a marketing and distribution plan to increase knowledge about the range of educational opportunities and information on the WYCC website.
- Design focused population specific materials and resources to increase knowledge about the WYCC website.
  - Populations include: cancer patients and survivors; families; cancer centers; health care providers; existing and new partners; volunteers.
- Monitor potential impact of marketing plan implementation using data collected through the WYCC website.

Measures	Baseline	2020 Target
Number of Educational materials provided	5	10

Diagnose and Treat All Patients using the Most Effective and Quality Care

Goal 3

Objective 3.2: Increase the number of educational and informational resources about clinical trials made available on the WYCC website (fightcancerwy.com).

Action Steps

- Identify and share links for existing clinical trial educational resources available through the American Cancer Society (ACS) and other national, regional, and state partners and providers.
- Research to identify or develop culturally-competent, informed, and shared decision-making tools relating to clinical trials.
- Develop and implement a process to maintain timely and accurate information provided through the website. Monitor potential impact of the objective using data collected through the WYCC website.

My Adopted Mom, who lives in Lovell but receives her treatment in Cody, was diagnosed in July of 2014. She had been complaining of abdominal pain on her side for over a year, her blood work had been showing different levels that had been considered very low for over ten years and were overlooked; levels that could have pointed to the problem had someone thought to look! I am not blaming anyone. However, I think to help people get Diagnosed EARLIER, we need better training on what to look for when looking at someone's blood tests and other tests that could lead them to the underlying causes. My mom is at the end of her treatment and her life; I can't explain just how difficult it is to watch someone die from cancer. It is heart wrenching, as I know so many other people have had to witness. Cancer is an Evil Disease. This has been a very hard year for me personally. I lost my Mom to a heart attack caused by complications from Diabetes. I lost my Uncle to COPD, both in March just days away from each other and now I am losing my other Mom. Loss is a part of life, but there is a lot of loss that we can prevent and we should prevent. Cancer is one of them; we can take care of so many of the Cancers if caught early.
Jim-Cody, WY

Measures	Baseline	2020 Target
Number of resources available on the WYCC Website	0	3

DIAGNOSIS & TREATMENT

Goal 3

Diagnose and Treat All Patients using the Most Effective and Quality Care

Objective 3.3: Increase the number of opportunities to share information and experiences relating to accessibility of cancer care and follow-up through the use of outreach and telehealth / telemedicine.

Action Steps

- Identify existing methods used to address accessibility to cancer care and follow-up in Wyoming.
- Collaborate with existing and new partners to host information-sharing opportunities to share lessons learned.
- Educate cancer patients and their families about increased access to cancer care and follow-up through telehealth resources in Wyoming.
- Increase the number of cancer patients utilizing outreach and/or telehealth services for cancer care and follow-up.

Measures	Baseline	2020 Target
Number of information sharing opportunities	0	3

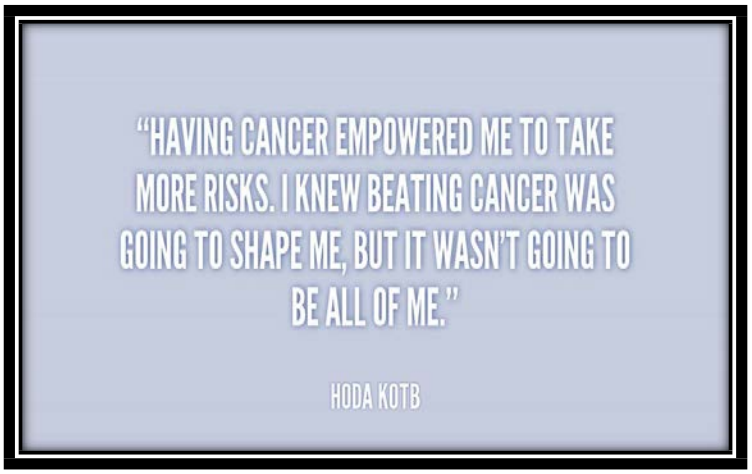
Diagnose and Treat All Patients using the Most Effective and Quality Care

Goal 3

Objective 3.4: Increase educational opportunities to improve awareness and knowledge of issues relating to cancer survivorship.

Action Steps

- Educate the general public, policy makers, and business leaders about the diverse and ongoing needs of cancer survivors.
- Identify, develop, and maintain cancer survivorship resources available through the WYCC website, regional Wyoming Cancer Resource Services (WCRS) offices, and health care partners and providers statewide.
- Educate health care professionals about the short and long term issues that impact the quality of life of cancer survivors and their families following initial treatment.
- Expand and build relationships with organizations that celebrate cancer survivorship.



Measures	Baseline	2020 Target
Number of educational opportunities surrounding survivorship	0	2

DIAGNOSIS & TREATMENT

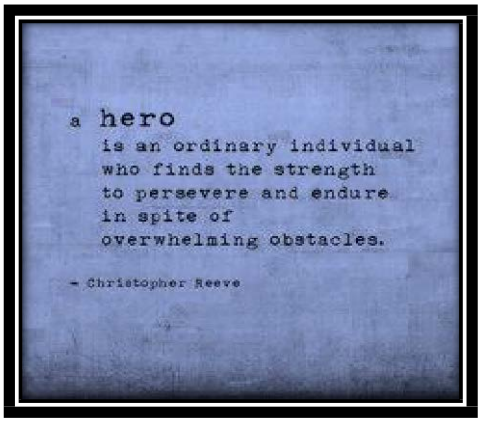
Goal 3

Diagnose and Treat All Patients using the Most Effective and Quality Care

Objective 3.5: Increase the use of survivorship care plans by cancer treatment centers in Wyoming.

Action Steps

- Collaborate with cancer center administrators and key stakeholders about the existence and use of cancer survivorship care plans in Wyoming.
- Educate cancer survivors and providers about the value of survivorship care plans and treatment summaries.
- Educate pediatric and young adult cancer survivors about the importance of survivorship care plans and treatment summaries to their ongoing and long-term health care needs.
- Educate primary care providers about the short and long term issues that affect the quality of life of cancer survivors following initial treatment.
- Educate cancer survivors about transitioning back to a primary care setting.
- Monitor potential impact of this objective through the implementation of the BRFSS Cancer Survivorship module.



Measures	Baseline	2020 Target
Number of cancer centers using survivorship plans	1	3

Diagnose and Treat All Patients using the Most Effective and Quality Care

Goal 3

Objective 3.6: Develop, publish, and disseminate a Cancer Survivors' Bill of Rights for Wyoming.

I was diagnosed in September of 2014 with Triple Negative breast cancer after finding a lump in the late summer during a self-breast exam. Fortunately, I caught it early as it was contained to just the lump and hadn't spread to my lymph nodes. I underwent 4 months of dose-dense chemotherapy, followed by a lumpectomy and sentinel node removal, and then 31 radiation treatments. I've worked in the Oncology/Cancer field for 17 years and it was a very surreal experience being on the other side. Ironically, one of my best friends was diagnosed 2 days after me and we were able to help each other through our chemotherapy treatments. Support from loved ones and friends are so important. We made the best of a crappy situation during our treatments and always made sure we had fun. My motto during it all was "I've got this..." and I meant it! As a single mom of 2 very active boys, I pushed myself every day to continue to work full time and attend all of their sports and other activities. Staying active and living a normal life helps keep you motivated as well as having a positive attitude! Becoming part of the breast cancer statistics was something I never had given any thought to as I had no family history. Due to my career in the Cancer field, I had always done self-breast exams earlier than recommended, as well as mammograms. Knowing my body and my breasts saved my life! I'm so grateful for the experience and what it taught myself and my boys. I can now relate to my patients on personal level and can make an even bigger difference than I ever thought possible. It was an amazing journey that I fought hard through and triumphed! I've embraced the experience, the changes and the NEW me. Cancer has taught me a lot..... It can't take away hope and courage, I am stronger than I thought, and my boys are amazing ...

Leigh Worsley, Gillette, WY

Action Steps

- Research and develop a cancer survivors' bill of rights specific to Wyoming.
- Develop an educational campaign and the rights of patients with cancer.
- Collaborate with the American Cancer Society Cancer Action Network (ACS-CAN) to utilize the Bill of Rights to advocate, and educate about cancer issues in Wyoming.

DIAGNOSIS & TREATMENT

Quality of Life

Quality of life (QOL) issues have always been areas of concern for cancer patients and cancer survivors. For decades, the primary focus of cancer research was on diagnosis and treatment. An important shift has been made to view cancer patients and survivors in a much more holistic way with attention now focusing on their psychological, social, and spiritual needs as well as their medical needs.

Pain management, palliative, and end-of-life care were the first issues to be addressed in QOL research for cancer patients. Pain management for both acute and chronic pain continues to be a vital part of quality of life discussions for cancer patients and survivors. The goal of palliative care is to provide the best possible quality of life for patients and their families. Pain management, rehabilitation and hospice care continue to be the backbone of the QOL issues for cancer patients.

