2016 – 2020 VERMONT CANCER PLAN

A FRAMEWORK FOR ACTION

Effective March 2016

VERMONT DEPARTMENT OF HEALTH

VTAAC Vermonters Taking Action Against Cancer

Contents

2016 – 2020 Vermont Cancer Plan: A Framework for Action is available at healthvermont.gov/cancer.

Vermont Department of Health (VDH) 108 Cherry Street, PO Box 70, Burlington VT 05402
Vermonters Taking Action Against Cancer (VTAAC) 55 Day Lane, Williston VT 05495

My fellow Vermonters,

Cancer is the leading cause of death in our state, and disproportionately affects some of our most vulnerable residents. Approximately four out of 10 men and women in the U.S. will develop cancer in their lifetime. Cancer touches many Vermonters every day and affects us and our communities, friends, and families.

Effective cancer prevention and control requires a lot of work on the part of many. The Vermont Department of Health's Comprehensive Cancer Control Program, Vermont's statewide cancer coalition, Vermonters Taking Action Against Cancer (VTAAC), and our network of community, clinical, and nonprofit partners are leading the effort. Over the past 10 years, the Health Department and VTAAC have brought together hundreds of people and organizations from around the state. Together they have made significant progress in reducing the burden of cancer in Vermont.

While considerable achievements have been made, much work remains. This new 2016 – 2020 Vermont Cancer Plan is a guide for cancer control practices across the state. The plan represents the collective efforts of cancer stakeholders across Vermont. It is a roadmap for addressing cancer in Vermont with the goals of preventing, detecting and treating cancer, as well as improving the lives of cancer survivors and their families.

All Vermonters play an important role in addressing the impact of cancer within our communities. Please help us bring this plan to life and focus your efforts, along with all Vermonters, to reduce the impact of cancer statewide. Working together we can strengthen our partnerships and support the actions that will help create a healthier Vermont.

Yours in health,

Harry Chen MD

Harry Chen, MD
Vermont Commissioner of Health

Executive Summary

The *2016 – 2020 Vermont Cancer Plan* provides guidance, information, data, and links to partners and resources for all Vermonters. Vermont's cancer community – including the Department of Health, the statewide cancer coalition, Vermonters Taking Action Against Cancer (VTAAC), hospitals, cancer survivors, non-profit organizations and other community organizations came together to create this document.

The *Vermont Cancer Plan* goals and objectives build upon Vermont's State Health Assessment plan, called *Healthy Vermonters 2020 (HV 2020)*, which assesses and tracks the health status of Vermonters. HV 2020 includes more than 100 population health indicators that will guide the work of public health through 2020.

Cancer is the leading cause of death in Vermont.

From the 1960s through 2006, the two leading causes of death in Vermont were heart disease and cancer, respectively. In 2007, cancer took over as the leading cause of death among Vermonters. It significantly impacts the physical, economic, and social well-being of individuals and families across Vermont. Cancer incidence is the number of new cases occurring in a population during a year. Each year, approximately 3,600 Vermonters are diagnosed with cancer (Vermont Cancer Registry, 2008–2012). Cancer mortality is the number of deaths from cancer occurring in a population during a year. Each year more than 1,300 Vermonters die of cancer (Vermont Vital Statistics, 2008–2012).

Cancer in Vermont

Five types of cancer make up the majority of new cancers diagnosed or cancer-related deaths (Figure A). The sites in the body in which these cancers occur are different for men and women. More commonly diagnosed cancers, such as melanoma, are not leading causes of cancer death because the chances of survival are very good. In contrast, certain cancers, such as pancreatic cancer, are less commonly diagnosed but much more likely to cause death.

Early Detection

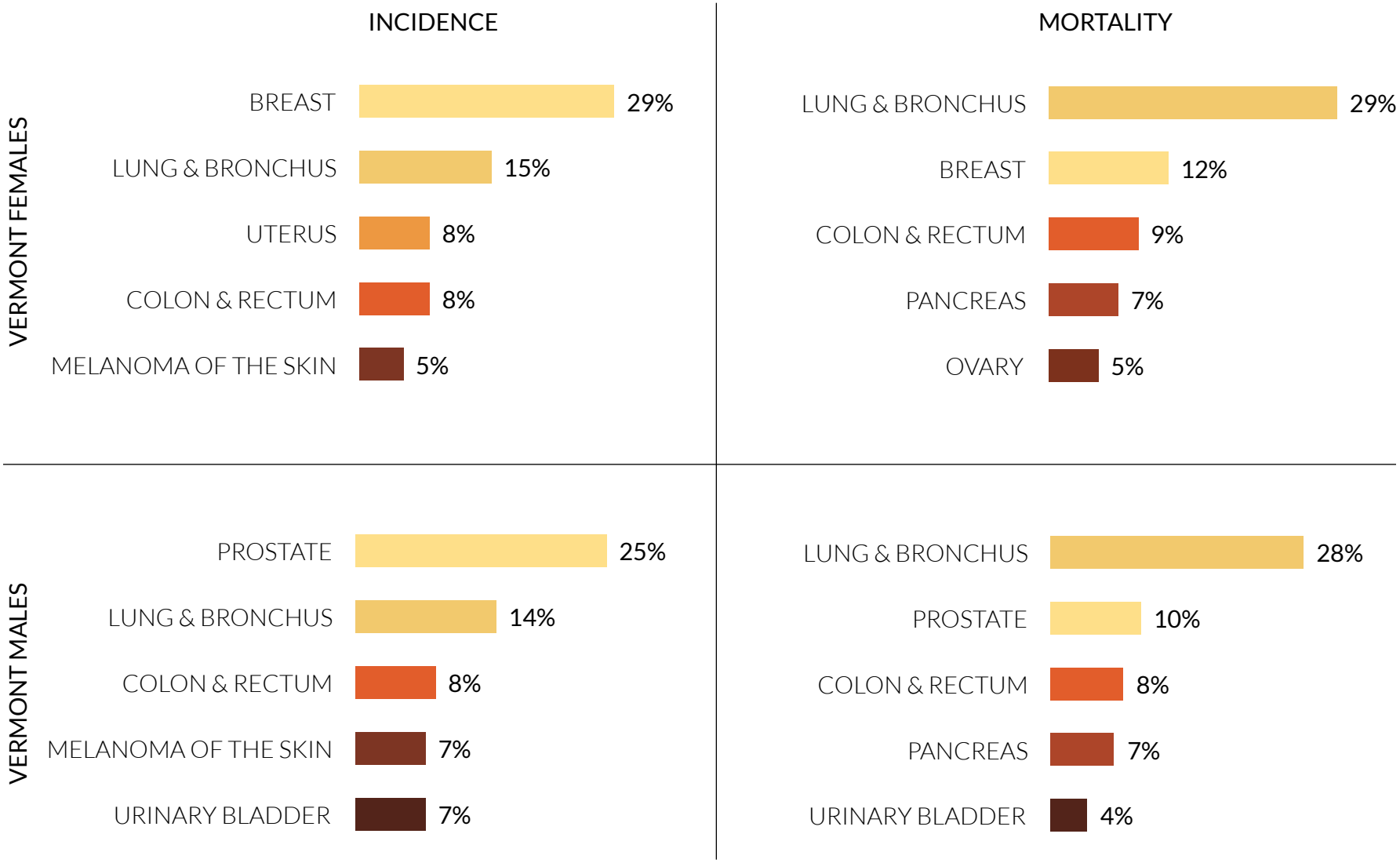
When cancer is found and treated early, a person's chance for survival is much better. Some cancers, such as melanoma, prostate, and female breast, are most often diagnosed at earlier stages.

FIGURE A.

LEADING CANCER INCIDENCE AND MORTALITY BY GENDER

Note: Incidence rates exclude in situ carcinomas except urinary bladder. Excludes non-melanoma skin cancer.

Data Sources: Vermont Cancer Registry 2008-2012, Vermont Vital Statistics 2008-2012—preliminary.

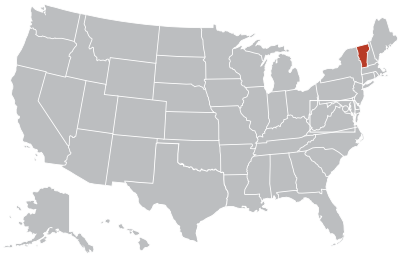


Other cancers, such as colorectal and lung, are usually diagnosed at later stages. Screening tests, including those available for breast, cervical, colorectal, and lung cancers, help to detect cancer at an early stage when treatment works best.

Tracking the stage at diagnosis for common cancers in Vermont is a good way to monitor the impact of cancer screening.

Vermont compared to U.S.

