2016 - 2020

COLORADO CANCER PLAN

The Roadmap to Reducing the Burden of Cancer in Colorado

COLORADO
Department of Public Health & Environment

COLORADO
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado.

My fellow Coloradans,

For 20 years, the Colorado Cancer Plan has guided our success in reducing the burden of cancer for all Coloradans and improving the quality of life for cancer survivors. Our new Colorado Cancer Plan lays out a roadmap for the next five years, building on our previous success, measuring the gains we make along the way and relying on our long tradition of collaboration to reduce the impact of cancer on Colorado families.

Since 1996, the Colorado Cancer Plan has led the way in fighting cancer. Using previous five-year plans to guide us, we secured voter passage of the 2004 Amendment 35 tobacco tax to fund health care services and tobacco education and prevention; we funded colorectal cancer screening from 2006-2015; and we've implemented programs to support patient navigation, cancer genomics, HPV vaccination, radon reduction and cancer survivorship.

During the past decade, the cancer death rate in Colorado decreased 16 percent. Lung cancer mortality dropped 24 percent. And five-year cancer survival rates improved from 63 percent among those diagnosed during 1996-2000 to 67 percent for those diagnosed during 2006-2010. Later stage cancer survivors saw even more improvement.

Despite these gains, we estimate that in Colorado over 23,000 cancers will be diagnosed in 2015 and 7,300 Coloradans may die from this chronic disease. These statistics represent our family members, friends, colleagues, neighbors and community members. As a state committed to becoming the healthiest in the nation, we can and should do more.

The 2016-2020 Colorado Cancer Plan provides a clear set of goals, objectives and strategies across the cancer continuum of care: prevention, screening and early detection, treatment and survivorship. It calls for addressing the risk factors for cancer by reducing obesity and tobacco use, improving air and water quality, and integrating health systems to improve quality of care and survivorship.

I want to thank those who have taken the time to get screened for cancer, participate in a clinical trial, support a friend through treatment, or celebrate remission and survivorship with loved ones. I stand with those who suffer through this devastating disease. And I thank the more than 100 experts across Colorado who generously gave of their time, knowledge and passion to develop this plan.

Working together as we have for the past 20 years, we can use this new plan to continue to reduce the burden of cancer on all Colorado families and deliver on our promise of making Colorado the healthiest state in the nation.

Yours in health,

Dr. Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

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INTRODUCTION

The Colorado Cancer Plan has guided the prevention, treatment and control of cancer statewide for more than 20 years. The 2016-20 state cancer plan continues in that tradition, providing a five-year framework to reduce the risk, incidence and mortality associated with cancer in Colorado. This plan represents a shared approach to overcoming Colorado's cancer challenges through primary prevention, early detection, effective treatment and support for survivors from the time of diagnosis until the end of life.

This five-year plan is built on a strong foundation. It describes the state's cancer burden, including the disparate impact cancer has on Colorado's low-income, uninsured and racial/ethnic populations. It paints a picture of a state health care climate conducive to reducing that burden, building on the contributions and opportunities from health care reform. And it traces the history of cancer control in Colorado and the evolution of the collaborative statewide efforts to reduce the impact cancer has on Coloradans.

The process for developing the state's cancer plan relied on contributions from individuals across Colorado, support from the U.S. Centers for Disease Control and Prevention (CDC) National Comprehensive Cancer Control Program (NCCCP), and the expertise and commitment of state and local health agencies. This plan challenges Colorado's cancer community to think strategically about new partnerships and collective efforts to expand the plan's reach and effectiveness.

Effective collaboration starts with common goals, objectives and measures. The plan's objectives are organized along the cancer continuum of care rather than by type of cancer. It is not a detailed action plan, but rather a roadmap of broad goals, specific objectives, and evidence-based strategies organized into these five areas of focus:

Prevention: Encourage healthy behaviors and a less harmful environment to lower the risk of cancer.

Screening: Promote the benefits and increased coverage of appropriate screening tests to ensure early and effective diagnosis.

Diagnosis and Treatment: Reduce the barriers to early diagnosis and treatment, ensure best practices and encourage participation in clinical trials.

Survivorship And End-Of-Life Care: Ensure services and resources necessary to support the continued physical and mental health of a growing number of cancer survivors.

Cross-Cutting: Support the integration and training of patient navigators and community health workers and promote awareness of available insurance coverage.

Cancer has an impact on all Coloradans. The Colorado Department of Public Health and Environment recommends the Colorado Cancer Plan as a roadmap to preventing and controlling cancer. All Coloradans are touched by cancer. It is only by working together that we can reduce the burden of cancer in our state and make sure Colorado is the healthiest state in the nation.

WHAT YOU CAN DO

Everyone in Colorado has a role to play in preventing and controlling cancer, and in supporting Colorado's cancer survivors.

Together we can make a difference.

Legend:

- Prevention
- Screening & Early Detection
- Both
- Diagnosis and Treatment
- Survivorship* and End-of-Life Care
- Both
- All/Cross Cutting

ANY COLORADAN CAN…

	LUNG	COLO-RECTAL	BREAST	PROSTATE	CERVICAL	MELANOMA	PANCREAS	PEDIATRIC	LIVER	OVARIAN
Maintain healthy weight by eating well and exercising.		Prevention	Prevention		Prevention		Prevention		Prevention	Prevention
Be safe in the sun and refrain from indoor tanning.						Prevention				
Get vaccinations that prevent cancer, such as HPV and Hepatitis B.					Prevention				Prevention	
Get screened for cancer according to national guidelines.	Screening & Early Detection	Both	Screening & Early Detection	Screening & Early Detection	Screening & Early Detection					
Support smoke-free workplaces, schools and parks, and quit smoking.	Prevention	Prevention			Prevention		Prevention		Prevention	Prevention
Participate in cancer research through surveys, trials and/or other methodologies.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Volunteer to help those whose lives are affected by cancer.	Both	Both	Both	Both	Both	Both	Both	Both	Both	Both

LOCAL PUBLIC HEALTH AGENCIES AND COMMUNITY ORGANIZATIONS CAN…

	LUNG	COLO-RECTAL	BREAST	PROSTATE	CERVICAL	MELANOMA	PANCREAS	PEDIATRIC	LIVER	OVARIAN
Collaborate to remove barriers to cancer prevention, screening, treatment and support.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Provide or host cancer survivor support groups.	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care	Survivorship* and End-of-Life Care
Assist community members with signing up for health insurance.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Provide cancer information and resources that resonate with those you serve.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Help those you serve to find out where they can receive cancer screenings and immunizations covered by their insurance.	Screening & Early Detection	Both	Screening & Early Detection	Screening & Early Detection	Both				Prevention	

+ Includes all cancer survivors, regardless of treatment status (e.g., in treatment, post-treatment)

WHAT YOU CAN DO

Legend:

Prevention · Screening & Early Detection · Both | Diagnosis and Treatment · Survivorship and End-of-Life Care · Both | All/Cross Cutting

PROVIDERS AND HEALTH CARE SYSTEMS CAN...

	LUNG	COLO-RECTAL	BREAST	PROSTATE	CERVICAL	MELANOMA	PANCREAS	PEDIATRIC	LIVER	OVARIAN
Offer patient navigation for cancer screening, treatment and survivorship.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Refer to or integrate mental health services for cancer survivors.	Both	Both	Both	Both	Both	Both	Both	Both	Both	Both
Use electronic medical records and other reminder systems to keep individuals up-to-date on cancer screenings and vaccinations that prevent cancer.	Screening & Early Detection	Both	Screening & Early Detection	Screening & Early Detection	Both				Prevention	
Implement brief interventions, such as motivational interviewing, to improve individual health behaviors such as smoking, alcohol use, poor diet and physical inactivity.	Prevention	Prevention	Prevention		Prevention		Prevention	Survivorship and End-of-Life Care	Prevention	Prevention
Use best practices to assess personal or family cancer history.		Both	Both	Screening & Early Detection			Screening & Early Detection			Both
Connect patients and survivors to cancer research.	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment
Submit cancer cases to the cancer registry.	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment	Diagnosis and Treatment

HEALTH INSURERS AND POLICYMAKERS CAN...

	LUNG	COLO-RECTAL	BREAST	PROSTATE	CERVICAL	MELANOMA	PANCREAS	PEDIATRIC	LIVER	OVARIAN
Support access to and coverage of smoking cessation classes, nutrition programs, mental health providers and cancer treatment drugs.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Ensure no cost sharing for all recommended cancer screenings and immunizations.	Screening & Early Detection	Both	Screening & Early Detection	Screening & Early Detection	Both				Prevention	
Streamline access and reduce out-of-pocket costs to participate in cancer research including clinical trials.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Support policies that make it easy for Coloradans to make healthy choices and to reduce their exposure to environmental carcinogens.	Prevention	Prevention	Prevention	Prevention	Prevention	Prevention	Prevention	Survivorship and End-of-Life Care	Prevention	Prevention

EMPLOYERS AND PROFESSIONAL ORGANIZATIONS CAN...

	LUNG	COLO-RECTAL	BREAST	PROSTATE	CERVICAL	MELANOMA	PANCREAS	PEDIATRIC	LIVER	OVARIAN
Educate the public, employees and policymakers about best practices for cancer screening, treatment and survivorship support, including the importance of research funding.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Support cancer survivors so they can continue to be successful employees.	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care	Survivorship and End-of-Life Care
Offer employee benefits that encourage wellness.	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting	All/Cross Cutting
Provide time off for recommended cancer screenings and immunizations.	Screening & Early Detection	Both	Screening & Early Detection	Screening & Early Detection	Both				Prevention	

COLORADO CANCER BURDEN

In order to outline a comprehensive strategy for tackling cancer in Colorado, it was important for the collaborators behind the plan to identify the parameters of the problem and note critical Colorado-specific patterns in the incidence, prevalence, mortality and underlying risk factors.

The long-term goal of developing and implementing a state cancer plan is to reduce the incidence and mortality of cancer in Colorado. We have identified state trends in risk factors, cancer prevalence and mortality. Colorado Cancer Plan objectives and strategies target risk factors, cancer screening behaviors, access to public or private health insurance, and systemic and individual support for cancer survivors and their family members. By implementing these and related strategies over time, we will reduce the burden of cancer on Colorado.

RISK FACTORS

Lifestyle, genetic and non-genetic factors, independently or in combination, can increase an individual's risk of developing cancer. Changes in lifestyle, including reduction in tobacco use, modification of the diet to reduce fat and increase fiber consumption, and clinical interventions such as immunizations or removing a polyp during a colonoscopy, can significantly reduce mortality from some cancers. Reductions in cancer incidence achieved through risk factor interventions may also reduce cancer morbidity and mortality. State cancer data reveal the following risk factors that impact the burden of cancer in Colorado:

Behavioral Risk Factors:

Tobacco use: 15.7 percent of adults in Colorado currently use tobacco (2013).

HPV Immunizations: 42.1 percent of adolescent females and 21.9 percent of adolescent males have received three or more HPV doses (2014).

Radon: 42.0 percent of adults have tested their home for radon (2012).

Environmental Risk Factors:

Genetics: 5-10 percent of cancers are associated with a genetic disposition.

Age: An estimated 60 percent of new cancer cases occur in those over 65. Colorado's median age increased from 26.2 in 1970 and to 36.9 in 2015.

Poverty: 13.6 percent of Coloradans lived in poverty in 2012.

Age and Poverty: Only 48.9 percent of 50-74 year olds in poverty (<100%FPL) were up to date with colorectal cancer screening guidelines compared to 70.9 percent of those not in poverty (>200%FPL) (2012).

INCIDENCE

In 2013, 21,935 Coloradans were diagnosed with cancer. While state and national incidence rates have decreased since 1992, Colorado continues to have lower incidence and mortality rates than the national average. The incidence of cancer varies by gender, race/ethnicity and type of cancer, as noted in the list below. The data suggest that strategies may need to be tailored to appropriately address variations in need across different groups in the state.