Molly Johnson Casper, WY

My cancer story began when I was just shy of turning 21. I lived in Cody, Wyoming, was going to college and working at a salon and spa full-time as a cosmetologist. I went to a doctor for blackouts and migraines I had been getting all of a sudden, and was sent for an ultrasound of my neck. When my doctor called me with the ultrasound results, she said, "The results are back. You don't need to come see me; you need to go see a surgeon." Every weekend I'd drive to Casper on Saturday night... or Sunday morning for an appointment (or appointments) on Monday, and drive back to Cody. After 6 weeks of driving back and forth, a needle biopsy, and an open tissue biopsy, on my 21st birthday my results came back, it was cancer. I had my first thyroidectomy and neck dissection in 2005. They thought the surgery would be simple, but it took 8 hours. The first part of my surgery removed my thyroid, two parathyroid, and 55 lymph nodes. When I came to from the surgery, they realized something was wrong. Back under I went... to find out my vocal cord nerve was cut and my other voice chord wasn't functioning right. This left me with a paralyzed vocal cord and a partially paralyzed vocal cord. My voice will be a challenge for the rest of life now because I can over use it, which would lead to a tracheotomy. I was referred to a cancer specialist in Denver and in April 2006, underwent surgery again to remove more lymph nodes. After 6 months, I got my results on Christmas Eve. It was a miracle, the radiation had worked, best gift ever. At my next 6 month checkup, the cancer had returned and they thought had spread to my lungs. It hadn't spread, thank goodness, but I had more cancerous lymph nodes. I did 35 treatments of external beam radiation in the summer of 2012 on my neck, jawline and chest... In 2013, my cancer returned starting with five lymph nodes.... In 2015, I still have cancer (it's my best friend)... I wouldn't have it any other way, though. I have learned to live and love more, to be positive, listen to my body and to not take moments for granted. I love telling my story so that people know they are not alone, they can get through cancer with laughter, love, and a good support system. This is just the beginning of my story, but I always remind myself I can either choose to live my life or I can let the cancer live my life.

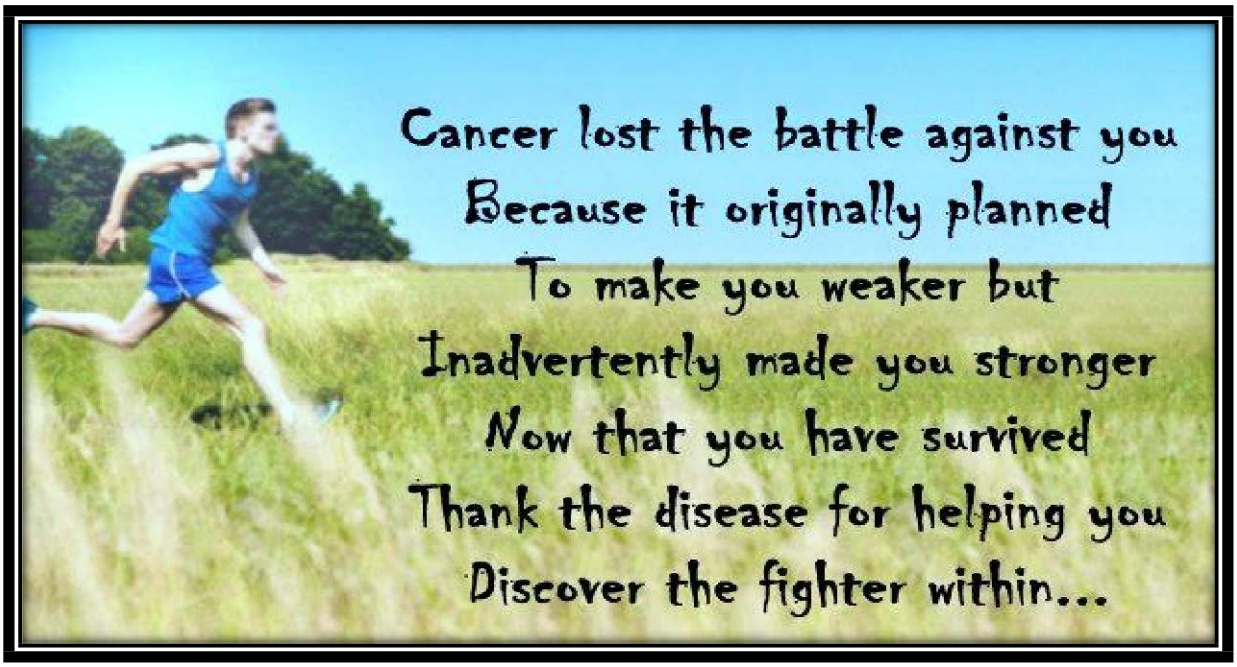
Enhance Survivorship and Quality of Life for Every Person Affected by Cancer

Goal 4

Objective 4.1: Create and disseminate a patient-based QOL assessment survey to include questions related to QOL at diagnosis, during treatment, and at the end of treatment.

Action Steps

- ➔ Request QOL questions be included in BRFSS.
- ➔ Work with state epidemiologist to create measurable questions for surveys.
- ➔ Encourage the use of the standard QOL index and report results back to the Chronic Disease Epidemiologist.



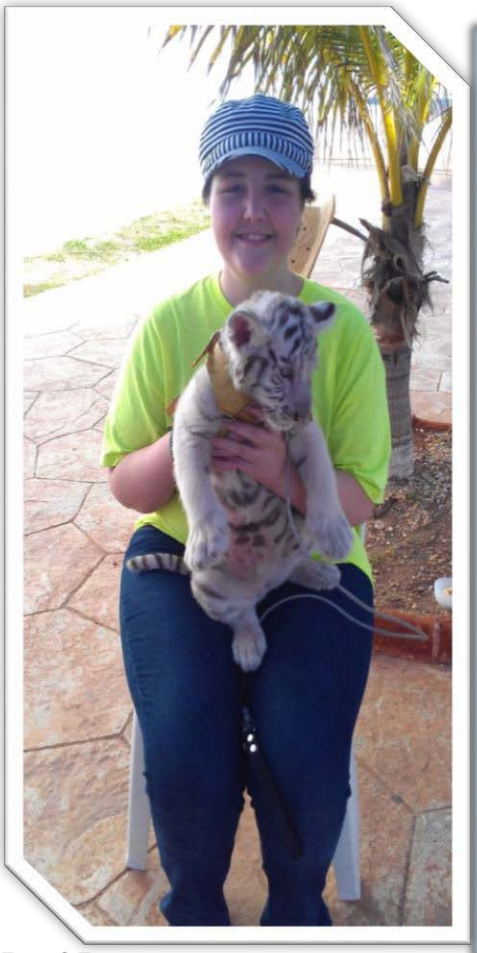
QUALITY OF LIFE

Enhance Survivorship and Quality of Life for Every Person Affected by Cancer

Objective 4.2: Increase the number of comprehensive care plans, including pain care, provided to patients and caregivers during treatment.

Action Steps

- ➔ Review data from the most recent survey on nationally recognized care plans.
- ➔ Offer webinars and/or trainings on nationally recognized care plans.
- ➔ Identify and highlight areas of specific need in Wyoming to be addressed in the care plans.



Dani Peterson
Casper, WY

The last day of school, my junior year..., I noticed the left side of the roof of my mouth was swollen. I called my mom and told her about it, and she told me to call the dentist. My dentist was on vacation and wouldn't be back till the next week, but when my dentist came back I immediately had an appointment and as soon as he saw my mouth he said we had to do an emergency wisdom tooth extraction because my mouth was so infected... At the time, we thought it was just an infection that could be remedied with antibiotics and pain medication, but as the days went on, the pain increased and necrotic tissue started growing out of the hole my tooth had left behind. The dentist felt that he could not handle the situation, so he sent me to an oral surgeon, who cut the mass out and pulled the rest of my wisdom teeth as a preventative measure. During this time, I was still trying to work, though I couldn't talk well and I couldn't open my mouth to eat. On June 13th, I had an appointment with the oral surgeon to pull one of my

Measures	Baseline	2020 Target
Number of comprehensive care plans given	0	200

Enhance Survivorship and Quality of Life for Every Person Affected by Cancer

Goal 4

Objective 4.3: Increase the number of resources available on the WYCC website aimed at connecting affected persons and stakeholders with local, regional, and national cancer resources and support groups.

Action Steps

- ➔ Provide Wyoming Cancer Resource Guide to stakeholders.
- ➔ Evaluate national support organizations for availability and appropriateness in Wyoming.
- ➔ Promote and educate regional cancer centers on available support programs.

Measures	Baseline	2020 Target
Number of resources available on the WYCC website	21	30

molars that had become loose from the swelling. As we went in to the office he … said that he had gotten a phone call from pathology with results from the tissue he sent in. I didn't know he was going to test the mass, but I'm glad he did because it was the tip of a fairly large tumor. He told my mom and I that … I had Burkitt's Lymphoma and asked if he could call a pediatric oncologist in Denver. … My mom took it pretty hard but I was okay, my first thought was I needed to let people know, so I called my grandparents and my dad. When the doctor came back in, he said I needed to go straight to the E.R. One of the side effects of this type of cancer was shutting my kidneys down… Tests showed that my kidneys were high in uric acid, so the hospital put me on an IV. Casper does not have the resources to treat a pediatric cancer patient, so they had to transfer me to Denver by ambulance. My mom and my aunt followed two hours behind. I don't remember what time I got to PS/L hospital, but it was in the middle of the night. They gave me pain meds through the IV and it was the first time I was able to sleep without pain for weeks. In the morning, we found out that I didn't have Burkitt's Lymphoma, I had cancer but we didn't know what type. … a couple days later, my tumor went into overdrive and threatened to close my throat shut. Without knowing how to properly treat it, my oncologists decided to put me through three days of emergency radiation. The swelling reduced and a week after I was uprooted, I was finally diagnosed with Ewings Sarcoma and immediately started chemo. For almost a year, I lived in Denver and went through 8 rounds of chemo, surgery to remove the tumor from my left sinus, 5 weeks of radiation, and another 6 rounds of chemo. I was allowed to move back a few days before all my friends graduated high school, and then started my senior year the fall of 2012.