After accounting for the age and size of the population, the 2008–2012 age adjusted cancer incidence rate in Vermont (471.9 per 100,000) is higher than the U.S. rate (461.9 per 100,000). Incidence rates of different cancer types vary from year to year. In general, Vermont typically has higher rates of melanoma, lung, bladder, and uterine cancers than the U.S. However, Vermont generally has lower rates of prostate, colorectal, cervical, and stomach cancers than the U.S.



2016 – 2020 Cancer Plan Goals, Objectives & Strategies

The plan outlines the shared goals, objectives, and priority strategies for reducing the burden of cancer in Vermont over the next five years. The 2016-2020 goals are:

Disparities
Reduce cancer-related disparities in Vermont

FOCUS AREAS: Low-Income Vermonters (adults with a household income under 250% of the Federal Poverty Level); and Cancer Survivors.

ACTIONS: Assess barriers to screening and preventive care; work with partners who serve low-income populations; promote and support advocacy for quality, affordable care; and continue surveillance work to assess the impact of cancer on low-income populations.

Prevention
Prevent cancer from occurring or recurring

FOCUS AREAS: Tobacco; Oral Health; Physical Activity and Nutrition; HPV; and Environmental Hazards (ultraviolet radiation, radon and safe drinking water).

ACTIONS: Collaborate with partners focused on chronic disease prevention (such as tobacco, oral health, physical activity and nutrition); promote widespread adolescent vaccination for a complete HPV vaccine series; support partners and promote programs focused on reducing environmental hazards like radon and safe water; and support efforts to use media to educate key audiences about risk factors for cancer.

Early Detection
Detect cancer at its earliest stages

FOCUS AREAS: Colorectal, Cervical, Breast, Lung, and Prostate Cancers.

ACTIONS: Promote public and provider cancer screening guideline documents; contribute to public and provider education; promote and implement health systems interventions; and support efforts to use media to promote the importance of screening and early detection.

Cancer Directed Therapy & Supportive Care
Treat cancer with appropriate, quality care

FOCUS AREAS: Cancer Directed Therapy; Palliative Care; and Complementary and Integrative Medicine.

ACTIONS: Promote the importance of palliative care within the cancer treatment cycle; promote safe and educated use of appropriate complementary therapies; and promote cancer treatment based on evidence-based guidelines, treatment planning, and the needs of the whole patient.

Survivorship & End-of-Life Care
Ensure the highest quality of life possible for cancer survivors

FOCUS AREAS: Survivorship Care Plans; Optimal Health for Survivors; and End-of-Life Care.

ACTIONS: Promote and educate partners regarding the importance of survivorship care plans; support survivorship programs; educate survivors and providers about strategies to reduce cancer recurrence and promote optimal health for survivors; and support end of life care initiatives.

"I am not just surviving, I am thriving!"

Susan—Vermont Cancer Survivor

Evaluation

Evaluation is a fundamental component of the *Vermont Cancer Plan*. A five-year evaluation plan has been developed in conjunction with the Cancer Plan to measure and improve the effectiveness of the Vermont Comprehensive Cancer Control program, VTAAC and the plan. The evaluation plan follows the parameters recommended by the Centers for Disease Control and Prevention's Division of Cancer Prevention and Control. These criteria are to focus on the three components of the Comprehensive Cancer Control program: the Plan, Partnership, and Program. Evaluation questions and findings will demonstrate the degree of program impact, how specific strategies have contributed to overall goals, and how accountability and progress have been supported by the Vermont Comprehensive Cancer Control Program and VTAAC.

The evaluation plan can be found on the Department of Health website at: healthvermont.gov/cancer

Take Action

Everyone can play a role in the fight against cancer. All Vermonters can help to reduce the state's cancer burden, and are encouraged to use the plan as their guide.

For more information about cancer in Vermont and how you can help please visit the websites for the Department of Health Cancer Prevention and Control programs and for VTAAC.

Vermont Department of Health: healthvermont.gov/cancer

Vermonters Taking Action Against Cancer (VTAAC): vtaac.org

Burden of Cancer in Vermont

Introduction

Cancer is any disease where uncontrolled growth and spread of abnormal cells occurs in the body. Different types of cancers have different causes, rates of occurrence, and survival.

Cancer is very common. Roughly four out of 10 men and women in the U.S. will develop cancer in their lifetime[1]. As a population ages, the occurrence of new cancer cases is expected to increase.

Vermont spent over 280 million dollars on healthcare for people with cancer in 2013[2].

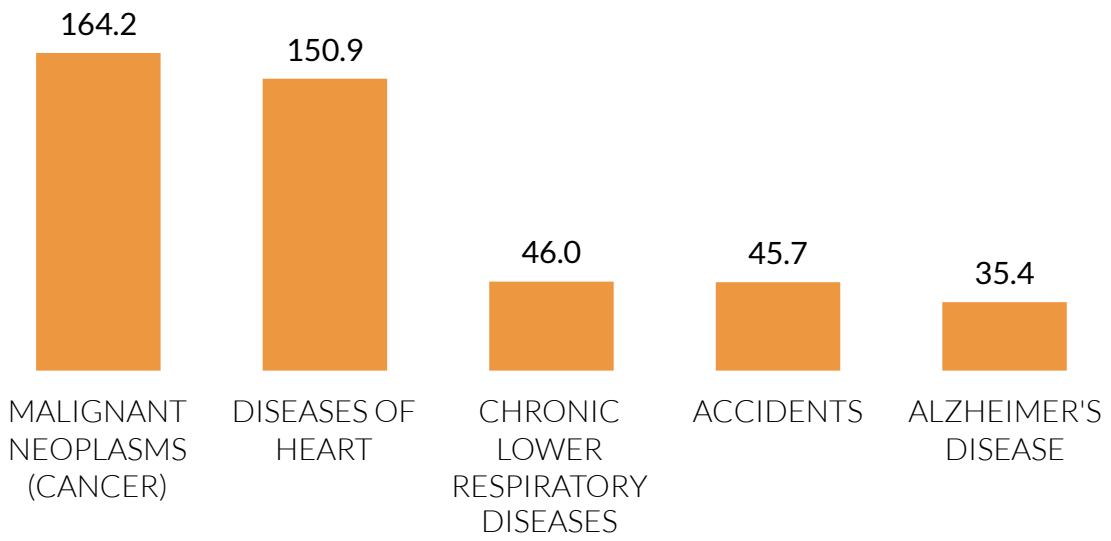
More people die from cancer than from any other cause of death in Vermont (Figure 1). From the 1960s through 2006, the two leading causes of death in Vermont were heart disease and cancer, respectively. In 2007, cancer took over as the leading cause of death among Vermonters.

FIGURE 1.

2012 VERMONT RESIDENT DEATHS: FIVE LEADING CAUSES OF DEATH, BY SEX

Age adjusted rates per 100,000 population

Data Source: Vermont Vital Statistics 2012 - preliminary.



1 Lifetime Risk (Percent) of Being Diagnosed with Cancer by Site and Race/Ethnicity: Males, 18 SEER Areas, 2010-2012 (Table 1.16) and Females, 18 SEER Areas, 2010-2012 (Table 1.17). 2014. Accessed at http://seer.cancer.gov/csr/1975_2012/results_merged/topic_lifetime_risk.pdf on 11/17/2015.

2 Vermont health care spending was 5.3 billion dollars in 2013 (Green Mountain Care Board 2013 Vermont Health Care Expenditure Analysis). The proportion of health care spending that was spent on cancer care (5.3% in 2013) was calculated from national estimates of total medical expenditures and cancer care specific medical expenditures (2013 Medical Expenditure Panel Survey).

Cancer Incidence & Mortality

Cancer incidence is the number of new cases occurring in a population during a year. Each year, approximately 3,600 Vermonters are diagnosed with cancer (Vermont Cancer Registry, 2008–2012). Cancer mortality is the number of deaths from cancer occurring in a population during a year. Each year more than 1,300 Vermonters die of cancer (Vermont Vital Statistics, 2008–2012).

Leading Sites

Five types of cancer make up the majority of new cancers diagnosed or cancer-related deaths (Figure 2). The sites in the body in which these cancers occur are different for men and women. More commonly diagnosed cancers, such as melanoma, are not leading causes of cancer death because the chances of survival are very good. In contrast, certain cancers, such as pancreatic cancer, are less commonly diagnosed but much more likely to cause death.