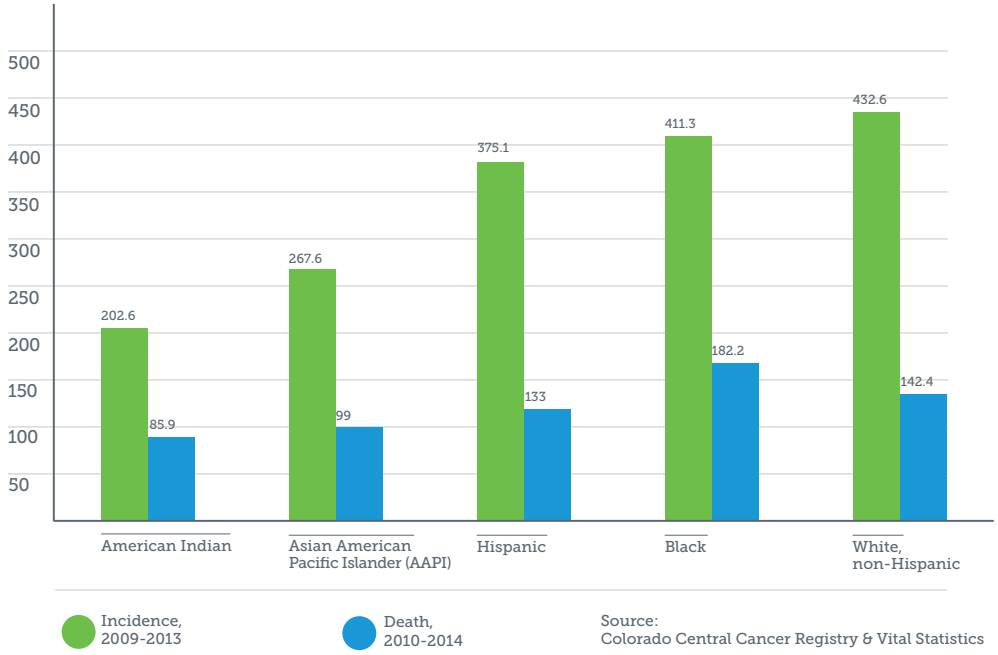
Gender: Men have a higher incidence rate of cancer (419.5 per 100,000) than women (382.8 per 100,000), except for lung cancer, where the gap in incidence between men and women has narrowed in recent years.

Race/ethnicity: Non-Hispanic men had the highest cancer incidence rate, followed in order by black men, non-Hispanic women, Hispanic men, black women and Hispanic women.

- The incidence of breast cancer in non-Hispanic women was 26 percent higher than that for Hispanic women and 11 percent higher than that for black women.
- The lung cancer incidence rate in black males was 50 percent higher than the rate for black women, and 16 percent higher than the rate for non-Hispanic men.
- The incidence of prostate cancer in black men was 30 percent higher than the rate for non-Hispanic and 58 percent higher than the rate for Hispanics.
- Colorectal cancer was diagnosed in black men over 60 percent more often than in black women and 16 percent more often than in non-Hispanic men.

Figure 1
Colorado Five-Year Annual Average, Age-Adjusted Incidence and Death Rates by Race/Ethnicity

Figure 1 illustrates age-adjusted incidence and death rates by race/ethnicity. Based on a five year annual average, blacks have the highest death rate and the second highest incidence rate.



PREVALENCE

Nearly 200,000 Coloradans are alive with active cancer or a history of cancer. Of those recently diagnosed, 67 percent are expected to live five years or longer, greater than the 63 percent survival rate for those diagnosed during 1996-2000. Survival improvements are especially noteworthy for those persons diagnosed in later stages when comparing rates from 1996-2000 and 2006-2010: Regional stage survival increased from 62 percent to 69 percent and distant stage survival climbed from 21 percent to 28 percent.

However, survival varies substantially for different types of cancers. For those diagnosed between 2006 and 2010, 95 percent of men with prostate cancer survived five years or more, while 90 percent of women with breast cancer survived at least that long. Only 48 percent of women with ovarian cancer survived five years or longer. Colorado's cancer survival rates have improved consistently since the state began developing and implementing cancer plans; however, more work is still needed and the plan highlights opportunities to further improve survivorship data.

MORTALITY

Cancer has been the leading cause of death in Colorado since 2004. In 2014, there were 7,289 cancer deaths in Colorado, for a mortality rate of 133.4 per 100,000. Figure 2 describes cancer deaths in Colorado from 2010-14, with lung, colorectal and breast comprising the top three cancer sites.

There are racial differences as well, with blacks having higher cancer mortality rates than non-Hispanic, and Hispanics having lower cancer mortality rates than non-Hispanic. For specific cancer sites, there also are gender and racial differences.

Lung cancer, 2010-14

- Hispanic women had a 30 percent lower mortality rate than non-Hispanic women.
- Black men had a 31 percent higher mortality rate than non-Hispanic men.
- Hispanic men had a 20 percent lower mortality rate than non-Hispanic men.

Prostate cancer, 2010-14

- Black men had more than twice the mortality rate of non-Hispanic men.

Colorectal cancer, 2010-14

- Black men had a 50 percent higher mortality rate than non-Hispanic men.

Breast cancer, 2010-14

- Black women had a 31 percent higher mortality rate than non-Hispanic women.

The reasons for these variations in outcomes by race, gender, and ethnicity are complex. Understanding the factors that create these disparities allows implementers of the cancer plan to target interventions that can improve survival and narrow outcome gaps.

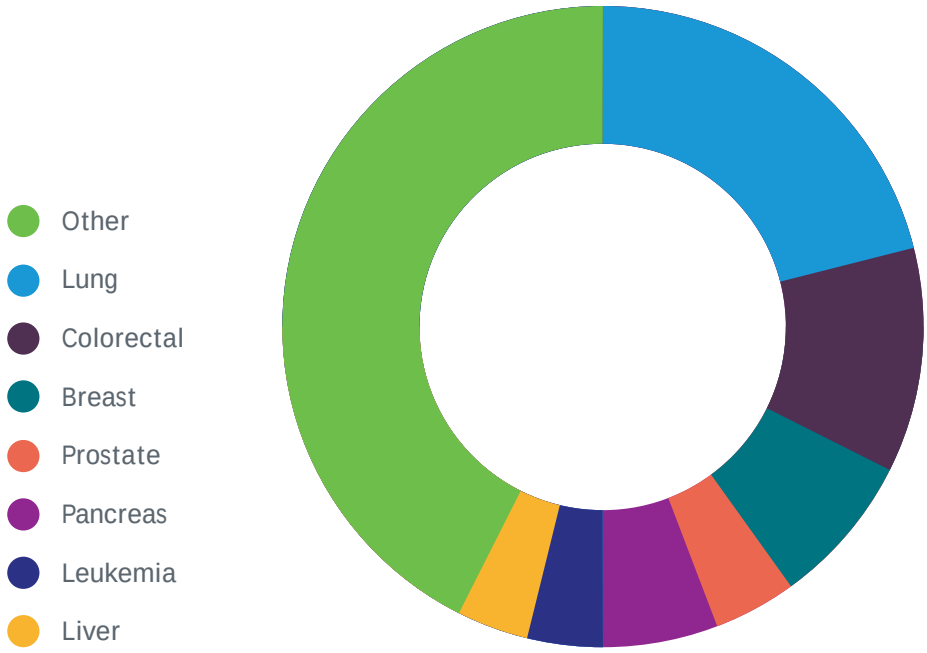


Figure 2
Colorado Cancer Deaths, 2010-2014

Source: Colorado Central Cancer Registry & Vital Statistics

By Incidence, 2009 -2013	**By Mortality,** 2010 -2014
1. Breast	1. Lung
2. Prostate	2. Colorectal
3. Lung	3. Breast
4. Colorectal	4. Prostate
5. Melanoma	5. Pancreas
6. Bladder	6. Leukemia
7. Non-Hodgkin Lymphoma	7. Liver
8. Thyroid	8. Non-Hodgkin Lymphoma
9. Kidney	9. Brain
10. Leukemia	10. Ovary

Table 1
Top Cancers in Colorado

Table 1 lists the top 10 cancer sites by incidence (2009-13) and mortality (2010-14). Four cancers in particular - lung, colorectal, breast and prostate - are the most common cancers and the most lethal.

Source: Colorado Central Cancer Registry & Vital Statistics

HEALTH EQUITY

Health disparities persist in Colorado. Poverty and race affect where people live and work, the toxins to which they are exposed and their levels of chronic stress from the daily struggle of living with systemic injustice. Coloradans in poverty are less likely to have access to healthy foods, physical activity and affordable health care. Socioeconomic status, race/ethnicity and gender are important factors in determining the relationship between cancer risk and outcomes.

Poverty is an important contributor to the racial/ethnic disparities evident in the burden of cancer, which is unsurprising because racial/ethnic minority groups in Colorado bear a disproportionate burden of poverty as well (Cancer and Poverty: Colorado 2001–2012). Because of this disparity, poverty, race and ethnicity constitute important risk factors for cancer incidence, stage of diagnosis and mortality. Only 8.5 percent of non-Hispanic whites live in poverty, compared to 10.6 percent of Asian/Pacific Islanders, 23.7 percent of American Indian/Alaska Natives, 24.3 percent of blacks, and 24.4 percent of Hispanics. The relationships between poverty and cancer emerge from the differences between socioeconomic groups in their use of tobacco, screening for cancer and access to appropriate cancer treatment.

- For most cancers, Coloradans who lived in poorer neighborhoods and were uninsured were more likely to have had a more advanced stage of cancer at the time of diagnosis.
- Cancers among those younger than 65 years were more likely to be diagnosed early in those with private insurance compared to those who had no insurance or Medicaid.
- For most cancers, Coloradans who lived in poorer neighborhoods were more likely to die within the first five years following cancer diagnosis.

Improvements in health equity emerge when paths that lead to good health are equally available to all. Colorado is addressing the lack of health equity at all levels. Programs like the Colorado Opportunity Project, managed by the Colorado Department of Health Care Policy and Financing, and the Health Disparities grant program, managed by the Office of Health Equity at the Colorado Department of Public Health and Environment, are working to address poverty, limited education and financial and geographic barriers to health care access and use. The objectives in the cancer plan focus on removing barriers that stand in the way of preventing cancer, getting high-quality and timely screenings, having access to the right treatment and receiving the right care and support during treatment and survivorship.

COLORADO CANCER CONTROL CLIMATE

Much has changed since Colorado wrote its first comprehensive cancer control plan in 1996. As the American Cancer Society reports, "Scientists have learned more about cancer in the last two decades than had been learned in all the centuries preceding." It is an exciting and important time to strengthen partnerships, focus on priorities and provide public health solutions and support for the dynamic advances in cancer research and clinical practice.

In addition to the rapidly changing science, the Affordable Care Act is changing the health care landscape. It has expanded health care coverage under private insurance and Medicaid, focused on prevention, targeted patient engagement and increased clinic-to-community linkages. Such improvements should increase screening and treatment options for disparate populations. Although the Affordable Care Act has removed the pre-existing conditions policies that made it difficult for cancer survivors in the past, financial obstacles and medical debt continue to be a significant challenge for families coping with cancer. Low-cost health plans may require a substantial out-of-pocket deductible before the coverage benefits of insurance support health care services, which can create economic barriers for those diagnosed with cancer.

A demographic shift may underlie the current and future patterns in the incidence and prevalence of cancer in Colorado. The state demographer predicts Colorado's 65-and-over population will increase from 555,000 to 900,000 between 2010 and 2020. In 2013, 51 percent of new cancer cases occurred in those 65 years and older, and it is expected that in 2020, 57 percent of all cancers will occur in those 65 years and older. Like many other states, Colorado must strengthen its prevention, screening and treatment efforts to deal with the expected increase in cancer cases and continue approaching cancer as a chronic disease.

COLORADO CANCER PLAN EVOLUTION

The "Colorado Cancer Prevention and Control Plan 2000" published in 1996 was the state's first five-year plan, setting statewide goals and strategies for cancer control based on cancer death rate trends from the late 1980s and early 1990s. Many of the goals in the original plan were met or exceeded.