QUALITY OF LIFE

Goal 4

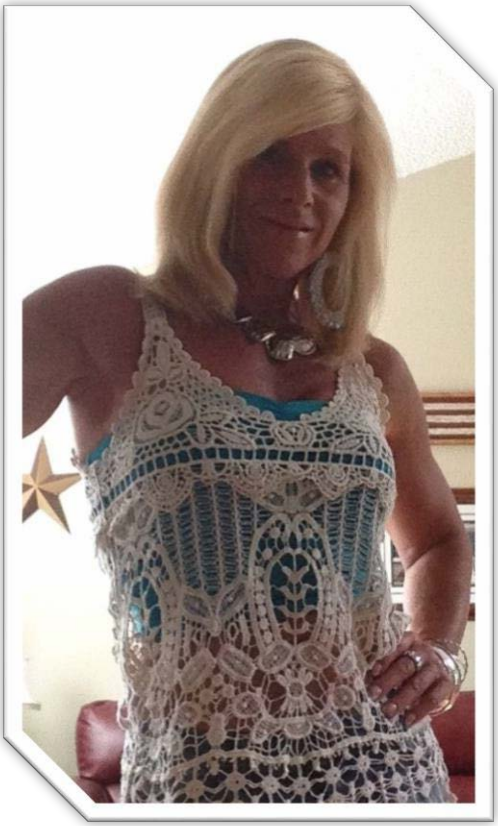
Enhance Survivorship and Quality of Life for Every Person Affected by Cancer

Objective 4.4: Increase the number of resources identifying and educating about palliative care and end of life services available in Wyoming to improve access for affected persons.

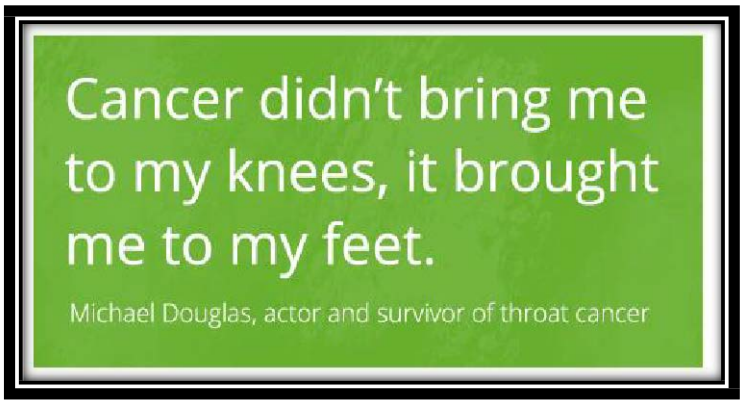
Action Steps

- ➔ Establish a list of care centers/providers that provide palliative care services in Wyoming.
- ➔ Add current updated list of palliative care services to Wyoming Cancer Resource Guide.
- ➔ Promote awareness of palliative care resources listed in Wyoming Cancer Resource Guide.
- ➔ Increase the number of healthcare professionals who are trained in palliative care.
- ➔ Document reimbursement resources for palliative care.
- ➔ Support learning opportunities for palliative care.

Measures	Baseline	2020 Target
Number of resources available about palliative and end of life care	1	5



Gina Hammock
Cheyenne, WY



Enhance Survivorship and Quality of Life for Every Person Affected by Cancer

Goal 4

Objective 4.5: Create, publish, and disseminate a data brief raising awareness and knowledge of Quality of Life issues relevant to people impacted by cancer.

Action Steps

- Educate target populations about Quality of Life concerns in cancer survivors.
- Increase health-care provider awareness and knowledge of Quality of Life issues.

I was diagnosed with Invasive Ductal Carcinoma on February 13, 2006. I was 42 years old and headed for divorce. The year before, I had originally noticed a pea sized lump on my breast that was visible. There was no magic trick to how I found it; it was completely visible with the with the naked eye. I made the necessary doctor appointments and made sure to go to them all. I was told it was nothing "let's keep an eye on it". I was at the tail end of a bad marriage and honestly wasn't too concerned about me at the time. By that summer the lump flatten out and began to pucker it did everything they tell you watch for. I didn't care! I was only 42, no one and I mean no one was going to "lop off my boob" I was not in a good place mentally. I had a couple of long lost friends come back into my world and between the two they talked me into going back to the doctor. Sure enough, the look on the doctor's face said it all, backed up by "when can we get you in here to remove that, it needs to go soon." I tell that ugly part of my story for a reason. I would not change my cancer experience for anything. It helped me discover that the person who was already missing me was me I had a lumpectomy that left me with only 3/4 of a boob. I felt good, I was going to beat this, I was going to prove just how strong I was to all those who had walked away. I learned to laugh at my situation, cancer and divorce all at the same time, who flippin does that? Go big or go home became my new motto. Those who stuck by me or came into my life learned to laugh with me. Knowing that the laugher helped to heal what had been so broken. I drew strength from the laughter. For the first time in my life I was putting me first, this was about me and people could either be a part of it or not! Take me as I am or leave....I began to realize that letting go of toxic people was healthy, that wow, was I ever a strong person, that taking care of me first made me a much better person for other and that for the first time ever I could out loud say "I am a good person and I like myself" I liked myself, for once in my life, I liked myself! My experience with cancer gave me the ability to let go of the little things in life and truly concentrate on what was important. Cancer helped me find ME. Cancer gave me a battle to fight and win when I had felt I was losing at life. This terrible ugly disease showed me what was beautiful and for that reason I would not change my experience with cancer for anything. There is a beautiful life this side of cancer, and I am living. Don't ever give up!

QUALITY OF LIFE

Childhood Cancer

Cancer is the second leading cause of death in children, exceeded only by motor vehicle crashes. Although childhood cancers are rare and represent less than 1 percent of all new cancer diagnoses, an estimated 10,700 new cases were expected to occur among children ages 0 to 14 nationwide in 2015. The two most common childhood cancers are leukemia (31 percent of all childhood cancers) and brain or other nervous system cancers (21.3 percent). Mortality rates for childhood cancer have declined by 50 percent since 1975, attributed largely to improved treatments and the high proportion of patients participating in clinical trials. Despite declining mortality rates, an estimated 1,340 deaths were expected to occur nationwide in 2010, with about one-third of these from leukemia.

In Wyoming in 2013, there were 12 cases of cancer diagnosed in children under 15 years of age. During the same year, there were two cancer-related deaths in children as a result of brain cancer and leukemia. Currently, all Wyoming children diagnosed with cancer must travel out of state to receive specialized cancer care, as there are no cancer programs or hospitals in the state staffed and equipped to handle these special cases. [24]

Early symptoms are usually nonspecific so parents should ensure that children have regular medical check-ups and be alert to any unusual and persistent symptoms. These may include an unusual mass or swelling; unexplained paleness or loss of energy; sudden tendency to bruise; a persistent, localized pain; prolonged, unexplained fever or illness; frequent headaches, often with vomiting; sudden eye or vision changes; and excessive, rapid weight loss.

We just came off a devastating loss in the playoffs of a tournament in Casper and we decided we would go get lunch as a team to celebrate what success we had. All the players were super bummed so eating a good lunch sounded like a good cheer-up. We all decided to go to Old Chicago to get some pizza. While we were there, we saw a girl who was about their age (11-12) who had cancer. All of her hair was gone and she was sitting with her two parents. We didn't think much of it at first. To our surprise about 5 minutes later she came and sat at our table. She talked to us about how she has always wanted to play softball and that she loved our uniforms. The whole time she was smiling and laughing. She asked if we played another game later. We told her we play again at 3 and where the field was. When we showed up to play in the losers bracket she came and cheered us on. We won that game and gave her a ball that one of our players had hit over the fence and the whole team signed it. All of the girls learned a great lesson that day. We were pretty bummed about losing the first game, but this girl with cancer was the happiest girl we ever met. ~ Cody Edwards – Cody, WY

Provide the Highest Quality of Cancer Care and Support for Childhood Patients and Their Families

Goal 5

Objective 5.1: Update and maintain the contact database of families affected by pediatric cancer in Wyoming to serve as a hub for networking and information sharing.

Action Steps

- Actively inquire and solicit the opinions of families affected by pediatric cancer to better understand their needs and continually re-frame pediatric cancer priorities in Wyoming.
- Research the achievability and resources necessary for establishing a hub of pediatric sub-specialty care within Central Wyoming for long term needs of children with chronic diseases.
- Coordinate with families affected by pediatric cancer, oncologists, and other pediatric healthcare providers to identify long-term needs and resources available to children affected by cancer.

CHILDHOOD CANCER

Goal 5

Provide the Highest Quality of Cancer Care and Support for Childhood Patients and Their Families

Objective 5.2: Expand medical and mental health services available for children with cancer in Wyoming.