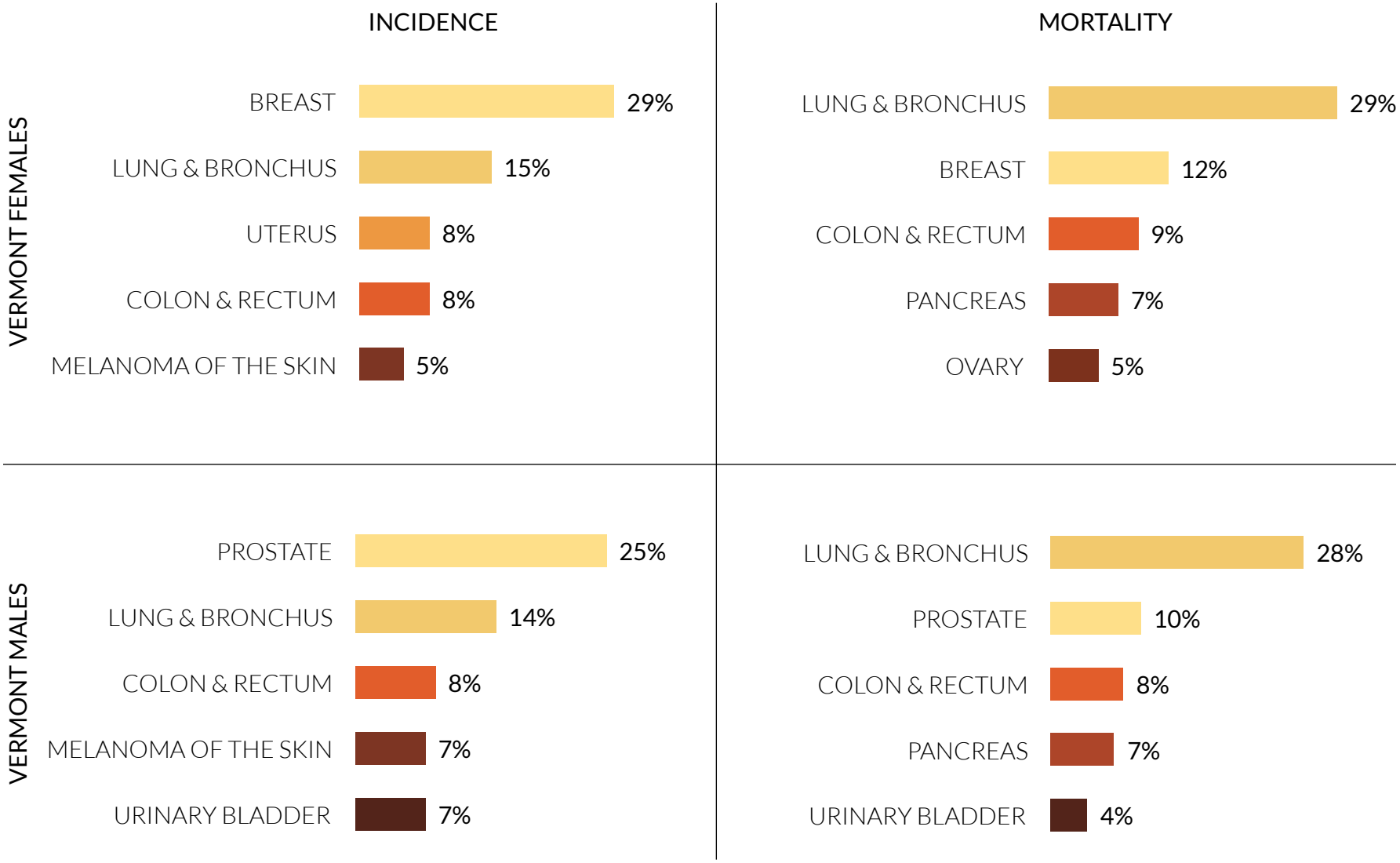
More people die from cancer than from any other cause of death in Vermont.

FIGURE 2.

LEADING CANCER INCIDENCE AND MORTALITY BY GENDER

Note: Incidence rates exclude in situ carcinomas except urinary bladder. Excludes non-melanoma skin cancer.

Data Sources: Vermont Cancer Registry 2008-2012, Vermont Vital Statistics 2008-2012—preliminary.



Stage (Extent of Disease at Diagnosis)

When cancer is found and treated early, a person's chance for survival is much better. Some cancers, such as melanoma, prostate, and female breast, are most often diagnosed at earlier stages. Other cancers, such as colorectal and lung, are usually diagnosed at later stages. Screening tests, including those available for breast, cervical, and colorectal and lung cancers, help to detect cancer at an early stage when treatment works best. Tracking the stage at diagnosis for common cancers in Vermont (Figure 3) is a good way to monitor the impact of cancer screening.

Cancer stage definitions

IN SITU: Cancer cells are present, but the tumor has not invaded the supporting structure of the organ of origin.

LOCALIZED: The cancer is limited to the organ of origin.

REGIONAL: The tumor has extended beyond the limits of the organ of origin, either to adjacent organs, lymph nodes, or both.

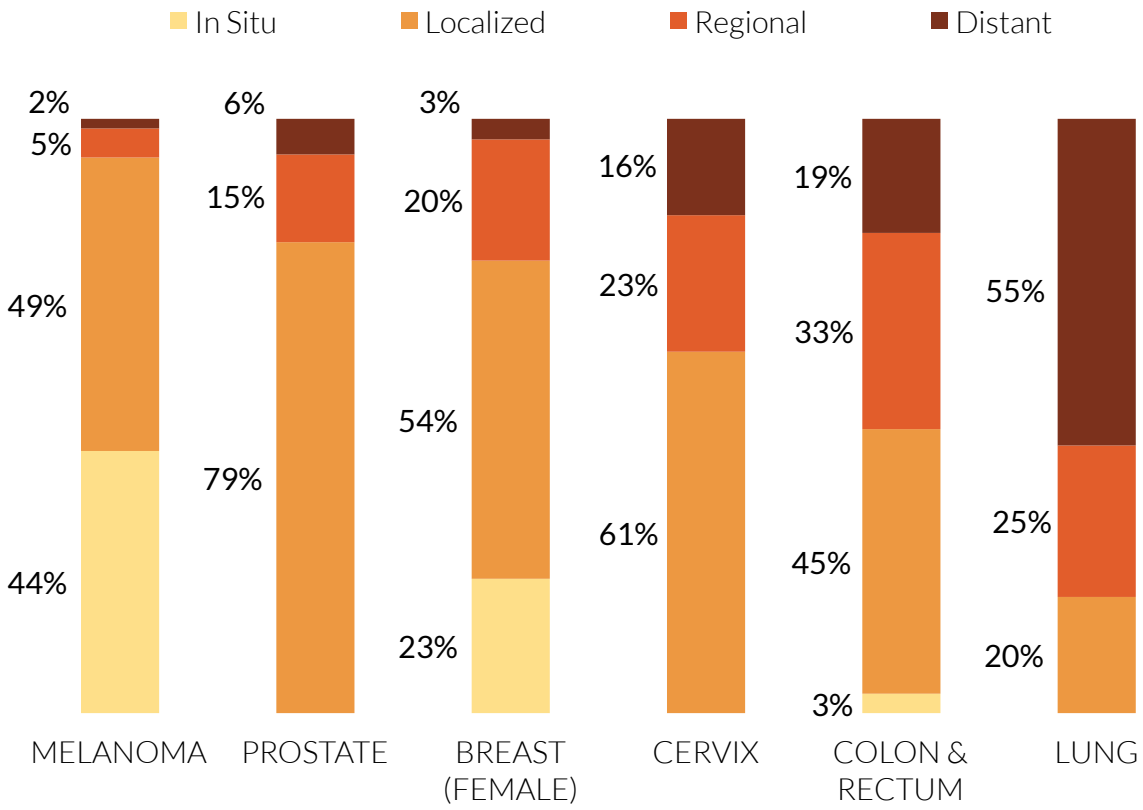
DISTANT: Tumor cells have broken away from the primary tumor, traveled to other parts of the body, and begun to grow at the new location.

FIGURE 3.

CANCER STAGE AT DIAGNOSIS . % OF TOTAL CASES OF CANCER BY TYPE, ACCORDING TO STAGE AT DIAGNOSIS, VERMONT

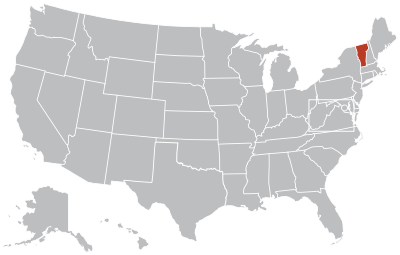
Note: Cervical cancers diagnosed as in situ are not reported to the Vermont Cancer Registry (VCR) and are therefore not included in this chart.

Data Source: Vermont Cancer Registry 2008-2012



Vermont Compared to U.S.

After accounting for the age and size of the population, the 2008–2012 age adjusted cancer incidence rate in Vermont, (471.9 per 100,000), is higher than the U.S. rate (461.9 per 100,000).