In 1998, the Centers for Disease Control and Prevention (CDC) established the National Comprehensive Cancer Control Program (NCCCP) to support states' efforts to achieve their cancer goals and implement evidence-based strategies. The CDC program provides funding and technical support to states for the development and implementation of comprehensive cancer control plans. These plans focus on current and emerging cancer issues, including prevention, early detection, treatment, rehabilitation and survivorship. The Colorado Department of Public Health and Environment first received a funding award from the CDC's NCCCP in 1998 and is on its fourth, five-year round of funding, which will end in June 2017.

In 2000, goals for the year 2010 were established; these goals stimulated new dialogue and a subsequent update of the Colorado Cancer Plan which was released in 2005. This iteration of the state cancer plan included data on cancer incidence and mortality, and described risk factors, screening guidelines, prevention strategies and treatment recommendations. Cancer death rates continued to decline from 1998 to 2007, from a 7.7% decrease for colorectal cancer to a 23.8 percent drop in lung cancer deaths.

The 2005-2010 and 2010-2015 cancer plans based their objectives for reducing cancer burden in Colorado on surveillance data and national objectives, as well as issues unique to Colorado. Both plans covered strategies to curb cancer mortality; narrow health disparities; improve prevention and early detection; enhance treatment, rehabilitation, and quality of life; and expand surveillance activities. Cancer death rates continued to decline from 2005 to 2014, falling 16 percent for all cancers, 19 percent for breast cancers, 25 percent for prostate cancers, 26 percent for lung cancers and 27 percent for colorectal cancers.

Although the reasons for declining cancer rates over the years are multifaceted, efforts guided by the Colorado Cancer Plan have played an integral part in this progress. The 2016-2020 Colorado Cancer Plan is intended as a framework for continued improvements by the year 2020 and grows from the long and successful history of cancer control in Colorado.

THE COLORADO CANCER PLAN PROCESS

The 2016-20 Colorado Cancer Plan revision process took place over two years, from October 2013 through December 2015. It was designed to gather feedback from cancer stakeholders at multiple points in time for the purpose of developing and refining a comprehensive plan. A cancer plan steering committee oversaw the revision and made recommendations and decisions regarding the plan's structure, format, content and timeline.

The steering committee reviewed 17 non-Colorado state cancer plans and five Colorado chronic disease plans. The Colorado Cancer Coalition members reviewed current plan successes and brainstormed ideas for the new plan. This led to the decision to structure this plan based on the cancer continuum of care rather than by cancer site. A plan organized by the continuum of care structure allows Colorado to identify and focus on collaborative opportunities that can impact multiple cancer sites at once using population health approaches.

The steering committee set forth 14 goals across the cancer continuum of care: prevention, screening, treatment and survivorship. Task forces used these goals to develop SMART objectives and strategies to achieve the overarching goals.

The Cancer Plan Steering Committee and task forces developed a final list of 13 goals encompassing 36 objectives across prevention, screening, treatment, survivorship and cross-cutting strategies. It was put forth for public comment on Aug. 20, 2015. Each objective received at least one public comment, with comments ranging from "very good" or "drop," to suggestions about additional evidence-based strategies and requests for clarifications on some measurement items. The Cancer Plan Steering Committee reviewed public comments and made recommendations to revise or retain content. The final plan emerged from this collaborative process and encompasses five chapters with 11 goals and 29 objectives.

PROMOTING CHANGE THROUGH POLICY, SYSTEMS AND ENVIRONMENTAL STRATEGIES

In selecting strategies to reach objectives, Colorado is putting a greater emphasis on strategies that change the context in which Coloradans live. While the plan includes strategies that focus on helping people make good choices for their health, there is an increased focus on objectives and strategies that have more of a population-based effect.

In particular, the plan supports policies (such as increasing the purchase price of tobacco, workplace policies on leave time for screenings or insurance coverage policies), systems changes (such as patient reminder systems) and environmental changes to create the context for cancer prevention and control. These strategies work together with individual health behavior strategies such as motivational interviewing, as they allow for opportunities to make healthy choices and ultimately to help reduce health inequities.

CANCER PLAN EVALUATION

The 2016-20 Colorado Cancer Plan is grounded in evidence and driven by measurable objectives.[1] Shared targets are achievable, align with state and national goals, and focus on strategic, collaborative progress. These targets are based on current trends, but challenge Colorado to reach new levels of cancer prevention, screening and effective treatment; improve support for survivors; and close existing gaps in health inequities. Colorado will track progress annually and share results with state partners, allowing the state and its partners to gauge progress, identify gaps and change direction as needed.

Data for assessing burden, setting objectives, and subsequently evaluating progress generally draws from consistently collected and reported sources. In total, seventeen different data sources were accessed to determine baseline measures for objectives. Descriptions of nine sources are below:

All Payer Claims Database (APCD): The APCD houses Colorado claims data from commercial health plans, Medicare and Medicaid, with the first submission of claims data in June 2012. The purpose of the database is to allow for assessment of variations in health care cost and use.

Behavioral Risk Factor Surveillance System (BRFSS): The BRFSS is an annual telephone survey that collects data about health-related behaviors, chronic health conditions and use of preventive services.

Colorado Child Health Survey (CCHS): The CCHS is designed to fill the health data gap in Colorado that exists for children ages 1–14, administered to BRFSS responding adults with a child in this age range.

The Colorado Health Access Survey (CHAS): The CHAS is a statewide telephone survey that collects data on health insurance coverage, access to health care and use.

Colorado Central Cancer Registry (CCCR): CCCR is the statewide cancer surveillance program that collects and reports data on cancer incidence and mortality, including type, stage at diagnosis and five-year survival rates.

Colorado Environmental Public Health Tracking Network (COEPHT): COEPHT is a web-based surveillance system designed to provide easily accessible data on environmental hazards, exposures and health effects.

Healthy Kids Colorado Survey (HKCS): The HKCS is a single, comprehensive, biannual survey system to measure youth health behaviors in Colorado.

National Immunization Survey (NIS) Teen and Children: The NIS is an annual national survey used to monitor vaccine coverage in relation to the Advisory Committee on Immunization Practices for children 6 months to 17 years. The NIS consists of two parts, a phone survey for parents and a questionnaire for providers of the phone respondent's children to collect vaccination records.

The Attitudes and Behaviors Survey (TABS) on Health: TABS on Health is a population-level survey of Colorado adults to identify and understand influential public health factors. It is administered every 3–4 years to 12,000 to 18,000 randomly selected adults to collect data on ongoing chronic diseases and health risks.

[1] The plan's measures are largely drawn from existing data sources, including Colorado surveillance data. In some cases, where no data source or baseline measure is identified, one may need to be established as part of the plan's implementation. For example, the Colorado Central Cancer Registry may need to alter its required data fields in order to support a trackable and outcome-focused indicator identified in the plan.

PREVENTION

Prevention continues to be one of the best tools in the fight against cancer. Individual behaviors, system improvements and state and local policy changes have made, and will continue to make, an impact on cancer prevention and control. Avoiding tobacco, eating well, exercising, maintaining a healthy weight, practicing sun safety, and reducing or avoiding exposure to carcinogens can lower a person's cancer risk. Discussing the history of cancer in one's family with a doctor can guide screening recommendations and referrals to genetic counseling. These ideas form the first four goals of the new state cancer plan.

GOAL 1: REDUCED INITIATION AND USE OF TOBACCO PRODUCTS

OBJECTIVE 1.1:

Decrease tobacco use.

STRATEGIES:

1. Establish, promote and enforce laws prohibiting the sale and restricting the marketing of tobacco products to minors, including increasing the allowable age to purchase tobacco products to 21 and increasing local point-of-purchase ordinances designed to protect minors.
2. Increase the purchase price of tobacco products.
3. Implement health systems change strategies to increase access to and use of evidence-based cessation services, including referrals to the QuitLine.
4. Educate youth on the risks of all tobacco product use, including e-cigarettes, and support positive youth development skills, targeting those under 18 years and those 18-24 years.
5. Implement community outreach and education programs designed to reduce all forms of tobacco use.
6. Institutionalize and standardize tobacco screening and evidence-based brief interventions such as Ask, Advise, Refer (AAR) or Ask, Advise, Assess, Assist or Arrange (5As).

MEASURES:

Current high school smokers Baseline: **10.7%** *(2013 HCKS)*	2020 Target: **5%**
Current adult smokers Baseline: **15.7%** *(2014 BRFSS)*	2020 Target: **12%**
Straight-to-work young adults ages 18–24 who are current smokers Baseline: **31.9%** *(2012 TABS)*	2020 Target: **25.9%**

SMOKING AND CANCER

Smoking is the most preventable cause of cancer. According to the U.S. Centers for Disease Control and Prevention, one out of three cancer deaths in the U.S. would be prevented if no one smoked.

It is well known that smoking causes lung cancer; approximately 9 out of every 10 lung cancers are caused by smoking cigarettes. Smoking is a risk factor for other types of cancer as well, including cancers of the blood, bladder, cervix, colon and rectum, esophagus, head and neck, kidney, liver, pancreas and stomach.

Secondhand smoke is a combination of the smoke in the air from a burning cigarette, cigar or pipe, and the smoke exhaled by a person smoking. Secondhand smoke is the third most preventable cause of death and disease in Colorado after active smoking and excessive alcohol drinking; just thirty minutes of exposure can compromise the cardiovascular system of nonsmokers by reducing blood flow to the heart.

OBJECTIVE 1.2:

Decrease exposure to secondhand smoke.

STRATEGIES:

1. Maintain enforcement of no-smoking rules within 25 feet of building entries.
2. Develop, implement, monitor, protect, strengthen and expand policies that protect populations from secondhand smoke exposure at home, in outdoor public places, at work and in multi-unit housing. For example, enact smoking bans in public housing units that also include an educational component about evidence-based cessation interventions.

MEASURES:

Exposure to secondhand smoke in multi-unit housing Baseline: **54.4%** *(2011 BRFSS)*	2020 Target: **26%**
Children who live with a smoker in the home who are exposed to secondhand smoke Baseline: **53.6%** *(2012 CCHS)*	2020 Target: **28%**

OBJECTIVE 1.3:

Increase successful quit attempts among tobacco users.

STRATEGIES:

1. Institutionalize and standardize tobacco screening and evidence-based brief interventions such as Ask, Advise, Refer (AAR) or Ask, Advise, Assess, Assist or Arrange (5As).
2. Expand access to and use of tobacco cessation services, including the QuitLine; and treatment, particularly among Medicaid clients through health care delivery interventions.
3. Implement media campaigns with cessation promotion messaging to increase the number of quit attempts and successes among smokers, focusing on low-socioeconomic status adults.

MEASURES:

Adult smokers who successfully quit tobacco in the past 12 months Baseline: **9.3%** *(2012 TABS)*	2020 Target: **15%**
Adults smokers who attempted cessation in the past 12 months Baseline: **63%** *(2014 BRFSS)*	2020 Target: **75%**

GOAL 2: INCREASED PREVALENCE OF HEALTHY BEHAVIORS

OBJECTIVE 2.1:

Decrease the prevalence of overweight and obesity.

STRATEGIES:

1. Promote and implement model policies and programs in the built environment that lead to increased access to walking, biking and other physical activity.
2. Implement and disseminate evidence-based weight loss programs, such as the Diabetes Prevention Program.
3. Develop and implement policies and programs that protect, promote and support breastfeeding-friendly environments.
4. Improve nutrition and physical activity environments for children younger than 18 years via early childhood education centers and schools, especially those that serve low-income populations. For example, promote professional development of staff, high-quality health and physical education, high-quality school meal programs and student engagement.
5. Increase access to worksite wellness programs that implement and communicate best practices in worksite wellness activities.
6. Increase healthy food and beverage retail opportunities, particularly in rural and underserved communities, by supporting healthy product procurement, placement and pricing strategies.