Action Steps

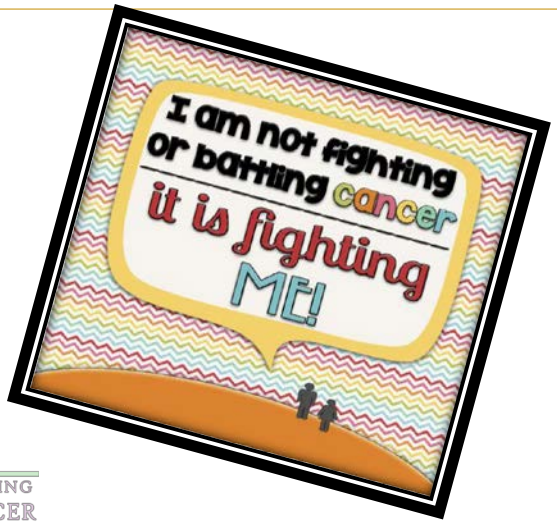
- Increase education of nursing staff on skills pertinent to pediatric oncology through collaboration with pediatric cancer centers, including incoming outreach teams, on-site and/or web based trainings, etc.

- Increase mental health services and social support for patients and their families to include counseling, support groups, and enhanced communication between social workers based in Wyoming and those at treating pediatric oncology centers.

- Support and promote awareness for programs like Jason's Friends Foundation, Camp Courage, Stupid Cancer, Super Sibs, and others that provide the psychosocial, physical, logistical, and emotional support for patients and their families, including siblings.

- Raise the awareness of patients, parents, and medical professionals about the need for shared decision making, by which adolescent and young adult patients are actively involved in the decision making process regarding the course of treatment and in medical conversations relating to their care.

Measures	Baseline	2020 Target
Number of mental and medical health services	2	6



Provide the Highest Quality of Cancer Care and Support for Childhood Patients and Their Families

Goal 5

Objective 5.3: Increase the number of resources that promote awareness of the issues related to long-term survivorship and education.

Action Steps

- Educate patients and their families about the need for long term follow-up to monitor for late effects of childhood cancer treatment and promote healthy survivorship.
- Work with healthcare providers, patients, and their families to ensure childhood cancer survivors are provided with written documentation of their diagnosis, treatment history, and potential late effects of treatment to empower patients and their future medical providers to appropriately monitor for concerns specific to their diagnosis and treatment history.
- Actively participate with the American Cancer Society Cancer Action Network (ACS CAN) in Wyoming State legislative activities pertinent to childhood cancer.
- Educate patients, parents, and educators on academic challenges faced by childhood cancer patients, and promote awareness of available resources under Section 504 of the Americans with Disabilities Act.

Measures	Baseline	2020 Target
Number of resources available	0	5

CHILDHOOD CANCER

Goal 5

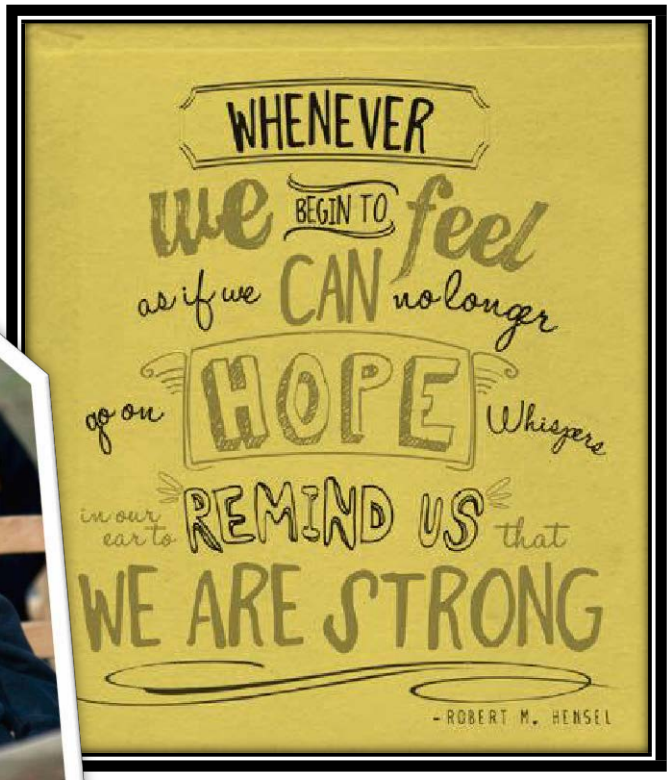
Provide the Highest Quality of Cancer Care and Support for Childhood Patients and Their Families

Objective 5.4: Increase resources and education available related to appropriate end-of-life care for childhood cancer patients.

Action Steps

- Identify medical personnel and facilities that will provide pediatric palliative and/or hospice services in the state of Wyoming and create a document that can be made available on the WYCC website.
- Educate patients on key concepts of palliative versus hospice care to enable maximal utilization of available resources.
- Ensure that resources such as grief counseling, the Butterfly Project, and sibling support/play therapy groups are in place and made readily available to families in need.

Measures	Baseline	2020 Target
Number of resources related to childhood cancer end-of-life care	0	2



Advocacy

Advocacy is the act or process of supporting a cause, idea or policy. Advocacy can be a tool to develop a foundation for identifying and motivating passionate constituents and partners and providing sustainability to the efforts of the Wyoming Cancer Coalition. The overall goal of advocacy is to influence public policy to help reduce the burden of cancer in Wyoming. This has been demonstrated by the passage of the Wyoming Cancer Control Act in 2007, as well as other cancer related legislation focusing on the Wyoming Cancer Resources Services projects, youth access to tanning salons, youth access to tobacco cessation programs and Wyoming insurance solutions legislation. This work further proves that each resident is an instrumental voice and integral part in the success of the Wyoming Cancer Control Plan.

Evaluation Plan and Reports

The Wyoming Department of Health (WDH), through the Wyoming Comprehensive Cancer Control Services is dedicated to supporting the Wyoming Cancer Coalition (Coalition or WYCC) in implementation of the 2016-2020 Wyoming Cancer Control Plan through application and use of an evaluation plan. The evaluation plan will focus on the goals, objectives, and action steps outlined in the 2016-2020 Wyoming Cancer Control Plan and help select priorities and assess progress throughout its lifetime.

The purpose of the evaluation plan is to serve as guidance for the implementation of the Cancer Control Plan with a focus on the mission of the Coalition, which is to reduce the impact of cancer through the development and implementation of a comprehensive approach to address cancer prevention, early detection, diagnosis and treatment and quality of life services.

The annual evaluation report will identify key stakeholders, resources, and accomplishments that actively play a part in the reduction of Wyoming's cancer burden, data collection and analysis methods, and will review how evaluation findings will be used to improve program effectiveness and inform decisions about future program development.

The evaluation plan will be made available on the Coalition website (fightcancerwy.org) in mid-2016 and evaluation reports will be added annually.

Cancer Burden in Wyoming

The National Cancer Institute defines cancer as "a term used for diseases in which abnormal cells divide without control and are able to invade other tissues." [33] The key term in this definition is "diseases" as cancer is not simply one disease but many diseases and there are more than 100 different types of cancer. All cancers result in morbidity (illness) and many also result in mortality (death) for the individual. While cancer tends to affect older individuals more than children, certain types of cancer can be found in people of any age.

Incidence (# of new cases diagnosed)

In 2013 there were a total of 2,457 cases of cancer diagnosed in Wyoming residents. The following table shows the number of cases diagnosed in the most prevalent cancers.

Cancer Site	# of Cases Diagnosed in 2013
Breast (females only)	350
Lung	338
Prostate	254
Colorectal	208
Bladder (with in situ)	120

Table 3 Number of Cancer Cases Diagnosed in 2013 by Most Prevalent Sites

Of the 2,457 cancers diagnosed in 2013, only 19 were in individuals under 20 years of age. Another 265 cases were in those between the ages of 20-50 and the remaining 2,173 cases were diagnosed in individuals over the age of 50. While modern medicine has made great strides in treating cancer, the disease and treatment (chemotherapy, radiation, surgery) can leave a lasting and lifelong impact on the survivor and his/her family. [24]

Mortality

Cancer is the second leading cause of death in Wyoming, second only to heart disease. In 2013 there were 927 deaths due to cancer in Wyoming residents. The leading causes of cancer death are shown in the table below. [24]

Cancer Site	# Deaths in 2013
Lung	226
Colorectal	76
Ill-defined	74
Pancreas	71
Breast	64

Table 4 Number of Cancer-caused Deaths in 2013 by Most Prevalent Types

Survival Rates

A five-year (60 months) survival rate is important when discussing cancer as it is the goal that every survivor strives to meet. A person who is diagnosed with cancer is considered "cured" if he/she is alive five years after treatment and found to have no other cancer. This does not mean that they may not develop another cancer after five years or experience a late recurrence of the original cancer, but for practical purposes a patient who is disease-free at five years is considered "cured".[24]