Incidence rates of different cancer types vary from year to year. In general, Vermont typically has higher rates of melanoma, lung, bladder, and uterine cancers than the U.S. However, Vermont generally has lower rates of prostate, colorectal, cervical, and stomach cancers than the U.S.

Risk for Developing Cancer

A cancer risk factor is a condition, activity, or type of exposure that increases a person's chance of developing cancer. Cancer develops gradually as a result of many different factors related to lifestyle choices, environment and genetics. Anyone can develop cancer, including children; however, the risk of being diagnosed with cancer increases with age, and most cancers occur in adults who are older. Personal behaviors such as tobacco use, alcohol use, diet, physical inactivity, and overexposure to sunlight can increase the risk of developing certain cancers. Nearly two-thirds of cancer deaths in the U.S. can be linked to tobacco use, poor diet, obesity, and lack of exercise.

Cancers associated with certain risk factors

EXPOSURE TO...	INCREASES THE RISK OF DEVELOPING...
UV light	Melanoma and non-melanoma skin cancers.
Tobacco	Cancers of the lung, mouth, lips, nose, sinuses, larynx (voice box), pharynx (throat), esophagus, stomach, colon and rectum, pancreas, cervix, uterus, ovary, bladder, kidney, and acute myeloid leukemia.
Excess weight	Cancers of the breast (postmenopausal), colon and rectum, uterus, esophagus, kidney, pancreas, thyroid, and gallbladder. May also increase the risk for cancers of the ovary, cervix, liver, non-Hodgkin lymphoma, myeloma, and prostate (advanced stage).
HPV	Cancers of the cervix, vagina, vulva, anus, penis, tongue, tonsil, and throat.

Cancer Prevalence

Cancer prevalence is the number of people alive today who have ever been diagnosed with cancer. This includes individuals who are newly diagnosed, in active treatment, have completed active treatment, and those living with progressive symptoms of their disease.

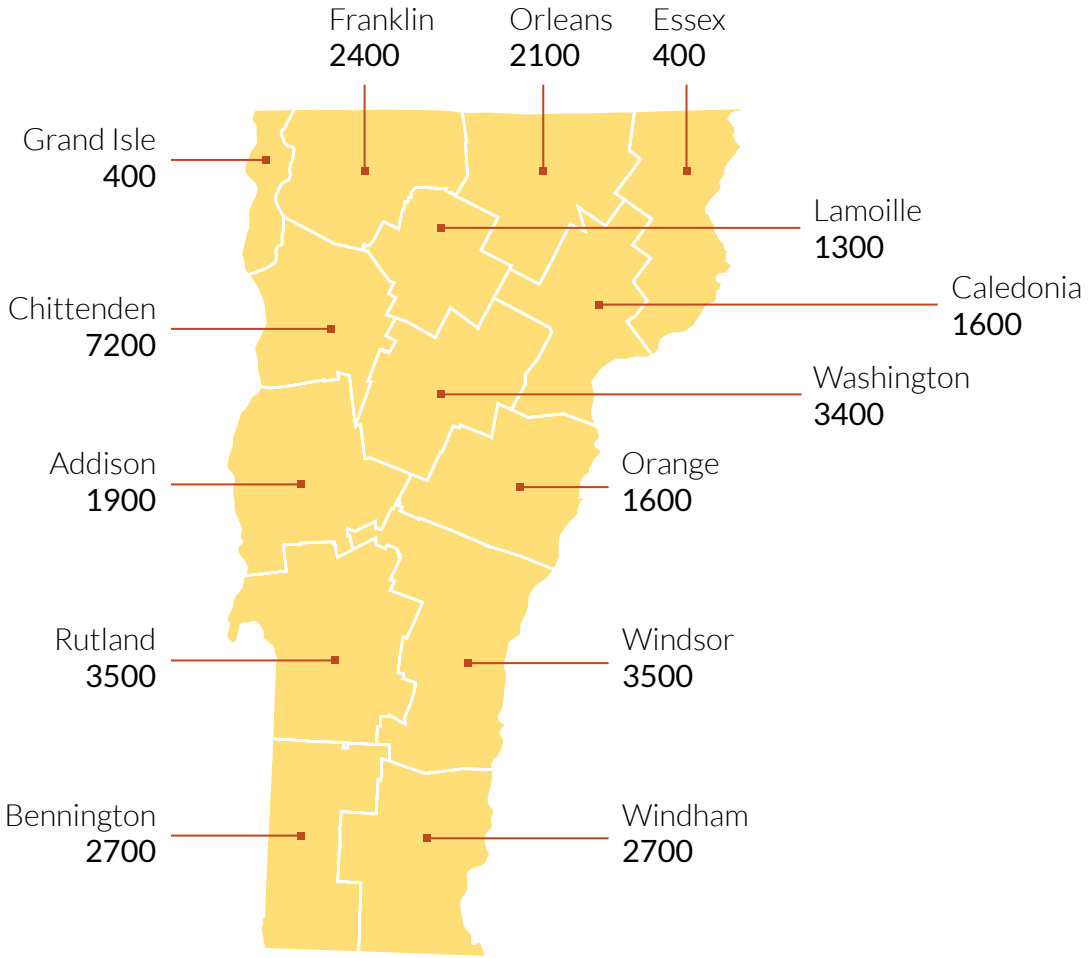
As Vermont and the nation's population ages, the occurrence of new cancer cases is expected to increase. With treatment advances, people are living longer with a cancer diagnosis. The number of cancer survivors increased by over a third between 2002 and 2012.[3,4]

Approximately 36,000 adult Vermonters (7%) are living with a current or previous diagnosis of a non-skin cancer (Behavioral Risk Factor Surveillance System (BRFSS), 2014). There are no significant differences in the proportion of cancer survivors living in different counties in Vermont (Figure 4).

FIGURE 4.

VERMONT ADULT CANCER SURVIVORS (PREVALENCE) ESTIMATED NUMBER BY COUNTY

Data Source: BRFSS 2012-2014



3 SEER Cancer Statistics Review 1975-2002: U.S. Complete Prevalence Counts, Invasive Cancers Only, January 1, 2002 (Table I-18). Accessed at http://seer.cancer.gov/archive/csr/1975_2002/results_merged/topic_prevalence.pdf on 11/17/2015.

4 SEER Cancer Statistics Review 1975-2012: U.S. Complete Prevalence Counts, Invasive Cancers Only, January 1, 2012 (Table 1-23). Accessed at http://seer.cancer.gov/csr/1975_2012/results_merged/topic_prevalence.pdf on 11/17/2015.

Cancer prevalence increases with age (Figure 5). A statistically higher percentage of Vermont women (8%) report being cancer survivors compared to men (6%, BRFSS 2012-2014).

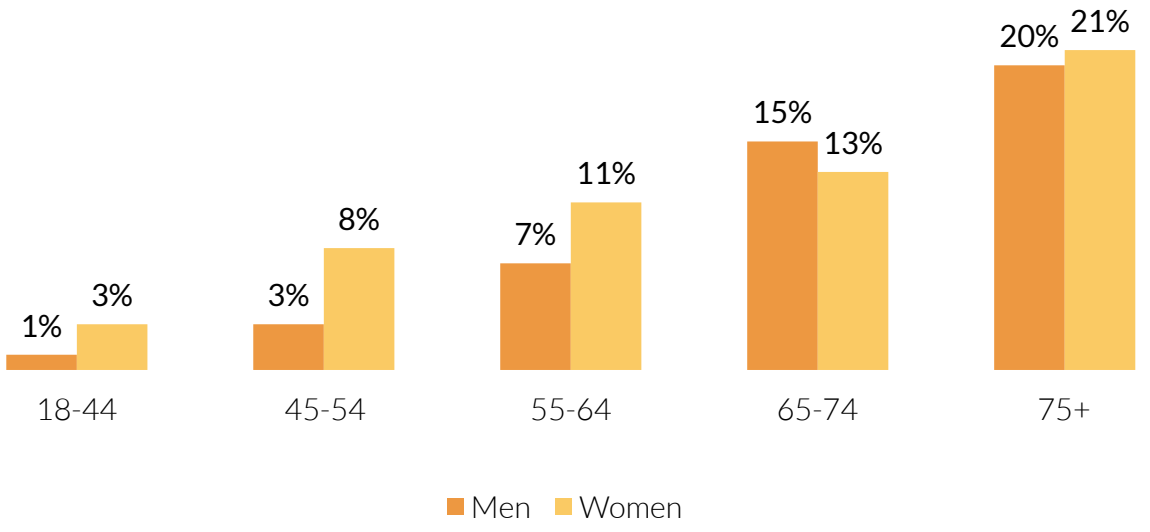
A higher percentage of women aged 18 to 64 years report being a cancer survivor than men of the same age (BRFSS 2012-2014). A similar percentage of men and women aged 65 years and older, however, report being a cancer survivor (BRFSS 2012-2014).