MEASURES:

Low-income children ages 2–5 years who are overweight or obese Baseline: **22.9%** *(2012 WIC)*	2020 Target: **20.6%**
Children ages 2–14 years who are overweight or obese Baseline: **26.4%** *(2013 CCHS)*	2020 Target: **23.8%**
Adolescents in grades 9–12 who are overweight or obese Baseline: **19.3%** *(2013 HKCS)*	2020 Target: **17.4%**
Adults ages 18+ who are overweight or obese Baseline: **57.4%** *(2014 BRFSS)*	2020 Target: **50.8%**
Adults ages 18+ who are obese Baseline: **21.3%** *(2014 BRFSS)*	2020 Target: **20%**
Adults who report no leisure time physical activity in the past 30 days Baseline: **16.4%** *(2014 BRFSS)*	2020 Target: **14.8%**
Adults who report eating at least one fruit and one vegetable per day Baseline: **57.1%** *(2013 BRFSS)*	2020 Target: **65.7%**

OBESITY AND CANCER

Keeping a healthy body weight lowers the risk of many diseases, including cancer. Body Mass Index, or BMI, is a quick, non-invasive way to estimate if a person is at a healthy weight based on height and weight.

Obesity (a BMI over 30) is associated with an increased risk of the following cancers:

- Breast (after menopause)
- Colon and Rectum
- Esophagus
- Endometrium
- Pancreas
- Kidney
- Thyroid
- Gallbladder

Eating a healthy diet and getting regular physical activity are the best ways to maintain a healthy weight. Communities can support individuals by establishing:

- Financial and geographic access to healthy and affordable foods.
- Safe places to exercise, including walkable and bikeable communities.

Sources:
National Cancer Institute, Obesity and Cancer Risk, http://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/obesity-fact-sheet#q3. Accessed 10 August 2015.

Centers for Disease Control and Prevention, Strategies to Prevent Obesity: Community Efforts. http://www.cdc.gov/obesity/strategies/community.html. Accessed 10 August 2015.

OBJECTIVE 2.2:

Decrease the proportion of adults exceeding dietary guidelines for moderate drinking.

STRATEGIES:

1. Promote the use of electronic screening and brief intervention (e-SBI) to facilitate delivery of personalized feedback about risks and consequences of excessive drinking.
2. Educate the general public on cancer risk related to alcohol use.
3. Strengthen accountability in Colorado by holding social hosts liable for alcohol attributable harm.
4. Increase purchase price of alcohol.

MEASURES:

Women ages 21+ who exceed dietary guidelines for moderate drinking Baseline: **39.6%** *(2014 BRFSS)*	2020 Target: **35%**
Men ages 21+ who exceed dietary guidelines for moderate drinking Baseline: **43.4%** *(2014 BRFSS)*	2020 Target: **40%**
Men ages 18+ who binge drank in the past 30 days Baseline: **22.8%** *(2014 BRFSS)*	2020 Target: **20%**
Women ages 18+ who binge drank in the past 30 days Baseline: **12.2%** *(2014 BRFSS)*	2020 Target: **11%**

OBJECTIVE 2.3:

Decrease exposure to Ultraviolet (UV) Radiation.

STRATEGIES:

1. Raise awareness through school outreach regarding the risks of UV tanning.
2. Include warning labels on UV tanning bed advertisements.
3. Prohibit use of indoor UV tanning devices by minors.
4. Develop educational materials for state and local policymakers on the risks of indoor tanning.
5. Raise awareness of indoor tanning as a liability for institutions of higher education and implement strategies that reduce or eliminate indoor UV tanning.
6. Educate adults on the risks of indoor UV tanning beds.
7. Advocate for workplaces to establish sun safety guidelines, procedures and policies for workers.
8. Advocate for local governments and parks departments to establish design guidelines and policies to promote increased sun protection and shade.
9. Educate adults and children, in particular those who participate in outdoor recreation, on sun safety behaviors.
10. Advocate for schools, preschools and child care centers to establish sun safety guidelines, procedures and policies.
11. Educate students, particularly those in kindergarten through 8th grade, about sun safety and the effects of ultra-violet (UV) radiation; reinforce by modeling, demonstration or role-playing.

MEASURES:

Youth in grades 9–12 using a tanning bed Baseline: **6.1%** *(2013 HKCS)*	2020 Target: **0%**
Adults 18+ who use at least one method of sun protection when outside during a sunny summer day for more than one hour Baseline: **70.3%** *(2014 BRFSS)*	2020 Target: **75%**
Children (0–14) who use at least one method of sun protection when outside for more than 15 minutes between 11 a.m. and 3 p.m. Baseline: **77.8%** *(2012 CCHS)*	2020 Target: **82%**
Adults with at least one sunburn in the past year Baseline: **37.5%** *(2014 BRFSS)*	2020 Target: **33%**
Children (0-14) with at least one sunburn in the past year Baseline: **45.6%** *(2012 CCHS)*	2020 Target: **40%**

GOAL 3: INCREASED UPTAKE OF CLINICAL INTERVENTIONS TO PREVENT CANCER

OBJECTIVE 3.1:

Increase collection and use of family history of cancer to ensure appropriate and risk-based cancer prevention messaging, screening and referrals.

STRATEGIES:

1. Support efforts, including those from the National Colorectal Cancer Roundtable, seeking to standardize family history data collection in electronic health records to allow providers to identify individuals whose family history meets the clinical criteria for a hereditary cancer syndrome and those who should be referred to a genetic counselor.
2. Educate providers on guidelines for family history collection and referral for genetic counseling and testing, including potential BRCA1/2 mutations or Lynch Syndrome.
3. Conduct demonstration projects that implement family history screening tools in primary or specialty care settings to identify patients at risk for hereditary cancer.
4. Develop referral and communication systems to facilitate on-site or referred cancer risk assessment, genetic counseling, including tele-counseling, and testing services by a qualified genetics professional.
5. Promote access to genetic counseling based on risk assessment prior to genetic testing to review potential risks and benefits, including post-test risk and benefits when prophylactic options are under consideration.
6. Identify funding sources for genetic counseling and testing for at-risk individuals who are unable to pay.
7. Promote appropriate insurance coverage, especially Medicaid coverage, of genetic counseling, testing and ensuing clinical services for high-risk individuals.

MEASURES:

Adults who discussed their family's history of cancer with a health care provider Baseline: **TBD**[2] *(2016 BRFSS)*	2020 Target: **TBD**[2]
Adults with a close family member diagnosed with breast or colorectal cancer who are up to date with modified cancer screening recommendations Baseline: **TBD**[2] *(2016 BRFSS)*	2020 Target: **TBD**[2]

[2] *The 2016 BRFSS questionnaire includes two new questions on cancer family history. The baseline measure and target will be identified once the 2016 BRFSS data is released, likely summer 2017.*

OBJECTIVE 3.2:

Increase HPV and Hepatitis B vaccine uptake.

STRATEGIES:

1. Promote vaccination programs and requirements in schools and hospitals.
2. Educate parents about the Hepatitis B and HPV vaccine as a cancer prevention method.
3. Implement vaccine reminder and recall systems targeted at providers and clients in pediatric and primary care provider offices.
4. Participate in the Colorado Immunization Information System to track vaccine uptake within clinics.
5. Implement provider assessment and feedback quality improvement processes.
6. Implement provider reminder systems to discuss vaccines with parents/guardians.
7. Implement standing provider orders for Hepatitis B and HPV vaccination.

MEASURES:

Females ages 13–17 who have received at least one dose of the HPV vaccine Baseline: **62.5%** *(2014 NIS-Teen)*	2020 Target: **80%**
Males ages 13–17 who have received at least one dose of the HPV vaccine Baseline: **40.7%** *(2014 NIS-Teen)*	2020 Target: **80%**
Females ages 13–17 who have received three or more doses of the HPV vaccine Baseline: **42.1%** *(2014 NIS-Teen)*	2020 Target: **80%**
Males ages 13–17 who have received three or more doses of the HPV vaccine Baseline: **21.9%** *(2014 NIS-Teen)*	2020 Target: **80%**
Adults ages 18-26 who have received an HPV vaccine Baseline: **36.5%** *(2014 BRFSS)*	2020 Target: **80%**
Adults ages 18-26 who have received three doses of the HPV vaccine Baseline: **19.9%** *(2014 BRFSS)*	2020 Target: **80%**
Teens ages 13-17 who have received three valid doses of Hepatitis B vaccine Baseline: **95.1%** *(2014 NIS-Teen)*	2020 Target: **97%**
Infants who received a Hepatitis B birth dose Baseline: **68.2%** *(2014 NIS-Children)*	2020 Target: **75%**

OBJECTIVE 3.3:

Decrease chronic cases of Hepatitis C.

STRATEGIES:

1. Educate high-risk populations, including injection drug users, on how to prevent contracting Hepatitis C.
2. Educate high-risk populations, including veterans and baby boomers, on the importance of getting tested for Hepatitis C.
3. Implement standing provider orders for Hepatitis C testing of adults born between 1945-1965 and those considered high risk.
4. Promote access and coverage for Hepatitis C treatment among public and private health plans.

MEASURE:

Adults born between 1945-1965 who have been tested for the Hepatitis C antibody Baseline: **3%** *(2013 APCD)*	2020 Target: **30%**

GOAL 4: DECREASED ENVIRONMENTAL EXPOSURES THAT LEAD TO CANCER

OBJECTIVE 4.1:

Increase knowledge and community infrastructure to decrease exposure to radon.

STRATEGIES:

1. Educate the Colorado public, home owners, building owners, sellers, Realtors and policymakers about radon and its risk for lung cancer.
2. Educate builders, code officials, city councils and county commissioners on radon facts, health effects and implementation of radon-resistant features in new construction.
3. Promote environmental equity through radon testing and mitigation programs and outreach efforts directed at minority or indigent populations.
4. Engage and educate Realtors, homebuyers and sellers on the importance of radon testing and information disclosure during real estate transactions.

MEASURES:

Adults who know about radon Baseline: **72%** *(2012 BRFSS)*	2020 Target: **80%**
Adults who test their homes for radon Baseline: **42%** *(2012 BRFSS)*	2020 Target: **50%**
Cities and counties with local building codes for radon-resistant features in new construction Baseline: **26** *(2015 CDPHE Radon Program)*	2020 Target: **30**

OBJECTIVE 4.2:

Increase testing of household drinking water wells.

STRATEGIES:

1. Partner with local public health agencies to educate private drinking well water owners and consumers on the facts and risks associated with arsenic.
2. Encourage testing of wells, including arsenic sampling at least once, targeting the north-eastern and southern areas of Colorado.
3. Partner with water testing labs to educate consumers on the importance of testing for cancer-related toxins.

MEASURES:

Households with drinking water wells that are tested in the past 5 years Baseline: **37%** *(2011 BRFSS)*	2020 Target: **47%**
Households with drinking water wells that are sampled for arsenic Baseline: **1.38%** *(2013 COEPHT)*	2020 Target: **5%**

THE SILENT KILLER: RADON IN COLORADO

After smoking, radon is the second leading cause of lung cancer in the United States. Radon is a colorless, odorless gas that comes from the natural breakdown of uranium in soil, rock and water. The geological makeup of Colorado puts all 64 counties at high risk for radon exposure.

"It's very important for people to test their home," states Chrystine Kelley, Radon Program Manager at the Colorado Department of Public Health and Environment (CDPHE).

A CDPHE study found that 72 percent of Coloradans were aware of the dangers of radon, but only 42 percent have tested their homes. State radon testing data show that about half of Colorado homes have radon levels above the recommended action limit of 4 picocuries per liter (pCi/L) of air.

There is no known safe level of radon and testing is the only way to know whether it is in your home at a dangerous level. Merely opening a window will not remove radon from the home; a mitigation system should be installed. If you have radon in your home and you smoke, your risk for lung cancer is significantly higher than it is from either being exposed to radon or smoking alone.

Seventeen cities and nine counties require new homes be built with radon-resistant features. "Even these homes," says Patricia Dooley-Strappelli of Boulder County Public Health, "should be tested every few years to make sure the system is working properly."

Colorado residents can call the state's 24-hour Radon Hotline at 1-800-846-3986 for more information.

OBJECTIVE 4.3

Decrease exposure to asbestos and diesel exhaust.