Wyoming *Relative Survival Rates (Invasive Cancer) 2005-2013

Site	12-Months	24-Months	36-Months	48-Months	60-Months
All Wyoming cancer sites	82.3%	75.9%	72.5%	70.0%	68.1%
Bladder (in situ)	91.2%	84.3%	82.5%	78.3%	74.2%
Brain	56.6%	44.0%	39.3%	33.5%	29.2%
Breast (female only)	97.4%	95.7%	93.5%	92.0%	90.6%
Colorectal	83.6%	74.2%	68.2%	63.7%	60.8%
Kidney	88.2%	80.5%	76.7%	72.9%	68.5%
Leukemia	76.3%	70.0%	65.1%	61.2%	58.1%
Lung	43.3%	27.0%	21.9%	18.7%	16.5%
Melanoma	98.8%	96.4%	95.5%	93.4%	93.0%
Non-Hodgkin	83.7%	79.0%	78.0%	74.5%	72.8%
Oral Cavity	88.1%	78.5%	71.1%	67.7%	61.2%
Ovary	77.3%	66.1%	53.4%	48.5%	42.5%
Pancreas	30.6%	18.2%	10.5%	7.5%	6.9%
Prostate	99.8%	99.8%	99.4%	98.9%	95.8%
Thyroid	97.1%	96.9%	96.1%	95.7%	95.3%
Uterine	94.0%	91.0%	87.3%	86.4%	83.2%

Table 5 Wyoming Relative Survival Rates (Invasive Cancer) 2001-2013

**Relative Survival is a net survival measure representing cancer survival in the absence of other causes of death. It is defined as the ratio of the proportion of observed survivors in a cohort of cancer patients to the proportion of expected survivors in a comparable set of cancer free individuals.*

Wyoming *Relative Survival Rates (Invasive Cancer) 2001-2013 Most Common Cancers in Children 0-19

Site	12 Months	24 Months	36 Months	48 Months	60 Months
All sites	92.4%	88.7%	88.2%	86.2%	83.2%
Brain	82.2%	73.8%	73.8%	68.6%	62.6%
Leukemia	91.9%	87.6%	87.6%	87.6%	81.8%
Melanoma	83.4%	83.4%	83.4%	83.4%	83.4%
Non-Hodgkin	92.9%	85.8%	85.8%	85.8%	85.8%

Table 6 Wyoming Relative Survival Rates (Invasive Cancer) 2001-2013 Most Common Cancer in Children 0 - 19

Note: Recurrent percentages across years are partly due to low numbers of cases for this age group.

LOOKING TOWARD THE FUTURE:

For more than 40 years, the "war on cancer" has been waging, and the search for a cure continues today. There are many ongoing advances happening in techniques and technologies being used to prevent, detect, and decrease cancer, yet cancer continues to be one of the leading causes of death. It can seem like we are constantly on the verge of the next breakthrough - perhaps just beyond the horizon the cure waits to be discovered - but for those whose lives and loved ones have been touched by cancer, progress is painfully slow.

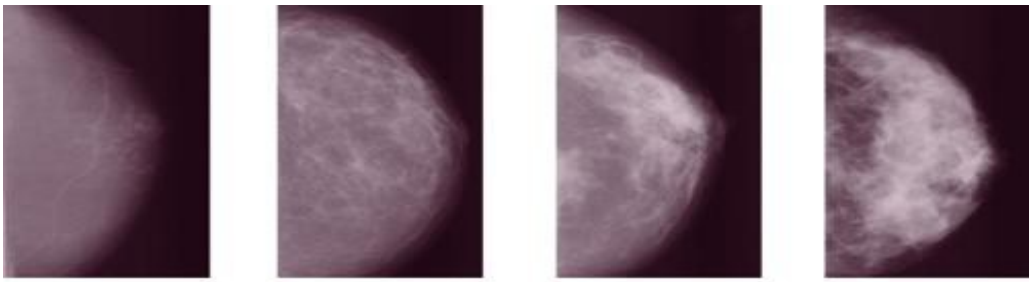
What might the next 5 years bring?

Some of the objectives and action steps in this Cancer Control Plan will be used to gain insight into current trends and help us focus on the direction of next five-year Cancer Control Plan.

The cancer control landscape is constantly changing. As such the Wyoming Cancer Coalition feels that the following topics should be included in current discussions about cancer, even though some of the research and insight that has been provided thus-far is incomplete. There is the potential during the lifespan of the 2016-2020 Cancer Control Plan to see one or more of these topics become national news, as we grow in our understanding and comprehension of cancer risks and research.

BREAST DENSITY AND BREAST CANCER

Breast density is a measure used to describe the proportion of tissues that makes up a woman's breasts. It is not a measure of how the breasts feel, but rather how the breasts appear on a mammogram. Breasts are composed of fat, breast tissue (milk ducts and lobules or glandular tissue), and connective tissue. Breast and connective tissue are denser than fat which can affect the usefulness of a mammogram for someone who has particularly dense breasts (greater amount of breast and connective tissue compared to fat), making it more difficult for a health care provider to positively identify early cancers through mammography.



It has recently been discovered that women with high breast density are four to six times more likely to get breast cancer than women with low breast density. However, it is not clear that lowering breast density will decrease risk. For example, getting older, and gaining weight after menopause are both related to a decrease in breast density, but also related to an increase in breast cancer risk.

At this time, health care providers do not routinely use a woman's breast density to assess her breast cancer risk, as there is no standardized way to measure breast density yet. There are currently no special recommendations or screening guidelines for women with dense breasts. Breast ultrasound, MRI and tomosynthesis (in combination with mammography) are being studied to learn whether they improve detection in women with dense breasts compared to mammography alone. [34]

TODAY: A measure of breast density is sometimes recorded on mammography reports. By looking at your mammogram or the measure of breast density, your provider may be able to suggest other types of breast imaging if warranted.

RED MEAT AND COLORECTAL CANCER

The International Agency for Research on Cancer (IARC) and the World Health Organization (WHO) have been working together to evaluate whether consumption of red meat increases a person's cancer risk.

During several years of research, a clear connection was identified between consumption of processed meat foods (meats treated with substances designed to increase shelf-life or enhance flavor such as ham, sausage, hot dogs, and bacon) and colorectal cancer, with potential associations to pancreatic and prostate cancer as well. [35]

Experts concluded that each 50 gram portion of processed meat (approximately four strips of bacon or one hot dog) eaten daily increases the risk of colorectal cancer by 18 percent.

But what about red meat (beef, veal, pork, lamb, etc.)? After thorough review of the available cumulative information, a group of experts from around the world classified red meat as "*probably carcinogenic to humans (GROUP2A)…* based on limited evidence." [36] This means that a positive association was observed between consumption of red meat and colorectal cancer, but that other explanations for the observation could not be ruled out.

Further studies need to be conducted to help solidify the findings of this particular determination and look at other factors that might affect the observed outcome of such studies, such as cooking methods, storage and preservation methods, and comparisons of types of red meat.

Experts say that overall, the risk of developing colorectal cancer because of meat consumption, processed or otherwise, is small but the risk does increase with the amount of meat consumed. [37]

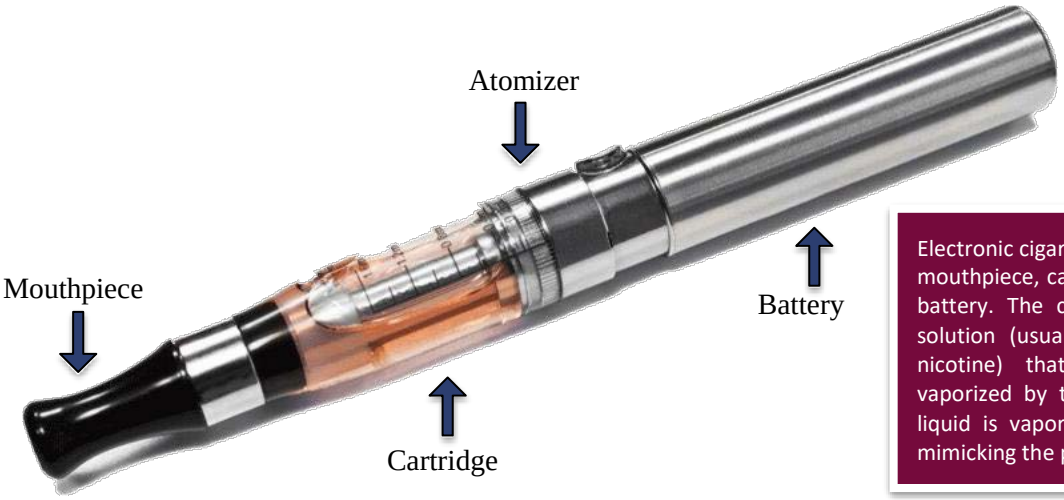
TODAY: These findings support public health recommendations to limit intake of meat and consume a diet high in vegetables, fruits and whole grains. Although consumption of red meat does have some nutritional benefits, it is important to balance the risks and benefits by consuming appropriate portions and choosing fish, poultry or beans as an alternative to red and processed meats.

E-CIGS AND LUNG CANCER

Since its introduction to the U.S. market in 2007, there has been much debate over the safety of electronic cigarettes (e-cigarettes) and the affect they have and will continue to have on the tobacco industry, individual health, and related cancer risks.

Do e-cigarettes act as a "gateway" and promote smoking and nicotine use among teens and current non-smokers, or are they an effective way for smokers to wean themselves away from the real and present risks surrounding traditional cigarette use?