For more information on Vermont's cancer burden, visit healthvermont.gov/cancer

FIGURE 5.

VERMONT CANCER SURVIVORSHIP BY AGE AND SEX

Data Source: BRFSS 2012-2014



Goals, Objectives & Strategies

This section provides an overview of the factors influencing cancer in Vermont and outlines the goals, objectives and strategies that will be addressed through the *Vermont Cancer Plan*. The information in this section is aligned with the overarching goals of the plan:

Disparities

Reduce cancer-related disparities in Vermont.

Prevention

Prevent cancer from occurring or recurring.

Early Detection

Detect cancer at its earliest stages.

Cancer Directed Therapy & Supportive Care

Treat cancer with appropriate, quality care.

Survivorship & End-of-Life Care

Assure the highest quality of life possible for cancer survivors.

The definitions below describe the measurement terms used in this plan:

GOALS: The major changes to be achieved through *Vermont Cancer Plan* efforts.

OBJECTIVES: Measurable accomplishments to achieve the goals.

STRATEGIES: Specific actions taken to achieve objectives. Strategies are based on research or proven best practices when possible.

TARGETS: Benchmarks for measuring progress.

TIMEFRAME: All targets are set for the five year timeframe of this plan: 2016-2020.

Disparities
Reduce cancer-related disparities in Vermont

Overview

In Vermont, and nationally, certain vulnerable populations often face barriers to good health. As a result, these individuals are more likely to suffer from disease and may die earlier than other population groups. While the overarching goal of the *Vermont Cancer Plan* is to address and reduce barriers to achieving good health for all Vermonters, the key priority populations for the plan are:

- Low-income Vermonters—adults with a household income under 250 % of the Federal Poverty Level [FPL][5]; and
- Cancer survivors

Low-Income Vermonters

Forty-one percent of Vermont adults have a household income under 250 percent of the Federal Poverty Level (FPL) (BRFSS 2014). Low-income Vermonters are more likely to engage in unhealthy behaviors that may increase the risk of cancer and reduce cancer prevention and control outcomes when compared to higher-income Vermonters. Unhealthy behaviors include smoking, no physical activity, poor nutrition and not receiving recommended cancer screenings.

Other vulnerable groups in Vermont include racial and ethnic minorities, people with limited access to health services, people with less education than a high school degree, members of the LGBT (lesbian, gay, bisexual, or transgender) community, people with disabilities, and those residing in certain counties. These groups are hard to address individually as they each make up a small portion of the Vermont population. However, most of the Vermonters in each of these groups are also low-income (see Table 1).

Numerous objectives in the plan specifically target Vermonters living at less than 250 percent of the Federal Poverty Level. Plan interventions targeted to low-income Vermonters will help address and reduce the barriers to good health.

Cancer Survivors

Cancer survivors face unique challenges with physical health and maintaining a healthy lifestyle. Due to the effects of earlier cancer treatment, underlying genetics, and unhealthy behaviors such as poor diet, lack of exercise, and smoking, cancer survivors are at greater risk for cancer recurrence and for developing second cancers. Data demonstrate that the frequency of some of the unhealthy behaviors is higher among cancer survivors than among those never diagnosed with cancer. For example, Vermont adult cancer survivors have a higher smoking rate (31%) than those never diagnosed with cancer (17%, BRFSS 2014). Several objectives in this plan specifically target cancer survivors, with an emphasis on reducing the prevalence of cancer risk factors.

5 Federal Poverty Level (FPL) is a federal measure calculated from both annual household income and family size. FPL is used to determine eligibility for government assistance programs. People living below 250% FPL, for example, are still considered low-income, often lacking sufficient income to meet basic needs.

TABLE 1

The prevalence of specific disparities in the adult Vermont population, and the percentage of each population that resides under 250% of the Federal Poverty Level (FPL).

Data source: BRFSS, County: 2013 and 2014, State: 2014.

POPULATION	% OF ADULT VERMONT POPULATION	% OF ADULT VERMONT POPULATION LIVING UNDER 250% FPL
Racial and ethnic minorities	6%	55%
Uninsured[a]	8%	61%
Medicaid recipients[b]	13%	89%
No medical home	13%	53%
Less education than a high school degree[c]	8%	78%
Lesbian, gay, bisexual, and/or transgender	5%	50%
Have a Disability[d]	24%	58%
Essex County[e]	1%	60%
Orleans County[e]	4%	56%
Bennington County[e]	5%	50%

a Among those Vermonters under age 65.

b Among those Vermonters who report having insurance.

c Among those 25 years of age and older.

d Disability is defined as activity limitations due to physical, emotional, or mental problems OR any health problem that requires use of special equipment (e.g. wheelchair or special phone).

e This county is one of the three lowest ranked counties in Vermont for both health factors and health outcomes in the County Health Rankings 2015. Source: http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2015_VT_0.pdf.

Goal 1. Reduce disparities in behavioral risks, early detection, treatment and survivorship of cancer in Vermont.

"Part of my support through my cancer journey came from other cancer survivors. Vermont is rural and sometimes it is difficult to get a group of people together for an extended period of time. However, in my small community we have woven together a core group of survivors to help support each other and newly diagnosed people during our times of need."

Mary Ellen—Vermont Cancer Survivor

Strategies

- Focus cancer prevention, early detection, treatment, and survivorship efforts on populations known to face cancer-related disparities, with a focus on populations earning less than 250% of Federal Poverty Level (FPL).
- Work with partners to advance state policy and legislative solutions to increase the accessibility and affordability of quality health care coverage and for broadening the range of covered health care options.
- Implement surveillance activities to monitor Vermont's cancer burden, with a focus on identifying populations facing cancer-related disparities.
- Monitor Vermont and national health care reform as it relates to cancer prevention and control, and provide relevant information to VTAAC members.
- Investigate and work to address Vermonters' barriers to accessing quality cancer care.
- Assist Vermont Commission on Cancer accredited cancer programs in identifying and addressing cancer-related disparities in their service areas.

Prevention
Prevent cancer from occurring or recurring

Overview

Preventing cancer and cancer recurrence is fundamental to the overall reduction of cancer in Vermont. Although not all cancers are preventable, many cancers are linked to lifestyle choices such as tobacco use, alcohol consumption, physical inactivity, poor diet and exposure to ultraviolet (UV) light. Other influences such as viral infections and environmental exposures can also increase a person's risk for cancer.

Tobacco

Tobacco use is the number one cause of preventable death. People who use tobacco products or who are regularly around secondhand smoke have an increased risk of many different cancers as described in the *Burden of Cancer in Vermont* section of the plan. In the U.S., exposure to cancer-causing substances in tobacco products accounts for about one-third of all cancer deaths.[6]

There is no safe level of tobacco use. People who quit smoking, regardless of their age, experience major and immediate health benefits as well as significant gains in life expectancy compared to those who continue to smoke. Furthermore, quitting smoking after a cancer diagnosis has been proven to increase survival rates, reduce risk of developing secondary cancers, improve treatment response, and reduce treatment side effects as well as an improved quality of life.

6 American Cancer Society. *Cancer Facts & Figures* 2015. Atlanta: American Cancer Society; 2015.

The objectives laid out in this plan align with the priorities of the Vermont Department of Health's Tobacco Control Program. This program works with partners such as VTAAC to carry out strategies to reduce smoking and secondhand smoke exposure in Vermont.

Oral Health

Regular oral health care can directly impact cancer prevention and control. Because some oral cancers can spread quickly, screening and early detection are important. Most oral cancers are related to tobacco and heavy alcohol use. Dentists and hygienists play a key role in the prevention and early identification of oral cancers (and other chronic disease risk factors) by performing oral cancer exams, discussing the risks of tobacco and heavy alcohol use, and promoting cessation services.

Many people treated for cancer, particularly those receiving head and neck radiation, can develop treatment complications that affect the mouth. These problems may interfere with cancer treatment outcomes and diminish the patient's quality of life. Regular oral health care is important for cancer survivors during and after cancer treatment to reduce the risk and impact of these side effects.

"I would tell any young person or anyone, for that matter, not to smoke because cancer risks are too high."

Jim—Vermont Cancer Survivor

The objectives laid out in this plan align with the priorities of the Vermont Oral Health Plan, coordinated by the Vermont Department of Health Office of Oral Health. This program works with partners such as VTAAC to address oral health issues in Vermont.