STRATEGIES:

1. Encourage use of certified asbestos building inspectors prior to renovation or demolition activities.
2. Educate homeowners on asbestos risk and requirements of the Air Quality Control Commission regulation 8, part B.
3. Increase the number and accessibility of CNG/Biodiesel fueling stations and electric vehicle supply equipment (EVSE) systems.
4. Develop a state and intrastate system of Compressed Natural Gas (CNG)/Biodiesel stations to increase their numbers and accessibility to promote and support local and long distance, commercial and diesel fleet use of alternative fuels.
5. Educate diesel fleet owners/drivers about the benefits of alternative fuel, including reduced emissions and cost.
6. Educate adults and students on the relationship between diesel exhaust and risks of respiratory illnesses and lung cancer.
7. Promote and implement workplace policies to reduce exposure to carcinogens.

MEASURES:

Monthly average page views of the CDPHE 'Certified individual, consulting firms, laboratories and disposal sites for asbestos' webpage Baseline: **889** *(2015 CDPHE Google Analytics)*	2020 Target: **935**
Gallons of displaced gasoline fuel due to alternative fuel use of compressed natural gas (CNG) and biodiesel Baseline: **4,953,887** *(2014 Clean Cities Coalitions)*	2020 Target: **5,201,581**
Middle and elementary schools that have completed the Clean Air at Schools: Engines Off! (CASEO) program Baseline: **43** *(2015 American Lung Association)*	2020 Target: **103**

SCREENING & EARLY DETECTION

Screening for cancer using nationally recognized cancer screening guidelines is an effective strategy for reducing cancer mortality and burden. There are several screenable cancers, and researchers are continually working on better and more refined screening tests for detecting cancer earlier. Some screening tests, such as colonoscopy, actually prevent cancer by finding and removing precancerous polyps. This creates new opportunities for public health and the medical community to improve their health literacy, shared decision-making and risk communication strategies. As guidelines change and new screening tests emerge, clear communication to answer key questions will be important. When is the right time to be screened or tested? What are the risks and benefits of the different test options? Ensuring that Coloradans are informed to make screening and testing decisions in conjunction with providers can empower individuals to follow through with screening services.

GOAL 5: INCREASED HIGH-QUALITY CANCER SCREENING AND EARLY DETECTION RATES

OBJECTIVE 5.1:

Increase high-quality, guideline-adherent, cancer screening rates among average risk individuals.

STRATEGIES:

1. Educate primary care providers on the importance of a provider recommendation and adhering to nationally recognized, evidence based cancer screening guidelines such as the United States Preventive Services Task Force (USPSTF), the National Comprehensive Cancer Network (NCCN), the American Cancer Society (ACS) and the American College of Radiology (ACR).
2. Promote informed decision-making at both the provider and individual level regarding the advantages and disadvantages of the prostate-specific antigen test for prostate cancer screening.
3. Promote informed decision-making at both the provider and individual level regarding breast cancer screening guidelines. Discussions should include the advantages and disadvantages related to the variations in how often and when to begin and end screening based on individual risk.
4. Educate patients and primary care providers on the importance of early detection of lung cancer among those who are high risk, and on the risks and benefits of screening.
5. Promote all modes of colorectal cancer screenings to providers and individuals: colonoscopy, flexible sigmoidoscopy and high-sensitivity fecal occult blood tests, including fecal immunochemical test (FIT).
6. Educate providers on cervical cancer screening guidelines, including when to conduct an HPV co-test.
7. Implement client reminder systems (e.g., print or phone) to advise individuals in need of a cancer screening; messages may be tailored or general.

MEASURES:

Women ages 50+ who had a mammogram within the last two years Baseline: **72.4%** *(2014 BRFSS)*	2020 Target: **81.1%**
Women ages 40-49 who had a mammogram within the last two years Baseline: **57.6%** *(2014 BRFSS)*	2020 Target: **63.4%**
Women ages 21–65 who had a Pap test within the last 3 years Baseline: **84.9%** *(2014 BRFSS)*	2020 Target: **93%**
Men and women ages 50–75 who are adherent with colorectal cancer screening guidelines (FOBT in 1 year, Flexible Sigmoidoscopy in 5 years + FOBT in 3 years, or Colonoscopy in 10 years) Baseline: **66.7%** *(2014 BRFSS)*	2020 Target: **80%**
Men and women with appropriate smoking history risk (as determined by USPSTF guidelines) who are adherent with lung cancer screening guidelines Baseline: **TBD**[3] *(TBD[3])*	2020 Target: **TBD**[3]
Men ages 40+ who have had a discussion with their provider on the advantages and disadvantages of a PSA test Baseline: **27.4%** *(2014 BRFSS)*	2020 Target: **31.5%**

[3] Lung cancer screening for adults 55-80 with a strong history of smoking was recommended by the United States Preventive Services Task Force in December 2013. Colorado's cancer community will explore current or potential data sources in 2016 in order to identify a baseline and target measure.

5.1 STRATEGIES, CONTINUED:

8. Implement provider-oriented strategies, including provider reminders and recalls to identify when an individual is in need of, or overdue for, a cancer screening test based on individual or family history risk, and provider assessment and feedback interventions that present information about screening provision, in particular through use of an electronic health record system.

9. Deliver one-on-one or group education conducted by health professionals or trained lay people to motivate individuals to seek screenings by addressing indications for and benefits of screening, and what to expect during screening services. Use small media to support this education (e.g., brochures or newsletters).

10. Implement workplace policies to provide paid time off for individuals to complete recommended cancer screenings.

11. Collaborate with health plans to achieve increased cancer screening compliance rates, for example through the use of National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) cancer screening measures.

12. Implement evidence-based practices through engagement of patient navigators in cancer screening processes.

13. Educate endoscopists on tracking adenoma detection rates as part of a colonoscopy quality improvement program, including implementation of provider assessment and feedback systems.

OBJECTIVE 5.2:

Increase high-quality, guideline adherent, cancer screening rates among targeted populations.

STRATEGIES:

1. Increase access to cancer screening services, including colonoscopy, mammography and low-dose lung CT screening, in rural areas by implementing mobile services, traveling providers, upgraded equipment or increased Medicaid reimbursement.

2. Partner with community-based organizations to reduce barriers (financial, cultural, structural or regional) to obtaining cancer screening services through engagement of community health workers and patient navigators.

3. Provide culturally relevant screening services for medically underserved communities and promote culturally sensitive informed decision-making about screening through engagement of community health workers and patient navigators.

4. Facilitate enrollment in public and private health insurance.

MEASURES:

Women age 50+ in poverty (under 250% FPL) who had a mammogram in the last two years Baseline: **61.3%** *(2014 BRFSS)*	2020 Target: **81.1%**
Women age 50+ who live in rural or frontier counties who had a mammogram in the last two years Baseline: **66%** *(2014 BRFSS)*	2020 Target: **81.1%**
Women age 50+ who have Medicaid who had a mammogram in the last two years Baseline: **69.3%** *(2014 BRFSS)*	2020 Target: **81.1%**

5.2 STRATEGIES, CONTINUED:

5. Educate Medicaid-eligible Coloradans about their cancer screening coverage, including locations that accept Medicaid.
6. Address limited local provider access for individuals due to insurance coverage, insurance plans accepted by providers, or provider capacity.
7. Educate employers on the importance of providing paid leave for cancer screenings (especially for hourly employees).
8. Encourage Medicaid to adopt lung CT screening guidelines that match Medicare guidelines.

5.2 MEASURES, CONTINUED:

Women ages 21-65 who live in rural or frontier counties who had a Pap test within the last 3 years Baseline: **80.8%** *(2014 BRFSS)*	2020 Target: **93%**
African American women ages 21-65 who had a Pap test within the last 3 years Baseline: **73.4%** *(2014 BRFSS)*	2020 Target: **93%**
Men and women ages 50–75 in poverty (under 250% FPL) who are adherent with colorectal cancer screening guidelines[4] Baseline: **56.6%** *(2014 BRFSS)*	2020 Target: **67.8%**
Men and women ages 50–75 who live in rural or frontier counties who are adherent with colorectal cancer screening guidelines[4] Baseline: **58.4%** *(2014 BRFSS)*	2020 Target: **70%**
Men and women ages 50–75 who have Medicaid who are adherent with colorectal cancer screening guidelines[4] Baseline: **43.2%** *(2014 BRFSS)*	2020 Target: **51.8%**
Hispanic/Latino men and women aged 50-75 who are adherent with colorectal screening guidelines[4] Baseline: **54.1%** *(2014 BRFSS)*	2020 Target: **65%**
African-American men 40+ who engage in informed decision-making about prostate cancer screening and completed a PSA test Baseline: **31.8%** *(2012 & 2014 BRFSS)*	2020 Target: **36.6%**

[4] Colorectal screening guidelines call for either a fecal occult blood test (FOBT) every year, Flexible Sigmoidoscopy every 5 years with a FOBT every three years, or a full colonoscopy every 10 years beginning at age 50. These guidelines vary for individuals with a family history of colon cancer or other risk factors.

OBJECTIVE 5.3:

Increase early detection rates of non-screenable cancers.

STRATEGIES:

1. Increase awareness of the symptoms of non-screenable cancers among health care providers and individuals.
2. Educate medical and health care students via structured programs about symptoms, risk factors, early detection, genetic counseling and genetic testing for non-screenable cancer types.
3. Educate dental health professionals on how to assess an individual for signs of oral cancer.
4. Support research studies, including randomized control trials, to investigate new and innovative cancer screening tests.

MEASURES:

Melanomas (less than or equal to 1.00 mm Breslow depth or in situ) Baseline: **76%** *(2010-12 CCCR)*	2020 Target: **82%**
In situ or localized stage ovarian cancer Baseline: **21.6%** *(2012 CCCR)*	2020 Target: **25%**
In situ or localized stage oral cancer Baseline: **35.7%** *(2012 CCCR)*	2020 Target: **40%**

FROM DIAGNOSIS TO ADVOCACY

Mary Phillips was 61 years old when she was diagnosed with an aggressive form of ovarian cancer. Rather than let it take over her life, she underwent treatment and volunteered for the Colorado Ovarian Cancer Alliance, where she now serves as president.

> "People feel it's a weakness to be diagnosed with cancer," she said. "I am not ovarian cancer."

Phillips was a practicing public finance attorney considering retirement when her waistline began expanding without weight gain and she developed back pain she initially blamed on a new office chair. When it didn't get better, she called her doctor with her symptoms and was promptly scheduled for tests that revealed a mass. A week later she was in surgery to have a tumor removed.

She was told she had two to three years to live, that half of women with ovarian cancer die within five years of diagnosis and about a quarter die within the first year. Ovarian cancer is not usually treated with radiation because of potential damage to surrounding organs, so Phillips had chemotherapy, finishing the last round just before Thanksgiving 2005.

Phillips responded well to treatment, but experienced the normal fatigue and "chemobrain" that convinced her to retire early. For the past 10 years, she has been "NED" or "no evidence of disease." She laughs as she points out that "NED" is also the name of a rock band comprised of six gynecologic oncology surgeons from across the country.

> Mostly, Phillips wants people to know that disease is part of your life - not your whole life.

She found support and advice from an ovarian cancer support group that she is still part of today. Group members helped
her navigate treatment side effects and combat her fear of dying.

Wanting to keep busy, she put her advocacy skills to use with COCA, an organization dedicated to raising awareness of the "disease only women can get." Originally recruited to talk to state legislators, she went on join the board of trustees and now serves as president.

"I'm happy to share my cancer journey," she says, "I'm still Mary Phillips and have not become ovarian cancer."

DIAGNOSIS & TREATMENT

Early diagnosis and improved and more specific treatment options are the cornerstones of the strategies that have reduced cancer mortality over the past 20 years. Communication of screening and treatment guidelines and pathways — to providers as well as insurers — is sometimes inconsistent and slow. The use of research to improve screening, treatment and palliative care can be challenging in a fragmented health care system. Barriers to accessing the right cancer care are many, with geography, cost and technology representing a few of them. During the next five years, further reductions in cancer mortality can be achieved by assisting providers, hospitals, policymakers and insurers in learning about and adopting the best and most appropriate practices for cancer diagnosis and treatment.