Due to the relatively new technology of electronic cigarettes, knowledge about the long-term effects of its use is limited and more than a little concerning to health experts.



Electronic cigarettes consist of a mouthpiece, cartridge, atomizer, and a battery. The cartridge holds a liquid solution (usually with some level of nicotine) that is heated up and vaporized by the atomizer. Once the liquid is vaporized it can be inhaled, mimicking the process of smoking.

Electronic cigarettes and the vapor liquids (referred to often as e-juice) used in them are not regulated by the US Food and Drug Administration (FDA), which leads to concerns about what substances could be found in these solutions. While manufacturers claim that their devices and products are safe, there is no regulation or oversight in place.

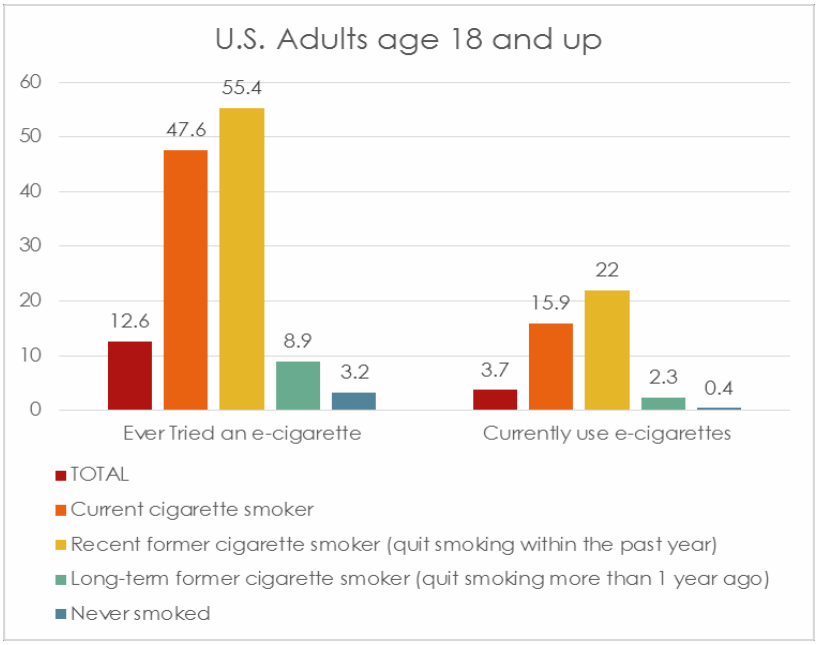


Chart 3 E-Cigarette use among U.S. Adults age 18 and Up

In multiple analyses of the liquid solutions, levels of nicotine varied greatly between samples, and traces of toxic chemicals and metals could be identified in others. [38] While these solutions do not contain many of the carcinogenic substances found in traditional cigarettes, they should not be considered without risk. Without knowing the long-term effects of electronic cigarette use, it is difficult to weigh those risks against traditional forms of tobacco use.

In November of 2015, the Centers for Disease Control and Prevention released the first National Health Interview Survey (NHIS) findings regarding e-cigarette use in the United States among adults age 18 and older. [39] When examined in the context of conventional cigarette smoking, use of e-cigarettes was highest among current and recent former cigarette smokers, and among current smokers who had made an attempt to quit within the past year, with only 3.2 percent of adults who had never smoked tobacco indicating they had tried the device.

A report in April based on the 2014 National Youth Tobacco Survey (NYTS) indicated that e-cigarette use (on one or more days during the past 30 day period) among middle and high school students had tripled from 2013 to 2014, while cigarette use had continued to decline. There was no information in the study to indicate what levels of nicotine were most commonly being used in the e-juices. [40]

TODAY: The common struggle at present is that there is not enough evidence to support or drive decision makers to effective action regarding the use of e-cigarettes. It seems clear that continued research and studies are needed to determine what the health implications of e-cigarette use will be on the population. In addition, stricter oversight of the solutions and devices flooding the marketplace should be a priority to ensure and maintain the highest level of safety. Regulation of the sale and purchase of e-cigarettes and nicotine solutions should be strengthened to restrict use among youth. It is recommended to anyone using e-cigarettes as a cessation tool for smoking or otherwise to eventually quit using e-cigarettes as well. The safest alternative to smoking is quitting use of all products containing nicotine completely. [38]

CANCER PREVENTION & TREATMENTS ON THE HORIZON

Many exciting things are happening in cancer prevention and the treatment of cancer. Death rates for many specific types of cancer are declining and there are exciting breakthroughs happening in several therapeutic directions.

IMMUNOTHERAPY

The premise for immunotherapy is that a body's immune system is the best defense against cancer, but that sometimes it needs a push. By boosting monoclonal antibodies (mAbs), which are the molecules designed to ferret out cancer cells and direct the immune system to attack, the body's own immune system should lead the charge in destroying the cancer cells. These mAbs can also be engineered to block signals on cancer cells to stop them from growing. Immunotherapy is supported as a promising treatment for colorectal, lung and breast cancers, when combined with surgery, chemotherapy or radiation. Cancer Treatment Vaccines (personalized immunotherapy) are currently being used in the treatment of prostate cancer. It is hoped that immunotherapy treatments will result in reduced treatment side effects, making them more versatile and effective for use in the treatment of even more types of cancer. [41]

THE FLY AVATAR MODEL

By creating a tumor in a fruit fly that matches a tumor in a patient, researchers are able to test thousands of drugs on the fly to reveal the best treatments for the patients. Cancer grows in fruit flies in the same intricate way that it grows in humans, thus providing a testing ground for study and treatment. Researchers sequence a patient's tumor and identify the mutated genes, then put it in the fruit fly and proceed to test various drugs to cure the fly. Once the tumor is destroyed, identified medication "cocktails" can be incorporated into the patient's treatment program. Currently this model is being tested on colorectal cancer and medullary thyroid carcinoma but it is still early in its development (Mt. Sinai's Center for Personalized Cancer Therapeutics). If this model identifies that certain combinations of drugs are harder for specific cancer cells to withstand than just one drug, the model can be applied to many cancers. [42]

PERSONALIZED TARGETED THERAPY

This model focuses on determining the genetic sequence of a patient's tumor and customizing the treatment accordingly. Using new and emerging technology (e.g., computational biology, predictive genomics, imaging pads) mutated genes can be identified and targeted with drugs tailored specifically for that sequence. This type of treatment is currently being tested on certain types of brain cancers. The hope is that this kind of treatment will mean fewer side effects and better outcomes for patients, and someday maybe even a cure for most types of cancer. [42]

PREVENTION

Vaccines are available for many illnesses previously thought to be chronic and deadly, such as polio, measles and malaria. They boost the immune system's natural ability to protect the body against foreign invaders and help the body identify and seek out those intruders. In the same way, we have seen vaccines able to prevent cervical cancer through the deterrence of the initial cancer-causing viruses (HPV). So what is the prognosis for future cancer vaccines?

Cancer prevention vaccines target infectious agents that cause or contribute to the development of cancer. Many researchers believe that microbes cause or contribute to between 15 and 25 percent of all cancers diagnosed worldwide each year. Several microbes have been classified as carcinogenic including Hepatitis B and C. Vaccines to prevent several types of cancer are even now being studied in clinical trials and within the next five years we may see several cancer prevention vaccines on the market.

Cancer treatment vaccines are designed to treat cancers that have already developed and often utilize immunotherapy principles and techniques to increase the efficacy of a patient's immune system. Producing effective treatment vaccines has proven to be a challenging task. Because the immune system often does not see cancer cells as foreign or dangerous, it does not mount a strong attack. To be effective, cancer treatment vaccines must stimulate specific immune responses against the correct target, and must be powerful enough to overcome barriers that cancer cells use to protect themselves. [43]

HEALTHCARE ACCESS: FRONTIER / RURAL COMMUNITIES

As discussed in the *Unique Challenges* section of the plan, frontier and rural communities and residents face increased difficulty related to health care access. Because of the lack of specialized providers, this is especially hard on those affected by cancer. Advances in access to care are slow, as effects of trials must be studied and outcomes determined. In many cases, the very nature of these communities stands in the way of increased access to care (e.g., low technology uptake, limited internet services and providers). Still, studies and research are being done to discover ways to increase health care options for patients living in these areas.

COMMUNITY HEALTH AIDES

In Alaska, Community Health Aides (CHAs) provide healthcare in remote areas under the supervision of a physician. CHAs work in more isolated locations and rely on telemedicine and other electronic means of communication with physicians to facilitate the care given to patients. CHAs work with a variety of patients and conditions, including mental health, trauma, and chronic disease. Some CHAs work as traveling service providers and see patients in multiple communities to provide healthcare services. [11]

RECRUITMENT AND RETENTION

Various types of recruitment and retention strategies have been used to address significant health professional shortages found in frontier areas. One such program seeks to improve the supply and distribution of healthcare professionals through community and academic educational partnerships that include school-based health career clubs, MCAT preparation, and rural clinical internships, promoting health care based careers among students already living in these areas. [11]

TELEHEALTH

Telehealth may be one of the most important developments to effectively address healthcare issues in frontier areas. Patients can receive healthcare, including some specialized care services, locally reducing the need to travel long distances to receive services. With telehealth technology, primary care providers have the opportunity to work collaboratively with specialists to provide comprehensive care. It has the potential to enhance the quality of care, improve health outcomes and reduce costs. However implementation of telehealth has not been consistent throughout frontier areas and there are still significant regulatory issues that must be resolved.