Physical Activity and Nutrition

Overweight and obesity are associated with an increased risk of developing many types of cancer as defined in the *Burden of Cancer in Vermont* section of this plan. Lack of physical activity and poor nutrition are the main contributors to obesity. Approximately one-third of the cancers diagnosed in the U.S. are linked to these risk factors.[7]

Adopting or maintaining a healthy lifestyle after a cancer diagnosis can reduce morbidity and mortality from cancer and other chronic diseases. Reducing excess body weight through good nutrition and regular exercise can enhance the quality of life and extend the lifespan of cancer survivors as well as reduce their risk of developing secondary cancers and experiencing treatment side effects.

The objectives laid out in this plan align with the priorities of the Vermont Obesity Prevention Plan coordinated by the Department of Health Physical Activity and Nutrition Program. This program works with partners such as VTAAC to address obesity-related health issues in Vermont.

HPV

Human Papillomavirus (HPV) is the most common sexually transmitted infection in the U.S. There are many types of HPV. Some types cause genital warts, while other types don't cause any symptoms. More aggressive forms of HPV can lead to cancer in both men and women.

7 Colditz GA, Wei EK. Preventability of cancer: the relative contributions of biologic and social and physical environmental determinants of cancer mortality. *Annu Rev Public Health* 2012;33:137–56.

"Vaccines are the cornerstone of preventive health. I rely on others to get vaccinated because being a cancer survivor has lowered my immune system and I can't fight off things as well as healthy people can. HPV causes several types of cancer and if you can, prevent your child or self from that devastating disease."

Allison—Vermont Cancer Survivor

Numerous cancers in men and women can be caused by HPV, as described in the *Burden of Cancer in Vermont* section of the plan. Cervical cancer is the most common HPV-associated cancer. Almost all cervical cancer is caused by HPV.[8] Most of the HPV-linked cancers can be prevented by the HPV vaccine. The vaccine is recommended for preteen boys and girls at age 11 or 12 so they are protected before ever being exposed to the virus. Adolescents and young adults who did not start or finish the HPV vaccine series when they were younger can get it through age 26.

The objectives laid out in this plan align with the priorities of the Vermont Immunization Program. This program works with partners such as VTAAC to make sure Vermont children and adults are protected against vaccine-preventable disease.

To further reduce the burden of cervical cancer, women age 21-65 should be screened regularly to help prevent cervical cancer or detect cancers early. The objectives and strategies related to cervical cancer screening can be found in the *Early Detection* section of this plan.

Environmental Hazards

Factors in the environment can increase an individual's risk of cancer. In addition to secondhand smoke; ultraviolet (UV) radiation, radon, arsenic and asbestos are all environmental factors known to increase cancer risk. Many other substances have been investigated as possible causes of cancer, but more research is needed to link exposure with cancer risk.

The Vermont Environmental Public Health Tracking program links information on environmentally related diseases, human exposures and environmental hazards through a web-based tool that documents information about health conditions related to the environment. The objectives laid out in this plan align with the priorities of the Environmental Public Health Tracking program.

Ultraviolet Radiation

Skin cancer is the most common form of cancer in Vermont and the U.S. Melanoma is the least common, but most serious form of skin cancer. Vermont has one of the highest rates of melanoma incidence in the U.S.

Ultraviolet radiation exposure from the sun, sunlamps and tanning beds is the major known factor associated with melanoma. An intermittent pattern of sun exposure over many years and having at least one severe, blistering sunburn significantly increases melanoma risk. The use of tanning devices before the age of 35 also significantly increases the risk of developing melanoma.

8 Centers for Disease Control and Prevention. Human papillomavirus-associated cancers—United States, 2004–2008. *MMWR Morb Mortal Wkly Rep.* 2012; 61(15) 258–261.

Other risk factors include age, having fair skin / light hair, and a family history of melanoma.

Melanoma is largely preventable through use of sun protection methods, such as sunscreen, hats, protective clothing, shade, and sunglasses. Although prevention is the most effective strategy, all forms of skin cancer, including melanoma, are curable if detected at an early stage.

Radon

Radon is a radioactive gas released from the normal decay of radioactive elements in rocks and soil that seep up through the ground and collect in homes and other buildings. Long-term exposure to radon can lead to lung cancer. Radon is the second leading cause of lung cancer in the U.S. after tobacco smoke. Exposure to a combination of radon gas and tobacco smoke creates an even greater risk of lung cancer.

Elevated levels of radon have been found in all types of homes throughout Vermont. Testing is the only way to determine the level of radon in a home. Homes with elevated radon should have radon mitigation systems installed to reduce levels of the gas in the home. Free radon detection kits can be obtained from the Department of Health Radon Program. In addition to testing, radon-resistant building methods are promoted as a way to protect Vermonters from exposure to radon gas.

Safe Drinking Water

Under the federal Safe Drinking Water Act, all municipal and other public water supplies in Vermont and the U.S. must be tested regularly for bacteria, inorganic chemicals, naturally occurring radioactivity, and naturally occurring compounds. Some of the contaminants regulated under the Act are known carcinogens.

Approximately 60 percent of Vermonters receive their water from regulated community water systems, while 40 percent draw water from their own private wells or springs. While community water systems are tested regularly, private water supplies are not. Homeowners of private water supplies are encouraged to perform regular water testing to ensure their water is safe.

"I was very lucky when growing up to have parents who taught me sun safe habits, like wearing sunscreen and avoiding high sun. Now that I'm 21 it's my responsibility to continue these habits, even when taking care of my health is not encouraged by my peers."

Nina—Vermont Cancer Survivor

Goal 2. Reduce exposure to tobacco among Vermonters.

Objectives		Measures: BASELINE (YEAR)	Measures: **TARGET (2020)**
2.1	Decrease % of adults who smoke cigarettes. (Data Source: BRFSS)*	18% (2014)	**12%**
	a. Decrease % of adults *below 250% of FPL* who smoke cigarettes. (Data Source: BRFSS)*	29% (2014)	**12%**
	b. Decrease % of adult *cancer survivors* who smoke cigarettes. (Data Source: BRFSS)*	26% (2014)	**12%**
2.2	Decrease % of adolescents in grades 9-12 who smoke cigarettes. (Data Source: YRBS)	11% (2015)	**10%**
2.3	Increase % of adult smokers attempting to quit in the past year. (Data Source: BRFSS)*	59% (2014)	**80%**
2.4	Decrease % of adult non-smokers exposed to secondhand smoke. (Data Source: Adult Tobacco Survey)	46% (2014)	**30%**
2.5	Decrease incidence rate of tobacco-associated cancers. (Per 100,000 persons, Data Source: VCR)*	213.5 (2008-2012)	**202.8**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Educate health care providers on cessation resources, interventions and strategies.
- Facilitate the integration of closed-loop e-referrals into electronic health records systems to increase referrals to 802Quits.
- Coordinate efforts with cancer care providers to increase referrals to 802Quits for cancer patients and survivors.
- Support efforts to increase the number and type of tobacco and smoke-free environments including, college and hospital campuses, parks, beaches and community gathering spots.
- Support the decrease in point-of-sale tobacco advertising through policy and education.
- Promote broad media cessation messaging to increase registrants to 802Quits.

Goal 3. Increase use of the dental system among Vermonters.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
3.1	Increase % of adults using the dental system yearly. (Data Source: BRFSS)*	72% (2014)	**85%**
	a. % of adult cancer survivors who use the dental system yearly. (Data Source: BRFSS)*	70% (2014)	**85%**
3.2	Increase % of children in grades K-12 using the dental care system yearly. (Data Source: School Nurse Report)	K-6: 74% 7-12: 60% (2014)	**K-6: 80%** **7-12: 70%**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Increase awareness of the importance of oral health through public health dental hygienists and Tooth Tutor programs.
- Promote medical/dental integration.
- Increase access to oral health care through workforce initiatives.
- Maintain continuing education on tobacco prevention for oral health and primary care providers so that they can adequately provide all of their patients with the necessary information to help break their tobacco addiction.

Goal 4. Improve nutrition and physical activity among Vermonters.