All Coloradans deserve access to cancer care that adheres to nationally accepted standards and is not cost prohibitive through either public or private insurance. Individuals also should have access to easily understandable health information about their cancer and the necessary support to help them navigate treatment. Cancer diagnostic and treatment services should take into consideration the differences among adult, young adult and pediatric cancers, and the differences in the values, obstacles and preferences of each individual patient.

GOAL 6: CONSISTENT ACCESS TO, AND APPLICATION OF, QUALITY DIAGNOSTIC AND TREATMENT SERVICES ADHERENT WITH NATIONALLY RECOGNIZED STANDARDS

OBJECTIVE 6.1:

Increase the use of systematic methods to ensure patients and/or caregivers can make timely, shared decisions about treatment, including the prevention or mitigation of long-term and late effects.

STRATEGIES:

1. Identify and implement a method to assess shared decision-making processes and aids among hospitals and/or practices that provide diagnosis and treatment services.
2. Implement sustainable decision-making models and systems among treatment providers and practices.
3. Facilitate shared decision-making between patient and provider regarding cancer treatment decisions among individuals who have multiple treatment options, including those with pediatric, adolescent and young adult cancers.
4. Engage patient navigators to educate patients and caregivers on the importance of timely informed decision-making, including potential long-term and late effects.
5. Educate providers, patients and caregivers of children, young adults and adults of child-bearing age about the potential impacts of cancer treatment on an individual's future fertility and options to preserve fertility.
6. Educate cancer survivors and health care providers about the importance of open communication when using non-pharmacologic complementary approaches.
7. Encourage and provide access to genetic counseling and testing services for pediatric and adolescent cancer survivors.

MEASURE:

Colorado's cancer community will explore metric and data source options and will determine a baseline and target by December 2017 Baseline: **TBD**	2020 Target: **TBD**

STRATEGIES, CONTINUED:

8. Ensure availability of patient materials that adhere to health literacy standards such as the Agency for Healthcare Research and Quality (AHRQ) Health Literacy Universal Precautions Toolkit.

OBJECTIVE 6.2:

Reduce financial barriers for individuals receiving quality cancer treatment.

STRATEGIES:

1. Identify and implement a method to assess the types and breadth of financial needs through financial assistance programs, treatment facility charity care programs or supportive service organizations.
2. Educate patients, caregivers and providers on potential "financial toxicity", or unintended financial consequences of pursuing expensive cancer treatment regimens.
3. Identify financial barriers to obtaining and sustaining quality diagnostic and treatment services, including potential public and private insurance barriers post Affordable Care Act implementation.
4. Educate Coloradans on insurance benefits, coverage and enrollment, including development or implementation of tools to assist with balancing personal needs and considerations when choosing a health insurance plan.
5. Educate and connect uninsured Coloradans with basic needs and medical cost resources to access quality cancer treatment.
6. Educate decision makers (e.g., legislators, policy makers) regarding barriers to obtaining health plan coverage, including pharmacy benefits, to access treatment services.
7. Evaluate financial assistance programs to identify optimal timing, amount and length of financial support for those in active treatment.
8. Engage patient navigators and care coordinators to assist patients with overcoming financial barriers.
9. Implement a universal financial assistance application accepted by Colorado nonprofit organizations that offer financial support to individuals during cancer treatment.
10. Increase consumer representation, in particular cancer survivors and caregivers, on boards of organizations serving cancer patients and survivors with a focus on reducing financial barriers.

MEASURES:

Uninsured Coloradans Baseline: **6.7%** *(2015 CHAS)*	2020 Target: **6%**
Underinsured Coloradans Baseline: **16.4%** *(2015 CHAS)*	2020 Target: **13.9%**
Inability to pay for basic necessities like food, heat or rent among those facing challenges in paying medical bills Baseline: **36.7%** *(2015 CHAS)*	2020 Target: **33%**

OBJECTIVE 6.3:

Reduce geographic barriers to accessing specialty care for quality cancer treatment.

STRATEGIES:

1. Conduct a needs assessment to identify regional barriers to accessing specialty cancer treatment, including availability of specialists and use of technology.
2. Develop and implement solutions to barriers identified during the needs assessment, such as telemedicine or traveling provider specialists.
3. Collaborate with local or regional transportation councils or transit planning initiatives to address medical facility access.
4. Address limited local provider access for individuals due to insurance coverage, insurance plan acceptance by providers or provider capacity.
5. Engage patient navigators and care coordinators to assist patients with overcoming barriers, including geographic or transportation.
6. Support treatment access for individuals whose cancer type has demonstrated improved outcomes when treated by certain board certified oncology specialists (e.g., ovarian cancer patients accessing a gynecologic oncologist).
7. Increase consumer representation, in particular cancer survivors and caregivers, on boards of organizations serving cancer patients and survivors with a focus on reducing geographic barriers.

MEASURES:

Number and type of cancer treatment specialty providers by health statistic region Baseline: **TBD**[5]	2020 Target: **TBD**[5]
Individuals lacking transportation to a doctor's office or the office was too far away Baseline: **4.7%** *(2015 CHAS)*	2020 Target: **4.2%**

[5] *Colorado's cancer community will explore data source options and determine a baseline and target by December 2017.*

OBJECTIVE 6.4:

Increase testing among individuals whose cancer treatment may benefit from targeted proven or emerging therapies.

STRATEGIES:

1. Educate pathologists, oncologists, surgeons and other relevant health care providers about best practices for identification of hereditary cancer syndromes and genomic and immunohistochemistry analysis of tumors as described in National Comprehensive Cancer Network (NCCN) guidelines.
2. Disseminate information to laboratories and cancer specialists about best practices in tumor testing and molecular profiling as new guidelines are developed in this area.
3. Advocate for universal MSI or MMR protein testing for colorectal and endometrial cancers and for guideline-based molecular profiling of cancers when applicable.
4. Support research to develop or refine tumor markers, including proteomics or gene expression.

MEASURES:

Colorectal cancer cases among those 70 years and younger with microinstability (MSI) or mismatch repair (MMR) protein expression testing Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]
Metastatic colorectal cancer cases tested for KRAS mutations Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]
Breast cancer cases with complete testing (ER/PR/Her2) to identify triple negative tumors Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]

[6] *The baseline and target will be determined, in partnership with the Colorado Central Cancer Registry, by December 2016.*

GOAL 7: INCREASED PARTICIPATION IN HIGH-QUALITY CLINICAL TRIALS

OBJECTIVE 7.1:

Increase education about high-quality clinical trials among all ages of individuals facing cancer treatment, providers and caregivers.

STRATEGIES:

1. Promote online educational resources that contain comprehensive clinical trial considerations, links to resources and links to current clinical trials to patients and cancer care professionals.
2. Increase visibility of clinical trials among the cancer community, particularly patients and cancer specialty providers.
3. Implement processes to systematically inform and encourage newly diagnosed patients and caregivers of the availability of clinical trials as a component of treatment planning.
4. Support and implement a system for tracking patient molecular, clinical and epidemiological data in addition to clinical trial matching, such as the Oncology Research Information Exchange Network (ORIEN).

MEASURE:

Colorado's cancer community will explore metric and data source options and will determine a baseline and target by December 2017 Baseline: **TBD**	2020 Target: **TBD**

STRATEGIES, CONTINUED:

5. Create and promote educational resources to help individuals understand, evaluate and make informed decisions about participation in clinical trials, such as key questions to discuss with providers, treatment differences, the meaning of randomization and definitions of the three phases of clinical trials. Ensure resources are linguistically and culturally tailored to the population.

CLINICAL TRIALS

Clinical trials help discover new treatments - exciting new drugs or surgical methods that promise to benefit future cancer patients. Without them, scores of current cancer treatments might not be available or ever discovered. But volunteering for such a trial is a decision that should be made after weighing the pros and cons with the help of a health care provider.

Clinical trials involve patients who have met strict eligibility criteria, such as type or stage of cancer or demographic criteria on age, gender and other medical conditions. Patients have access to the latest treatments under the care of medical experts. Participation expenses may be covered by trial sponsors and the trials give cancer patients the opportunity to help advance treatment options.

They are, however, not without challenges. They may not work better than current treatments; they may work better for some than others; and they may not be worth the time spent and side effects encountered.

"A patient should decide to participate if they feel the benefits outweigh the risks," explains Dr. Christopher Lieu, Deputy Director of the Clinical Trials Office at the CU Cancer Center.

For information on available clinical trials, talk to your doctor or visit: University of Colorado Health at https://www.uchealth.org/Pages/clinical-trials.aspx, or National Cancer Institute at http://www.cancer.gov/about-cancer/treatment/clinical-trials/search, or Colorado Cancer Research Program at http://co-cancer-research.org.

OBJECTIVE 7.2:

Reduce barriers to clinical trial participation.

STRATEGIES:

1. Identify and address barriers to clinical trial participation, in particular those that can decrease diversity among clinical trial participants, such as fear, cultural beliefs and potential medical expenses.
2. Develop mechanisms to reduce travel expenses related to clinical trial participation.
3. Implement screening processes at cancer care settings to identify patients eligible for clinical trials.
4. Implement standardized data collection and reporting mechanisms to reduce variation in reporting of patient demographics, in addition to tracking income, insurance status and education of trial participants.
5. Identify and implement strategies to improve efficiency and resources related to clinical trial coordination for physicians, including paperwork and data management.
6. Educate legislators, employers and insurance carriers to promote policies that support availability of, patient access to, and participation in clinical trials.

MEASURE:

Cancer patient enrollment[7] in clinical trials[8] at Colorado Commission on Cancer (CoC) accredited cancer programs Baseline: **TBD**[9] *(CO CoC Hospitals)*	2020 Target: **TBD**[9]

[9] Colorado's cancer community, in partnership with Commission on Cancer (CoC) accredited hospitals in the state, will explore options to gather and analyze clinical trial enrollment data based on the [7]breakdown of patient demographics, including age, sex, race/ethnicity, income, insurance and education, to track and evaluate clinical trial diversity. A [8]suggested analysis is to look at the number of patients enrolled onto clinical trials against those eligible to participate in clinical trials.

STRATEGIES, CONTINUED:

7. Educate private health plans about the Affordable Care Act ACA requirement to cover routine medical care for patients enrolled in approved clinical trials.
8. Increase the availability and diversity of clinical trial protocols in Colorado.

COMPARATIVE ONCOLOGY

Comparative oncology describes research that brings together studies of naturally occurring cancers in more than one species, such as humans and dogs. Integrated cancer drug development protocols can decrease time, cost and false leads by accelerating research development as the length of a pet animal study is often 1-2 years rather than 5-10 years in humans.

Naturally occurring cancers in dogs and humans share many features including:

- How they appear under a microscope (histological appearance).
- How they grow, invade and spread (biological behavior).
- The genes which predict cancer risk and treatment success.
- Potential targets for drug development or other specialized treatments like surgery or radiation.
- Clinically relevant responses (benefit and side effects) to investigational drugs or devices.

Increased awareness is needed regarding how pet dogs, not just mice and rats, with naturally developing cancer are valuable for human cancer control. Cross-training of doctors, veterinarians and academics, and additional funding opportunities, can support furthered characterization of naturally arising cancers in dogs to benefit humans and pets with cancer.

The Flint Animal Cancer Center at Colorado State University's, College of Veterinary Medicine and Biomedical Sciences is the leading comparative cancer center in the world www.csuanimalcancercenter.org.

SURVIVORSHIP & END-OF-LIFE CARE

Upon diagnosis, cancer survivors and their families enter a new world full of physical, mental, spiritual, social and financial challenges. These challenges begin with diagnosis and extend far beyond the period of treatment. It is essential to provide services and support that equip survivors and families to better face and overcome these challenges, including palliative care throughout survivorship.

The cancer mortality rate has been falling consistently for most cancers over the past 20 years, increasing the number of survivors in Colorado. There were more than 210,000 cancer survivors in Colorado in 2014.[10] This number will continue to rise as cancer screening and treatment continue to improve and extend the length of life, the state's population grows and the number of older adults increases. Building and improving upon the resources available to Colorado's cancer survivor community is essential to meeting the needs of this growing population. Education and advocacy can play a critical role among policymakers in achieving many of these objectives.