While Wyoming has many telehealth connections already in place, there are opportunities available to add more. Looking toward the future, the Office of Rural Health at the WDH will be working with University of Wyoming's Project ECHO hub to further enhance the state's telehealth networking capacity.

PROJECT ECHO

Project ECHO is a learning and guided practice model that hopes to revolutionize medical education and increase workforce capacity to provide best-practice specialty care and reduce health disparities. The Project ECHO model is based on hub-and-spoke knowledge sharing networks, led by expert teams who use videoconferencing to conduct online clinics with community health providers. In this way, primary care physicians, nurses, and clinicians can learn to provide exceptional specialty care to patients in their communities. [44]

People need access to specialty care.

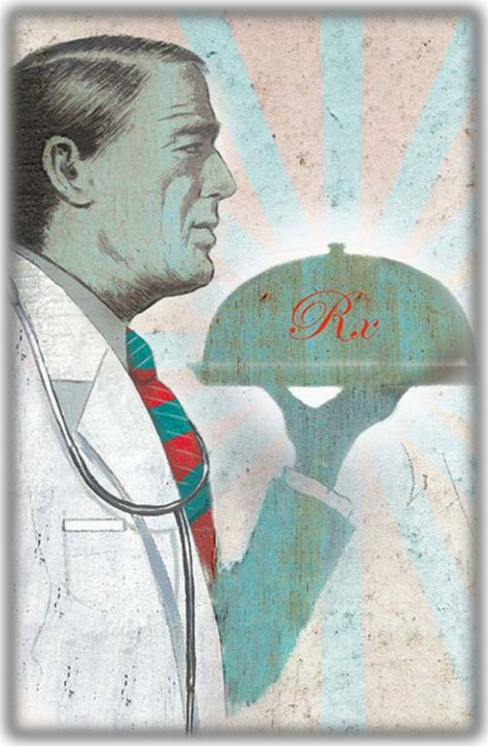
There aren't enough specialists to treat everyone who needs care, especially in rural and underserved communities.

ECHO trains primary care clinicians to provide specialty care services. This means more people can get the care they need.

Patients get the right care, in the right place, at the right time. This improves outcomes and reduces costs.

DIRECT-PAY (CONCIERGE) MEDICINE

Because of increasing frustration with the healthcare payment systems that are in place in the United States, some primary care practitioners are beginning to shift to new formats for receiving payment for services. One such practice is the “cash-only” or “direct payment” method. This model of health care originally emerged as a form of boutique practice in the 1990s but has transformed over the years, as it allowed physicians to decrease administrative and insurance costs within their practices, while offering services to uninsured and underserved populations for lower pay-per-visit charges.



There are several direct pay methods which allow health care providers greater autonomy over their practices and more flexibility in seeing patients, making some systems practical for rural and frontier communities where the “traveling doctor” scenario still makes sense today. In some cases, the patient pays a monthly “subscription” fee directly to the health care provider for services to be rendered (concierge medicine). Screenings, regular checkups and most regular scheduled services are covered by the subscription fee. An increased monthly fee can cover more emergent and specialized care, including a health provider’s travel to see the client. Other providers simply refuse to accept insurance and require payment upon receipt of services, which reduces the administrative and overhead costs usually associated with filing insurance claims and the declining reimbursements rates. [45]

This form of medicine is still shifting and changing to adapt to gaps in healthcare solutions. Some argue that direct-pay and cash only practices will increase the number of individuals unable to afford long-term care physicians, while others contend that these practices increase access for underserved populations, as it allows physicians the flexibility to offer services at reduced rates to uninsured patients because administrative costs and overhead is reduced considerably. [45]

RETAIL CLINICS

Retail clinics are health care clinics that are embedded into retail markets, such as grocery stores and pharmacies. This promises to be a model well-equipped to frontier and rural communities, focusing on patient outcome, and providing care points within the community that can reach the entire population.

Currently, most retail clinics focus on preventive and primary care services, being largely staffed by nurse practitioners and clinicians. There are opportunities within some of the larger chains (e.g.: Walmart, Walgreens, CVS) to expand services to include limited specialized care services.

Because of the Affordable Care Act (ACA) and other legislation governing the reforming of health insurance, the healthcare landscape is changing. How we provide and receive healthcare in the future may look very different than it does today. [46]

This is just a look at some of the emerging options that may become popular over the next five years, and there will likely be many more that have not yet been predicted.

Bibliography

[1] "US Census Bureau State & County QuickFacts," [Online]. Available: http://quickfacts.census.gov/qfd/states/56000.html. [Accessed December 2015].

[2] "US Census 2010," [Online]. Available: http://www.census.gov/2010census/popmap/ipmtext.php?fl=56.

[3] "American Fact Finder," [Online]. Available: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF. [Accessed December 2015].

[4] "American Community Survey 2013," [Online]. Available: https://www.census.gov/programs-surveys/acs/news/data-releases/2013/release.html#par_textimage_19. [Accessed December 2015].

[5] "National Center for Frontier Communities," [Online]. Available: www.frontierus.org/. [Accessed December 2015].

[6] "Wyoming Hospital Association: Hospital listing," [Online]. Available: http://www.wyohospitals.com/find.asp. [Accessed December 2015].

[7] "Flex Monitoring Team: Critical Acess Hospital Locations," [Online]. Available: http://www.flexmonitoring.org/data/critical-access-hospital-locations/?search_state=WY&filter_search=yes#result-list. [Accessed December 2015].

[8] "Centers for Medicare and Medicaid Services: Rural Health Clinic List," [Online]. Available: https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/rhclistbyprovidername.pdf. [Accessed December 2015].

[9] "National Association of Community Health Centers," [Online]. Available: http://www.nachc.com/client/documents/research/maps/WY2015.pdf. [Accessed December 2015].

[10] "US Dept of Veterans Affairs," [Online]. Available: http://www.va.gov/directory/guide/state.asp?dnum=ALL&STATE=WY. [Accessed December 2015].

[11] "Rural Health Information Hub," [Online]. Available: https://www.ruralhealthinfo.org/topics/frontier. [Accessed December 2015].

[12] K. Wagner, Interviewee, *Wyoming Healthcare Workforce and Primary Care Office.* [Interview]. 17 February 2016.

[13] R. S. D. H. Rural Health Fellows: Elizabeth Burrows, "Policy Brief on Health Care Workforce Distribution and Shortage Issues in Rural America," January 2012. [Online]. Available: http://www.ruralhealthweb.org/index.cfm?objectid=3D776162-3048-651A-FEA70F1F09670B0D. [Accessed January 2016].

[14] "Kaiser Family Foundation: State Health Facts: Health Insurance Coverage," [Online]. Available: http://kff.org/other/state-indicator/total-population/.

[15] "Indian Health Services: Wind River Service Unit," [Online]. Available: https://www.ihs.gov/billings/healthcarefacilities/windriver/. [Accessed December 2015].

[16] "Wyoming Behavioral Risk Factor Surveillance System (BRFSS)," [Online]. Available: http://www.health.wyo.gov/brfss/brfssdata.aspx. [Accessed December 2015].

[17] "National Cancer Institute: Cancer Causes and Prevention," [Online]. Available: http://www.cancer.gov/about-cancer/causes-prevention.

[18] "National Cancer Institute: Cancer Trends Progress Report," [Online]. Available: http://progressreport.cancer.gov/prevention. [Accessed December 2015].

[19] "National Cancer Institute: Physical Activity and Cancer," [Online]. Available: http://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/physical-activity-fact-sheet#q3, . [Accessed December 2015].

[20] "Help Guide: Cancer Prevention Diet," [Online]. Available: http://www.helpguide.org/articles/diet-weight-loss/anti-cancer-diet.htm.

[21] "American Cancer Society: Alcohol Use and Cancer," [Online]. Available: http://www.cancer.org/cancer/cancercauses/dietandphysicalactivity/alcohol-use-and-cancer. [Accessed December 2015].

[22] "National Cancer Institute: Alcohol and Cancer Risk," [Online]. Available: http://www.cancer.gov/about-cancer/causes-prevention/risk/alcohol/alcohol-fact-sheet. [Accessed December 2015].

[23] "National Cancer Institute: Cancer Statistics," [Online]. Available: www.cancer.gov/about-cancer/what-is-cancer/statistics. [Accessed December 2015].

[24] "Wyoming Cancer Surveillance Program," [Online]. Available: http://www.health.wyo.gov/PHSD/wcsp/index.html. [Accessed December 2015].

[25] "American Cancer Society: Tobacc-Related Cancers Fact Sheet," [Online]. Available: http://www.cancer.org/cancer/cancercauses/tobaccocancer/tobacco-related-cancer-fact-sheet.

[26] "Environmental Protection Agency: Citizen's Guide to Radon," [Online]. Available: http://www.epa.gov/sites/production/files/2015-05/documents/citizensguide.pdf. [Accessed December 2015].

[27] "American Cancer Society: Melanoma," [Online]. Available: http://www.cancer.org/cancer/skincancer-melanoma/index.