	Objectives	Measures: BASELINE (YEAR)	Measures: **TARGET (2020)**
4.1	Decrease % of adults age 20+ who are obese. (Data Source: BRFSS)*	25% (2014)	**20%**
	a. Decrease % of adults age 20+ *below 250% of the FPL* who are obese. (Data Source: BRFSS)*	31% (2014)	**20%**
	b. Decrease % of *cancer survivors* age 20+ who are obese. (Data Source: BRFSS)*	21% (2014)	**20%**
4.2	Decrease % of adolescents in grades 9-12 who are obese. (Data Source: YRBS)	12% (2015)	**8%**
4.3	Increase % of adults who meet physical activity guidelines. (Data Source: BRFSS)*	59% (2013)	**65%**
4.4	Increase % of adults eating the daily recommended servings of fruit and vegetables per day. (Data Source: BRFSS)*	Fruit: 35% Veg: 18% (2013)	**Fruit: 45% Veg: 35%**
4.5	Increase % of adolescents in grades 9-12 eating the daily recommended servings of fruit and vegetables per day. (Data Source: YRBS)	Fruit: 34% Veg: 18% (2015)	**Fruit: 40% Veg: 35%**
4.6	Decrease incidence rate of obesity-associated cancers. (Per 100,000 persons, Data Source: VCR)*	204.8 (2008-2012)	**194.6**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Support Vermont schools in developing and implementing local wellnes policies.
- Support worksites in developing policies and programs to promote healthy behaviors.
- Support healthy community design initiatives, such as increasing opportunities for physical activity and access to healthy foods, to make it easier for people to live healthy lives.
- Promote messages to health care providers and the public emphasizing the link between obesity and cancer.

Goal 5. Prevent HPV infections among young Vermonters.

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
5.1	Increase % of females & males age 13-17 years receiving at least one dose of HPV vaccine. (Data Source: Vermont Immunization Registry)	F: 67% M: 54% (2014)	**F: 70%** **M: 57%**
5.2	Increase % of females & males age 13-17 years completing three-dose HPV vaccine series. (Data Source: Vermont Immunization Registry)	F: 46% M: 30% (2014)	**F: 48%** **M: 32%**
5.3	Increase % of adolescents who have started the HPV series by age 15. (Data Source: Vermont Immunization Registry)	36% (2014)	**38%**
5.4	Decrease incidence rate of HPV-associated cancers. (Per 100,000 persons, Data Source: VCR)*	10.4 (2008-2012)	**9.9**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Educate providers and parents of the importance of HPV vaccination for boys and girls for all the cancers HPV causes.
- Collaborate with internal and external partners to develop effective strategies to promote HPV vaccine as an anti-cancer vaccine.
- Encourage health care providers to utilize client reminder/recall systems.

Goal 6. Reduce exposure to environmental hazards among Vermonters.

6A. Ultraviolet (UV) radiation from the sun and sun lamps

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
6.1	Decrease % of youth in grades 6-12 reporting sunburns in the past 12 months. (Data Source: YRBS)	Grades 6-8: 54% (2015) Grades 9-12: 65% (2015)	**Grades 6-8: 51%** **Grades 9-12: 62%**
6.2	Decrease % of youth in grades 9-12 who have used a tanning booth or sun lamp in the past 12 months. (Data Source: YRBS)	4% (2015)	**3%**
6.3	Decrease incidence rate of invasive melanoma. (Per 100,000 persons, Data Source: VCR)*	29.0 (2008-2012)	**27.6**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Promote awareness of and compliance with Vermont's tanning regulations prohibiting use of tanning beds by Vermonters under age 18.
- Educate the public regarding the dangers of exposure to ultraviolet (UV) light, including indoor tanning.
- Promote evidence-based skin cancer prevention strategies in schools and parks/recreation programs.
- Promote education of health care providers about the importance of sun-safety counseling for children, adolescents, and young adults age 10 to 24 who have fair skin.
- Promote education of health care providers on the burden of skin cancer in Vermont and the evidence and information related to visual skin examination and skin cancer diagnosis and treatment.

Goal 6. Reduce exposure to environmental hazards among Vermonters.

6B. Radon and other environmental hazards

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
6.4	Increase % of households that install a radon mitigation system when they receive a high radon test result. (Data Source: Radon Program)	49% (2015)	**55%**
6.5	Increase % of people served by public water supplies that meet Safe Drinking Water Act standards. (Data Source: Vermont Department of Environmental Conservation)	97% (2014)	**100%**

Strategies

- Use media avenues to educate the public on the importance of testing their homes for radon using long-term radon test kits.
- Work with homebuilders and contractors to promote radon-resistant new construction building methods for new homes.
- Work with partners to support efforts to reduce financial barriers to installing radon mitigation systems in buildings that have elevated radon levels.
- Target radon outreach efforts to current or former smokers.
- Collaborate with internal and external partners to promote testing of private water supplies.

Early Detection
Detect cancer at its earliest stages

Overview

Early detection of cancer in people without symptoms (also called screening) can help doctors find and treat cancer early, leading to better outcomes. Promoting nationally recognized screening tests for all Vermonters is a priority of the *Vermont Cancer Plan*.

Many organizations publish cancer screening guidelines. The *Vermont Cancer Plan* screening objectives focus on the breast, cervical, colorectal and lung cancer screening guidelines that are issued by the U.S. Preventive Services Task Force. The Task Force is an independent panel of national experts that scientifically reviews existing data on screening test effectiveness to develop screening recommendations. An up-to-date summary of the current screening guidelines issued by the Task Force and other guideline setting organizations can be found on the VTAAC website at vtaac.org.

All Vermont adults should discuss cancer prevention, screening, and early detection with their primary care provider. This type of discussion can help individuals better understand their risk for developing cancer, and decide what tests are most appropriate based on their specific family and health history.

Colorectal Cancer

Colorectal cancer is one of the leading causes of cancer death for Vermont men and women. Colorectal cancer is caused by abnormal growths, called polyps, which form inside the colon and rectum and can become cancerous. In many cases, regular screening (through the endoscopic screen-

ing options) can prevent colorectal cancer altogether because polyps can be found and removed before they turn into cancer. Screening is also important because it can find colorectal cancer early, when it is highly curable. Regular screening, beginning at age 50 (for average-risk individuals) is the key to reducing the burden of colorectal cancer. Several screening options are available.

Of the three cancers with proven screening methods for individuals of average risk (cervical, colorectal and breast), colorectal cancer has the lowest rate of screening in Vermont and the highest rate of late-state diagnosis.

Cervical Cancer

Cervical cancer rates have dropped significantly in the U.S. over the past 30 years due to the widespread use of screening.

Cervical cancer can be prevented by receiving regular screening tests that can detect cervical cancer at an early stage when it is easiest to treat. Abnormalities of and changes to the cervix can also be detected and treated by the removal or destruction of abnormal cells before they progress to cancer. Each year, very few Vermont women are diagnosed with cervical cancer. However, of those diagnosed, many are at a later stage when treatment is not as effective. Since few women with cervical cancer have symptoms or signs that indicate a problem, widespread screening for early detection is critical. Asymptomatic women with average risk for cancer should begin regular screening for cervical cancer at age 21.

Cervical cancer occurs primarily among women infected with the human papillomavirus (HPV). In addition to regular screening as indicated above, male and female adolescents should receive a complete HPV immunization cycle to prevent many of the cancers associated with HPV. The objectives and strategies related to HPV immunization can be found in the *Prevention* section of this plan.

Breast Cancer

Breast cancer is the most commonly diagnosed cancer in Vermont women and is the second leading cause of cancer death among women. Mammography is the best available method to detect breast cancer in its earliest, most treatable stage. The United State Preventive Services Task Force guidelines state that average-risk women should begin biannual screening with mammography at age 50. Women younger than 50 should discuss their individual risk and the benefits and harms of screening with their health care provider.

"I went to my yearly mammogram. I was called back and began to worry. There had been a change. Then I had a biopsy that confirmed cancer. I was scared, angry, sad and lucky. The cancer had been Stage 1. I felt isolated but with the services and contacts I made, I found I didn't have to be brave alone."

Helen—Vermont Cancer Survivor

Lung Cancer

Lung cancer is the number one cause of cancer death in Vermont and the U.S. The majority of lung cancers are diagnosed in late stages of the disease when treatment is mostly ineffective. Until recently, there was no evidence-based method for screening and detecting lung cancers at an early stage. In 2013, the United States Preventive Services Task Force released screening guidelines for high risk individuals, based on their smoking history and age (current and former heavy smokers age 55-80). This screening method uses low dose computed tomography to detect abnormalities in the lungs. While lung cancer screening is important, it should not be considered a substitute for quitting smoking. Cessation strategies should continue to be emphasized.

Lung cancer screening is available regionally in Vermont. However, currently there is no way to measure the number of Vermonters being screened, public or provider awareness of screening guidelines, or the statewide capacity of health care systems to screen eligible Vermonters. This plan lays out objectives and strategies to increase the measurement, capacity and use of lung cancer screening in Vermont over the next five years.

Prostate Cancer

Prostate cancer is the most commonly diagnosed cancer and a leading cause of cancer death among Vermont men. Cancer of the prostate is often slow growing. Many men who develop prostate cancer never have symptoms and do not benefit from treatment. The treatment for prostate cancer can often cause moderate to substantial side effects, such as erectile dysfunction, urinary incontinence and bowel dysfunction.