[10] *American Cancer Society. Cancer Treatment and Survivorship Facts & Figures 2014-2015. Atlanta: American Cancer Society; 2014*

GOAL 8: IMPROVED PHYSICAL, MENTAL AND SOCIAL WELL-BEING AMONG CANCER SURVIVORS [11 12]

OBJECTIVE 8.1:

Improve physical health among cancer survivors.

STRATEGIES:

1. Educate oncology providers on tobacco counseling and referral services.
2. Implement evidence-based tobacco cessation programs in the cancer survivor population and advance policies that reduce out-of-pocket costs for evidence-based cessation treatments, such as medication and counseling.
3. Track QuitLine calls from cancer survivors and provide direct education to survivors on the effects of tobacco on treatment efficacy, recurrence risk and second cancers.
4. Implement evidence-based health behavior change and self-management programs for, or adapted to, the cancer survivor population.
5. Educate survivors on maintaining a healthy life-style as a way to decrease the risk of cancer recurrence, side effects from treatment, additional primary cancers and/or other co-morbidities.
6. Assess the availability and use of cancer rehabilitation services, including those provided in clinical settings, community programs, and by personal trainers with advanced certification in oncology rehabilitation. Increase access where needed.
7. Assess the availability and use of oncology-certified Registered Dietitians who provide services to cancer survivors. Increase access as needed.
8. Implement evidence-based complementary and alternative therapies. Implement research projects to measure the effectiveness of non-clinical approaches (e.g., yoga or massage) on cancer survivor quality of life.
9. Educate employers and providers about the physical needs of cancer survivors.

MEASURES:

Cancer survivors ages 18+ who are current smokers Baseline: **12.4%** *(BRFSS 2014)*	2020 Target: **9.3%**
Cancer survivors ages 18+ who report no leisure time physical activity in the past 30 days Baseline: **21.1%** *(BRFSS 2014)*	2020 Target: **19.9%**
Cancer survivors ages 18+ who report poor physical health on 14 or more of the past 30 days Baseline: **20.6%** *(BRFSS 2014)*	2020 Target: **15%**
Cancer survivors ages 18+ who report eating at least one fruit and one vegetable per day Baseline: **62.9%** *(BRFSS 2013)*	2020 Target: **65.7%**
Cancer survivors ages 18+ who are obese or overweight Baseline: **60%** *(BRFSS 2014)*	2020 Target: **50.8%**

[11] *Aligned with the World Health Organization's definition of health*

[12] *Includes all cancer survivors, regardless of treatment status (e.g., in treatment, post-treatment)*

8.1 STRATEGIES, CONTINUED:

10. Educate school administrators, teachers and support staff on the needs of children during and after cancer treatment.

11. Provide a mechanism for consolidated state cancer resources such as a directory or referral service that includes mental health and spans all age ranges.

12. Assess health insurance coverage of supportive services related to physical health for cancer survivors and identify gaps, barriers and solutions.

IMPORTANT DEFINITIONS FOR UNDERSTANDING SURVIVORSHIP

CANCER SURVIVOR

An individual is considered a cancer survivor from the time of cancer diagnosis through the course of his or her life. This definition is widely accepted by groups such as the National Coalition for Cancer Survivorship (NCCS), The National Cancer Institute's Office of Cancer Survivorship (NCI OCS), The Centers for Disease Control and Prevention (CDC), and the American Society for Clinical Oncology (ASCO).

CANCER SURVIVORSHIP

In cancer, survivorship focuses on the health and life of a cancer survivor. It covers the physical, psychosocial, and economic issues of cancer, beyond the diagnosis and treatment phases. Survivorship includes issues related to the ability to get health care and follow-up treatment, late effects of treatment, second cancers, and quality of life. Family members, friends, and caregivers are also considered part of the survivorship experience. While anyone who has ever been diagnosed with cancer is a cancer survivor, work and research in this area tends to focus on the post-treatment period until the end of life (as defined by NCI).

QUALITY OF LIFE

The term quality of life describes one's overall enjoyment of life. Many clinical trials assess the effects of cancer and its treatment on the quality of life of cancer survivors. These studies measure aspects of an individual's sense of well-being, and ability to carry out various activities (as defined by the IOM, NCI, and ACS).

OBJECTIVE 8.2:

Improve mental health among cancer survivors.

STRATEGIES:

1. Support physical and behavioral health integration initiatives in Colorado (e.g., State Innovation Model grant).
2. Provide access to research-tested psychosocial support programs, such as those found on R-TIPS, for survivors and caregivers. Assess and address availability of these services in rural regions.
3. Develop and implement research projects to measure the effectiveness of support groups or other psychosocial interventions for understudied cancer types.
4. Educate employers and providers about the mental and emotional needs of cancer survivors and resources available to support them.
5. Establish and implement policies and protocols at hospitals, treatment centers and medical offices to ensure provision of distress screening during pivotal medical visits. Support referrals and follow-up services based on the screening assessment.
6. Conduct a literature review of transition clinic outcomes to identify mental health needs among pediatric, adolescent and young adult survivors.
7. Educate school administrators, teachers and support staff on the behavioral health needs of children during and after cancer treatment.
8. Develop model policies for schools that support pediatric and adolescent survivors' successful transition back to school.
9. Provide a mechanism for consolidated state cancer resources such as a directory or referral service that includes mental health and spans all age ranges.
10. Promote and assess promising practices provided in and outside of clinical settings to improve mental and emotional health (e.g., yoga, meditation or mentor programs).

MEASURES:

Cancer survivors who report poor mental health on 14 or more of the past 30 days Baseline: **13.1%** *(BRFSS 2014)*	2020 Target: **11.1%**
Individuals with at least one completed and documented psychosocial distress screen during the course of cancer treatment Baseline: **TBD**[9] *(CO CoC Hospitals)*	2020 Target: **TBD**[9]
Individuals with elevated distress based on the distress screen who have documented supportive care referrals Baseline: **TBD**[9] *(CO CoC Hospitals)*	2020 Target: **TBD**[9]

[9] Colorado's cancer community, in partnership with Commission on Cancer (CoC) accredited hospitals in the state, will explore options to gather and analyze distress screening and referral data

FAMILY AND FRIENDS RIDE THE EMOTIONAL ROLLER-COASTER, TOO

Negative feelings of anger, frustration and pain are common in cancer survivors, yet so are positive outlooks such as feeling blessed or gifted to have had cancer. Dennis Heffern, a licensed clinical social worker (LCSW) with Kaiser Permanente Colorado, says he often sees the initial reaction with a cancer diagnosis as death, but developing an action plan with providers reduces anxiety. Cancer can be "a memo of mortality," Heffern says with psychological and emotional challenges being worse than undergoing physical treatments.

"A cancer survivor is anyone diagnosed with cancer," says Heffern, who believes "cancer is a family illness." He also believes the best way to treat patients is with respect, grace, humor and genuineness.

Aside from taking vitals, like blood pressure, care teams should treat psycho/social distress. Although increasingly patient-centered, Heffern senses a deficit in cancer care transitioning patients from active treatment to survivorship. Individuals are under a microscope during active treatment, but then they go from being seen every two weeks to every three months, and follow-up visits are less frequent once remission begins. In Heffern's opinion the current medical system is not properly funded or organized for this important phase. Survivorship clinics can fill this void and help patients better prepare for the post-treatment phase as a growing number of people are living with cancer as a chronic disease.

"The story of cancer is not just for patients, but for their affected families and friends." From friends to adult children to spouses, these caregivers have their own needs and concerns as they cope with the illness of their loved ones.

Caregivers play a crucial role in the well-being of their loved ones who are cancer patients but they are not always on the same page as them. Caregivers may be at a different pace of acceptance or integration. If it's a terminal cancer, they may differ in how they deal with death. Caregivers share in the adversities and victories during the patient's cancer journey. As they go through a similar grieving process as the cancer patient, caregivers are also at an increased risk for depression and anxiety. Their role is one that can continue for years. Heffern thinks caregivers have less often or untold stories. He says caregivers are part of the team and wants them to know, "You're worth it, too."

TREATMENT SUMMARIES AND SURVIVORSHIP CARE PLANS

A treatment summary and survivorship care plan (TS/SCP) consists of two main parts. The treatment summary is a record of care and gives an overview of the diagnosis and treatment that a cancer survivor received. The survivorship care plan gives details on the survivor's future care needs, including possible late and long-term effects of treatment, possible signs of recurrence, recommended cancer screenings and other routine care, and information about which provider will monitor the survivor's health care after treatment.

Together, these plans are intended to be given to patients and their PCPs at the end of their primary cancer treatment as a way to help transition patients back to primary care while also educating them about next steps in their cancer journey.

GOAL 9: IMPROVED COMPLIANCE WITH POST-TREATMENT FOLLOW-UP GUIDELINES

OBJECTIVE 9.1:

Increase provision of survivorship care planning services to eligible cancer survivors.

STRATEGIES:

1. Provide technical support to hospitals regarding effective and quality implementation of the Commission on Cancer (CoC) or the National Accreditation Program for Breast Centers (NAPBC) standards regarding the delivery of survivorship care plans.
2. Provide resources and training to providers in facilities not accredited by the Commission on Cancer or the National Accreditation Program for Breast Centers about quality development and delivery of survivorship care plans.
3. Disseminate post-treatment follow-up guidelines to oncologists and primary care providers.
4. In partnership with academic institutions, evaluate the effectiveness of survivorship care plans on improving long-term clinical and quality-of-life outcomes for all ages of cancer survivors.
5. Advocate for legislation to reimburse costs associated with development and delivery of survivorship care plans.
6. Implement a process to provide treatment summaries and survivorship care plans to pediatric and adolescent cancer survivors or their caregivers.
7. Identify a data source and baseline for post-treatment follow-up visits for pediatric, adolescent and young adult cancer survivors.
8. Assess barriers to follow-up care among pediatric, adolescent and young adult cancer survivors.
9. Disseminate survivor and caregiver materials regarding the importance of follow-up care through clinical cancer care organizations as well as nonprofit cancer support organizations.

MEASURES:

Individuals treated with curative intent who receive a survivorship care plan at the end of treatment Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]
Individuals treated at CoC and NAPBC accredited facilities that receive a TS/SCP Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]
Non-CoC or Non-NAPBC accredited cancer treatment facilities actively providing TS/SCPs to survivors Baseline: **TBD**[6] *(CCCR)*	2020 Target: **TBD**[6]

[6] Colorado's cancer community will explore data source options and determine a baseline and target by December 2017.

OBJECTIVE 9.2:

Increase adherence to nationally recognized follow-up care guidelines for cancer survivors among oncologists and primary care providers.

STRATEGIES:

1. Identify data sources and baselines to track provider adherence to post-treatment Children's Oncology Group (COG), National Comprehensive Cancer Network (NCCN) or American Society of Clinical Oncology (ASCO) guidelines.
2. Promote continuing medical education opportunities, such as through COPIC, on long-term effects of cancer treatment on other health issues and chronic diseases.
3. Disseminate post-treatment follow-up guidelines from NCCN or ASCO to oncologists and primary care providers.
4. Motivate individuals and providers to share post-treatment documentation, such as a treatment summary or survivorship care plan.
5. Implement identification and tracking of cancer survivors in electronic medical records, in particular for pediatric and adolescent survivors, for whom there may be a long period of time between cancer diagnosis and treatment and health care as an adult.

MEASURES:

Oncologists treating pediatric, adolescent and/or young adult cancer survivors and using the Children's Oncology Group (COG) guidelines Baseline: **TBD**[5] *(TBD)*	2020 Target: **TBD**[5]
Oncologists treating adult cancer survivors and using surveillance guidelines from the National Comprehensive Cancer Network (NCCN) or American Society of Clinical Oncology (ASCO) Baseline: **TBD**[5] *(TBD)*	2020 Target: **TBD**[5]
Primary care providers treating adult cancer survivors and familiar with surveillance guidelines from the National Comprehensive Cancer Network (NCCN) or American Society of Clinical Oncology (ASCO) Baseline: **TBD**[5] *(TBD)*	2020 Target: **TBD**[5]

[5] *Colorado's cancer community will explore data source options and determine a baseline and target by December 2017.*

GOAL 10: EXPANDED AVAILABILITY OF AND ACCESS TO PALLIATIVE AND END-OF-LIFE CARE SERVICES

OBJECTIVE 10.1:

Increase palliative care and end-of-life services.