[28] "American Cancer Society: Melanoma Risk Factors," [Online]. Available: http://www.cancer.org/cancer/skincancer-melanoma/detailedguide/melanoma-skin-cancer-risk-factors. [Accessed December 2015].

[29] "Centers for Disease Control and Prevention: Skin Cancer," [Online]. Available: http://www.cdc.gov/cancer/skin/index.htm.

[30] "WebMD: HPV and Cervical Cancer," [Online]. Available: http://www.webmd.com/sexual-conditions/hpv-genital-warts/cervical-cancer-hpv-what-women-girls-should-know#3. [Accessed December 2015].

[31] "National Cancer Institute: HPV Fact Sheet," [Online]. Available: http://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-fact-sheet. [Accessed December 2015].

[32] "Centers for Disease Control and Prevention: Cervical Cancer Screening," [Online]. Available: http://www.cdc.gov/cancer/cervical/basic_info/screening.htm.

[33] "National Cancer Institute: What is Cancer?," [Online]. Available: http://www.cancer.gov/about-cancer/what-is-cancer. [Accessed December 2015].

[34] "Komen: Breast Density on a Mammogram," [Online]. Available: http://ww5.komen.org/Breastcancer/Highbreastdensityonmammogram.html. [Accessed December 2015].

[35] "American Cancer Society: WHO says Processed Meat Causes Cancer," [Online]. Available: http://www.cancer.org/cancer/news/news/world-health-organization-says-processed-meat-causes-cancer. [Accessed December 2015].

[36] "International Agency for Research on Cancer/World Health Organization: Press Release 240," [Online]. Available: https://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr240_E.pdf. [Accessed December 2015].

[37] "World Health Organization: Q&A on the cardinogenicity of the consumption of red meat and processed meat," [Online]. Available: http://www.who.int/features/qa/cancer-red-meat/en/. [Accessed December 2015].

[38] "Medical News Today: Are electronic cigarettes safe," 27 July 2015. [Online]. Available: http://www.who.int/features/qa/cancer-red-meat/en/. [Accessed December 2015].

[39] "Centers for Disease Control and Prevention; National Center for Health Statistics: Data Brief No. 217," [Online]. Available: http://www.cdc.gov/nchs/data/databriefs/db217.pdf. [Accessed December 2015].

[40] "CDC: E-cigarette use triples among middle and high school students...," [Online]. Available: http://www.cdc.gov/media/releases/2015/p0416-e-cigarette-use.html. [Accessed December 2015].

[41] "Prevention.com: How Immunotherapy Could Be the...," [Online]. Available: http://www.prevention.com/health/health-concerns/how-immunotherapy-cancer-treatment-works. [Accessed December 2015].

[42] "Prevention.com: 4 Ways We'll Crush Cancer...," 17 November 2014. [Online]. Available: http://www.prevention.com/health/health-concerns/future-cancer-prevention-and-treatment. [Accessed December 2015].

[43] "Cancer.Net (Conquer Cancer Foundation): What are Cancer Vaccines?," December 2015. [Online]. Available: http://www.cancer.net/navigating-cancer-care/how-cancer-treated/immunotherapy-and-vaccines/what-are-cancer-vaccines. [Accessed December 2015].

[44] "University of New Mexico: School of Medicine: Project Echo," [Online]. Available: http://echo.unm.edu/. [Accessed December 2015].

[45] "Harvard Medical Student Review: Cash-Only and Concierge-Based Medicine:...," 3 January 2015. [Online]. Available: http://www.hmsreview.org/?article=cash-concierge-based-medicine-roles-health-care-payment-landscape. [Accessed December 2015].

[46] "Concierge Medicine Today: Retail Clinics in Rural Areas...," 30 May 2015. [Online]. Available: http://conciergemedicinetoday.org/2015/05/30/tenn-retail-clinics-in-rural-areas-would-widen-primary-care/. [Accessed December 2015].

[47] "Kaiser Family Foundation: State Health Facts: Total Hospitals," [Online]. Available: http://kff.org/other/state-indicator/total-hospitals/?state=WY. [Accessed December 2015].

[48] "Rural Health Informatino Hub: Telehealth use in Rural Healthcare," 5 August 2014. [Online]. Available: https://www.ruralhealthinfo.org/topics/telehealth. [Accessed December 2015].

[49] "Lung Cancer Fact Sheet," 2015. [Online]. Available: http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/lung-cancer/learn-about-lung-cancer/lung-cancer-fact-sheet.html?referrer=https://www.google.com/. [Accessed January 2016].

WYCC WYOMING CANCER COALITION

The **Wyoming Cancer Coalition** is a group of over 300 Wyoming residents and supporters working together to promote and implement the Wyoming Cancer Control Plan by coordinating efforts throughout the state. The Coalition focuses on reducing cancer disparities, increasing awareness of the cancer burden in the state, and improving outcomes for cancer patients. WYCC members are: policy makers, advocates, individuals, businesses, cancer survivors, caregivers, family members, health care providers, hospitals, insurers, non-profit and volunteer organizations, the public health community, state and local government, and others committed to cancer prevention and control.

As a member of the Wyoming Cancer Coalition, you will help to implement the statewide Cancer Control Plan. You will also ensure Wyoming's Cancer Plan represents the many areas of cancer and the people of Wyoming.

If you are interested in being part of the Wyoming Cancer Coalition; please take a few minutes to complete the following information.

Name:_____

Title/ Organization: _____

Address:_____

Phone Number:_____Fax: _____

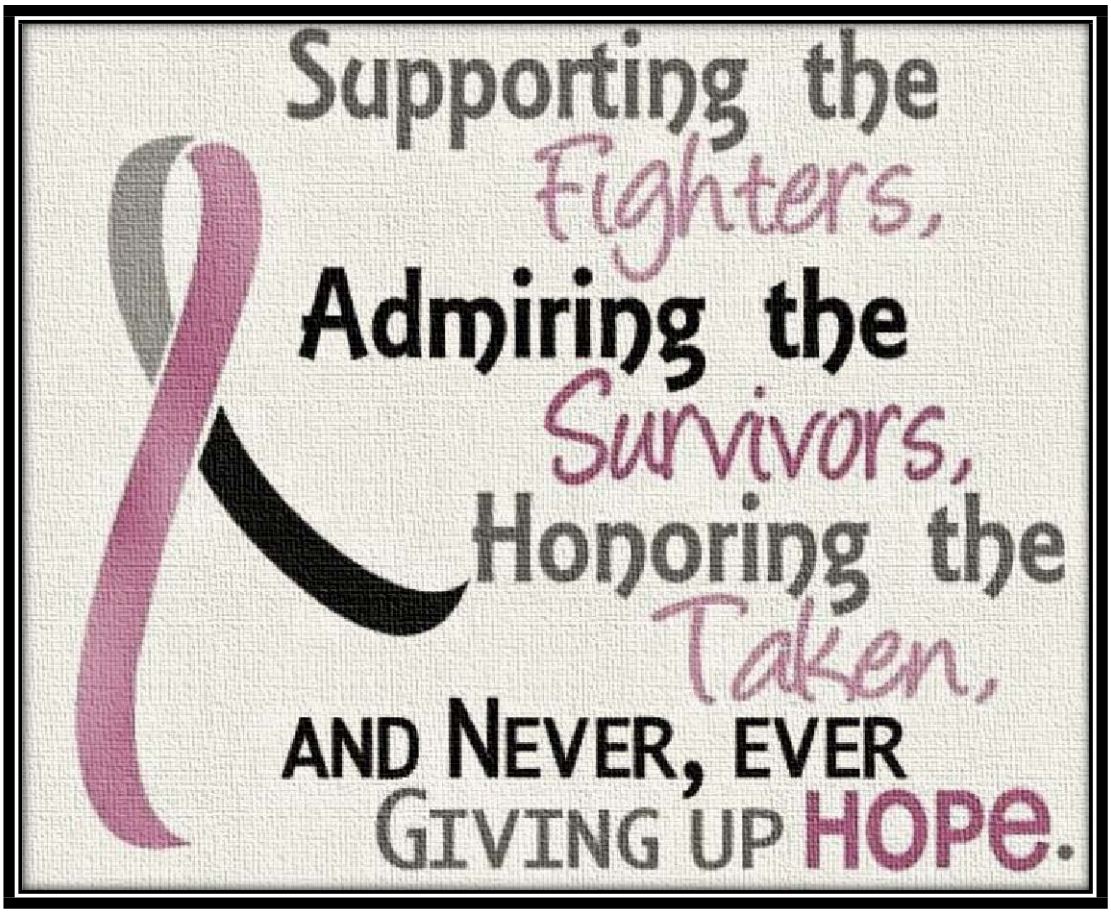
E-Mail: _____

Are you a cancer survivor? Yes ☐ No ☐ I prefer not to answer

☐ I am joining as: an individual ☐ (or) part of my organization ☐

Yes! I would like to become a member ☐
Yes! I am already a member and I would like to renew my membership ☐

Please mail this form to Wyoming Comprehensive Cancer Control Program
6101 Yellowstone Rd., Ste. 510
Cheyenne, WY 82002



The Wyoming Cancer Control Plan 2016-2020 is dedicated to Wyomingites who have lost their lives to cancer and honors those who have survived.

Let this plan be a tribute to their courage and a commitment to saving lives in Wyoming.

WYCC WYOMING CANCER COALITION