STRATEGIES:

1. Assess number, type and credentials of current palliative and end-of-life care providers, particularly in rural and frontier counties.
2. Partner with institutes of higher education and health care workforce development organizations, especially in rural areas, to prepare and recruit palliative and end-of-life care providers.
3. Implement telehealth/tele-palliative care to increase access to palliative care services for rural and frontier counties.
4. Assess reimbursement barriers and implement a plan to improve reimbursement and access to services.
5. Educate the public and medical community regarding the differences between palliative, hospice and end-of-life care.
6. Develop provider messaging on how to explain the relative benefits and risks of continued treatment vs. end-of-life care to terminally ill patients and their families, working with organizations like the Center for Improving Value in Health Care (CIVHC) or the Hospice and Palliative Care Association of the Rockies.
7. Support research on the benefits of palliative care during chronic illness in addition to end-of-life stages.

MEASURES:

Hospitals providing palliative care services Baseline: **26%**[13] *(2013 CIVHC Survey)*	2020 Target: **80%**
Hospices providing palliative care services at any stage of illness Baseline: **36%**[14] *(2013 CIVHC Survey)*	2020 Target: **50%**
Rural/Frontier counties with hospital or hospice-based palliative care services Baseline: **5** *(2013 CIVHC Survey)*	2020 Target: **10**
State grade on palliative care (among hospitals >50 beds) Baseline: **B** *(2011 Center to Advocate Palliative Care)*	2020 Target: **A**

[13] *Denominator of 99 hospitals.*

[14] *Denominator of 53 hospice providers.*

OBJECTIVE 10.2:

Increase access to non-pharmacologic interventions for cancer pain management, palliative care and wellness.

STRATEGIES:

1. Support research and evaluation activities to determine the effectiveness of non-pharmacologic interventions.
2. Propose to the Colorado Division of Insurance a list of preferred non-pharmacologic interventions as covered benefits based on an assessment of current coverage for at least three major health plans and Medicaid/Medicare.
3. Collaborate directly with health plans to increase coverage of non-pharmacologic interventions.
4. Explore coverage/reimbursement for non-pharmacologic service providers through public and private insurance and other mechanisms.
5. Educate cancer survivors on non-pharmacologic options.
6. Educate cancer survivors and health care providers about the importance of open communication when using non-pharmacologic complementary approaches.

MEASURE:

Colorado's cancer community will explore metric and data source options and will determine a baseline and target by December 2017 Baseline: **TBD**	2020 Target: **TBD**

THE DIFFERENCE BETWEEN PALLIATIVE AND END-OF-LIFE CARE

Palliative care and end-of-life care are often discussed together, and sometimes used interchangeably, but they are different.

Palliative care is specialized medical care for people with serious illnesses. This type of care is focused on providing patients with relief from the symptoms, pain and stress of serious illness, whatever the diagnosis. The goal is to improve the quality of life for both the patient and the family. Palliative care is provided by a team of physicians, nurses and other specialists who work with a patient's other health care providers to provide an extra layer of support. Palliative care is appropriate at any age and at any stage in a serious illness and can be provided together with curative treatment.

End-of-life care, or hospice care, is given to a person with a limited life expectancy, and seeks to meet the medical and physical needs of the person. It can also meet psychological, spiritual and social needs of the person and his or her family. This care includes palliative care and is focused on symptom management rather than treatment to prolong life.

National Quality Forum: "Palliative Care and End-of-Life Care"
Colorado Standards for Hospitals and Health Facilities, Chapter 2, General Licensure Standards (6 CCR 1011-1 Chap 2).

CROSS-CUTTING

Coloradans are faced with important decisions about cancer risk at all points along the cancer continuum. There are decisions to be made about prevention behaviors, screening options, treatment options, post-treatment care and support, and end-of-life care. These choices require people to understand basic information about health and health care, comprehend information about risk, weigh the risks and benefits of each decision, and use the best information available to make a choice that resonates with their culture, values and priorities.

When the public, cancer survivors and caregivers have the skills and information needed to engage in these decision-making processes, positive outcomes for all can be a reality. When such skills and tools are lacking, decision-making can be a frustrating experience. The objectives below demonstrate the commitment to providing Coloradans with tools to navigate the health care system and the many choices that can be made along the cancer continuum of care.

DIFFERENTIATING BETWEEN COMMUNITY HEALTH WORKERS (CHWS) AND PATIENT NAVIGATORS (PNS)

Community Health Worker (CHW): Also referred to as lay health worker, community outreach worker, community health advisor, promotora or lay health advocate.

A CHW is a lay member of the community who is trained in some way to deliver an intervention to community members in community settings. In Colorado, training is provided by community –based organizations deploying CHWs and the community college system. Typically, CHWs share ethnicity, language, SES and life experiences with the community members they serve. Historically, CHWs have worked primarily with vulnerable, underserved populations and are deployed by community-based organizations. In 2009, the Department of Labor Bureau of Labor Statistics created a distinct occupation code for CHWs.

Examples of CHW activities may include:

- Outreach to those eligible but not enrolled in health coverage and encourage them to apply
- Delivering culturally appropriate health information and education
- Encouraging residents to participate in health screening and administering basic screening instruments
- Advocating for community health needs

Patient Navigator (PN): Also referred to as lay navigator, health navigator or resource navigator.

A PN assists individuals in reducing and eliminating barriers to health care access and in negotiating complex health delivery systems. In Colorado training programs are available to prepare PNs for this role, ranging from community college certificate programs, on-line trainings and university offerings. Typically, PNs are employed by health delivery systems including primary care, specialty care and managed care.

Examples of PN activities may include:

- Assessing credible community resources, developing partnerships and making referrals for the patient population served
- Care coordination
- Connecting patients with resources
- Working with patients that have high system utilization to access care appropriately
- Supporting and motivating health behavior change
- Implementing population health strategies

Patient Navigators are a new occupation developed as a part of the transformation of care, responsive to patient and system needs. In 2014, a separate, standard occupation code was requested for PNs which is pending.

HEALTH INSURANCE LITERACY

Health insurance literacy is "the capacity to find and evaluate information about health plans, select the best plan for your financial and health circumstances, and use the plan once enrolled." Common health insurance terms include copayment, deductible, premium and co-insurance.

Navigating the health insurance landscape can be challenging for everyone. The Patient Protection and Affordable Care Act (ACA) extends health insurance coverage to low-income adults and calls for greater health literacy. If you don't know your way around health insurance terms and procedures, it's hard to take advantage of the Affordable Care Act and easy to pay too much for health care.

In Colorado, more than 1.5 million adults do not look at their health plan coverage before going to their health care provider. More than 40 percent of Colorado health care consumers have bronze plans, which have higher out-of-pocket costs. The Kaiser Family Foundation reports that 'only about half of those surveyed correctly calculated the out-of pocket cost for a hospital stay involving a deductible and co-pay.

Understanding health insurance terms and understanding how to read and apply health plan benefits can support Coloradan's ability to make informed decisions about their health care coverage.

Alliance for Health Reform: http://www.allhealth.org/publications/Private_health_insurance/Health-Literacy-Toolkit_163.pdf

Kaiser Family Foundation: http://kff.org/health-reform/poll-finding/assessing-americans-familiarity-with-health-insurance-terms-and-concepts/

S.A. Somers and R. Mahadevan. Health Literacy Implications of the Affordable Care Act. Center for Health Care Strategies, Inc., Nov. 2010

GOAL 11: INCREASED PATIENT ENGAGEMENT AND HEALTH LITERACY

OBJECTIVE 11.1:

Increase the availability of patient navigator and community health worker services along the cancer care continuum.

STRATEGIES:

1. Identify the current and projected patient navigator and community health worker workforce needed in the cancer care continuum (prevention to end-of–life care).
2. Promote competency-based and accessible training for patient navigators and community health workers within the cancer care continuum.
3. Promote the implementation of evidence-based patient navigator and community health worker services within the cancer care continuum

MEASURES:

Cancer treatment facilities employing patient navigators Baseline: **TBD**[5]	2020 Target: **TBD**[5]
Community health clinics employing patient navigators Baseline: **TBD**[5]	2020 Target: **TBD**[5]
Communities employing community health workers Baseline: **TBD**[5]	2020 Target: **TBD**[5]

[5] *Colorado's cancer community will explore data source options and determine a baseline and target by December 2017.*

HERMINIA ARAMBULA: PATIENT NAVIGATOR AND HERO

When Sofia* was diagnosed with breast cancer at age 26, she had no insurance. Worried about the cost of treatment and afraid of how she would survive cancer, she turned to Denver Health and a veteran patient navigator named Herminia Arambula.

> Patient navigation can improve cancer care by reducing barriers people can face in getting timely cancer screening, diagnosis, treatment and supportive care.

Herminia helped Sofia enroll in the Colorado Indigent Care Program and the Colorado Department of Public Health and Environment Women's Wellness Connection to cover cancer diagnoses and treatment. But the hurdles remained.

When cancer treatment forced Sofia to quit her job, Herminia helped her with a place to live by pulling together three months of rent and then $2,000 for a mobile home for her and her three children. She received food from local food banks, clothes from local churches and bus passes for her infusion appointments. Sofia's oncologist chipped in for school clothes and Herminia drove Sofia to and from her appointments when the passes weren't available. Because Sofia had no family in Colorado, Herminia connected her to a psychologist and a Spanish-speaking support group all the while providing emotional support herself.

HERMINIA ARAMBULA: PATIENT NAVIGATOR AND HERO, CONT.

Tragically, Sofia's husband was killed in a work-related accident while she was undergoing cancer treatment. Herminia stepped in again, linking her to a pro-bono lawyer who helped her claim some compensation for the death of her husband. Sofia wanted to use the money to pay back everyone who had helped her so far, but no agency would take it, knowing what they did about the barriers she faced.

Today, Herminia reports that Sofia is happy and healthy. She still lives in the mobile home Herminia arranged for her and still sees Herminia every year when she comes in for her exams. And she remains grateful for all Herminia and Denver Health did for her. She says,

> "The hospital should hire more people like you to help patients like me."

**patient's name has been changed*

OBJECTIVE 11.2:

Increase Coloradans' understanding of general health, medical and insurance information.

STRATEGIES:

1. Assess, develop and implement organizational practices for the purpose of promoting increased understanding of health information. A standardized tool such as the Agency for Healthcare Research and Quality (AHRQ) Health Literacy Universal Precautions Toolkit or a framework such as the Ten Attributes of Health Literate Health Care Organizations from the Institute of Medicine, can assist organizations with determining current health literacy practices.
2. Develop and implement consumer tools (print and online) that aid in informed decision-making during health insurance enrollment and renewal periods.
3. Use of targeted approaches and tailored communication to ensure clear communication channels (oral, written and online) for the purpose of making health-related decisions.
4. Revise or identify new cancer prevention, screening, survivor or caregiver materials that meet health literacy standards, for example the AHRQ Health Literacy Universal Precautions Toolkit.
5. Disseminate health literacy standards to primary care and oncology providers in addition to cancer treatment centers, hospitals and clinics; also include associated community health workers and patient navigators in dissemination.

MEASURES:

Adults who feel confident in understanding the term co-insurance Baseline: **65.4%** *(2015 CHAS)*	2020 Target: **75.2%**
Adults at or below the federal poverty line who feel confident in defining the following four terms: premium, deductible, copayment and co-insurance Baseline: **45.4%** *(2015 CHAS)*	2020 Target: **52.2%**

STRATEGIES, CONTINUED:

6. Increase consumer representation, in particular cancer survivors and caregivers, on boards of organizations serving cancer patients and survivors for the purpose of seeking, gathering and using consumer feedback on services and materials.

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Everyone in Colorado has a role to play in preventing and controlling cancer, and in supporting Colorado's cancer survivors.

Together we can make a difference.

COLORADO
Department of Public Health & Environment

Colorado Cancer Coalition