Due to the effects of treatment and gaps in the currently available early detection methods, screening for prostate cancer is not universally endorsed. The screening recommendations set forth by the United State Preventive Services Task Force do not recommend Prostate Specific Antigen (PSA) based screening for men who do not have symptoms. Research is ongoing to identify more effective prostate cancer screening methods. Until such methods are identified, health care providers should carry out prostate cancer risk assessment with adult male patients and have open conversations with patients who have questions about prostate cancer and PSA screening.

> "Early diagnosis is empowering. Advantages include better quality of life, less stress for family and caretakers and more time to treasure the present and prepare for the future. Be your own best advocate, early screening and detection saves lives. I am living proof of this."
>
> Lisa—Vermont Cancer Survivor

Goal 7. Increase early detection of colorectal cancer among Vermonters.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
7.1	Increase % of adults age 50-75 who received recommended colorectal cancer screening. (Data Source: BRFSS)*	71% (2014)	**80%**
	a. Increase % of adults age 50-75 below 250% of FPL who received recommended colorectal cancer screening. (Data Source: BRFSS)*	61% (2014)	**80%**
	b. Increase % of adults age 50-64 who received recommended colorectal cancer screening. (Data Source: BRFSS)*	67% (2014)	**80%**
7.2	Decrease rate of colorectal cancers diagnosed at an advanced stage among adults age 50+. (Per 100,000 persons, Data Source: VCR)*	62.4 (2008-2012)	**59.3**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Promote nationally recognized colorectal cancer screening guidelines to the health care provider community and to the public, highlighting populations that may be at elevated risk for colorectal cancer.
- Encourage health care providers to use evidence-based practices to increase cancer screening rates such as provider and client reminder and recall systems.
- Conduct provider education and training to increase awareness of the importance of risk assessment in discussing colorectal cancer screening with patients.
- Conduct provider education and training regarding the importance of offering all nationally recognized colorectal cancer screening test options, and matching patients with the test they are most likely to complete.
- Educate health care providers and the public about low and no-cost cancer screening resources for low-income Vermonters.

Goal 8. Increase early detection of cervical cancer among Vermont women.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
8.1	Increase % of women age 21-65 who received a Pap test in the past 3 years. (Data Source: BRFSS)*	86% (2014)	**100%**
	a. Increase % of women age 21-65 below 250% of FPL who received a Pap test in the past 3 years. (Data Source: BRFSS)*	82% (2014)	**100%**
8.2	Decrease rate of cervical cancer diagnosed at an advanced stage among women age 20+. (Per 100,000 women, Data Source: VCR)*	2.0 (2008-2012)	**1.9**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Promote nationally recognized cervical cancer screening guidelines to health care providers and to the public.
- Encourage health care providers to use evidence-based practices to increase cancer screening rates such as client reminder and recall systems.
- Conduct provider and public education and training to increase awareness of the need for cervical cancer screening.
- Educate health care providers and the public about low and no-cost cancer screening resources for low-income Vermonters.

Goal 9. Increase early detection of breast cancer among Vermont women.

	Objectives	Measures: BASELINE (YEAR)	Measures: **TARGET (2020)**
9.1	Increase % of women age 50-74 who received a mammogram in the past two years. (Data Source: BRFSS)*	79% (2014)	**95%**
	a. Increase % of women age 50-74 below 250% of FPL who received a mammogram in the past two years. (Data Source: BRFSS)*	70% (2014)	**95%**
	b. Increase the number of women age 50-74 who received a mammogram in the past two years as documented in the Vermont Mammography Registry. (Data Source: Vermont Mammography Registry)[a]	60,531 (2012-2013)	**63,558**
9.2	Decrease rate of breast cancer diagnosed at an advanced stage among women age 50+. (Per 100,000 women, Data Source: VCR)*	96.5 (2008-2012)	**91.7**
9.3	Decrease rate of breast cancer diagnosed at an advanced stage among women age 40-49. (Per 100,000 women, Data Source: VCR)*	64.7 (2008-2012)	**61.5**
9.4	Developmental: Increase % of women age 40-49 who talk to a provider about breast cancer risk & screening. (Data Source: None Identified)	N/A	**N/A**

* Measure is age adjusted to the 2000 U.S. standard population.

a Excludes Vermont resident women screened at facilities outside of Vermont, and women of unknown or out of state residency screened at Vermont facilities

Strategies

- Promote nationally recognized breast cancer screening guidelines to the health care provider community and to the public, highlighting populations that may be at elevated risk for breast cancer.
- Encourage health care providers to use evidence-based practices to increase cancer screening rates such as provider and client reminder and recall systems.
- Educate health care providers about the importance of risk assessment in discussing breast cancer screening with patients, particularly with women age 40-49.
- Educate health care providers about the importance of discussing patient preference and screening benefits versus harms, particularly with women age 40-49.
- Educate health care providers and the public about low and no-cost cancer screening resources for low-income Vermonters.

Goal 10. Increase early detection of lung cancer among Vermonters.

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
10.1	Decrease rate of lung cancer diagnosed at an advanced stage among adults 55+. (Per 100,000 persons, Data Source: VCR)*	210.0 (2008-2012)	**199.5**
10.2	Decrease % of lung cancers diagnosed at an advanced stage among adults 55+. (Data Source: VCR)	80% (2008-2012)	**76%**
10.2	Increase % of adults age 55-80 who are current or former smokers (quit within 15 years) with no history of cancer who had discussed lung cancer screening with a health care provider. (Data Source: Adult Tobacco Survey)	N/A	**N/A**

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Promote nationally recognized lung cancer screening guidelines to health care providers and to the public.
- Conduct provider and public education and training to increase awareness of the need for lung cancer screening and the use of risk assessment to determine who should be screened.
- Develop a system for measuring the number of Vermonters receiving lung cancer screening.
- Increase the capacity of hospitals to screen adults for lung cancer.

Goal 11. Improve prostate cancer risk assessment among Vermont men.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
11.1	Developmental: Increase % of primary care providers who conduct prostate cancer risk assessment with their adult male patients age 50-70. (Data Source: None Identified)	N/A	**N/A**

Strategies

- Promote nationally recognized prostate cancer screening guidelines to health care providers and to the public.
- Conduct provider education and training to increase knowledge of patient prostate cancer risk assessment.
- Continue to monitor medical science and prostate cancer screening recommendations.

Cancer Directed Therapy & Supportive Care
Treat cancer with appropriate, quality care

Overview

Once cancer is diagnosed, prompt and thorough medical treatment and complementary care are essential to prolonging a patient's life, decreasing side effects and improving quality of life. The *Vermont Cancer Plan* promotes access to individualized, high-quality comprehensive care for all Vermonters diagnosed with cancer.

Cancer-Directed Therapy

Optimal cancer treatment requires accurate information about the diagnosis and spread of the cancer, treatment planning, adherence to nationally accepted treatment standards and participation in clinical trial research if available and appropriate. Effective treatment must also consider the health and individual needs of the patient.

Clinical trials are the critical final step in determining the effectiveness of new cancer treatments. Some of these new treatments are safer and more effective and will eventually become the new standard of care. Although clinical trials are available in Vermont, many eligible Vermonters are not participating in them.

Although excellent cancer treatment may be available at all hospitals, Commission on Cancer accredited cancer programs ensure that treatment is state-of-the-art and meets national standards. As of January 2016, six of Vermont's medical facilities were Commission on Cancer accredited: Gifford Hospital, Northwestern Medical

Center, Rutland Regional Medical Center, Southwestern Vermont Medical Center, University of Vermont Medical Center, and the University of Vermont Health Network—Central Vermont Medical Center.

Palliative Care

Palliative care provides quality compassionate care to help relieve cancer symptoms, pain, and stress through expert medical care, pain management and emotional and spiritual support. It is an essential component of cancer care and should be available through all stages before, during and after treatment.

Palliative care services are available at all Commission on Cancer accredited cancer programs in Vermont, either on site or by referral. Efforts are underway to further improve the quality and access to palliative care and pain management services throughout Vermont.

Complementary & Integrative Medicine

Complementary and integrative medicine is a total approach to medical care that combines the use of standard medicine with non-traditional (complementary) practices. The goal of this care is to provide care that is patient-centered and healing-oriented to improve a patient's physical and emotional well-being. Examples of complementary therapies include acupuncture and massage.

Using complementary practices can optimize health, quality of life and clinical outcomes for cancer patients. However, there may be risks in using complementary care and providers should assist cancer patients in making informed decisions. Although broad access and insurance coverage for complementary strategies has not been common in the past, many Vermont hospitals are offering complementary approaches and insurance coverage is expanding.

"I started with the Physical Therapy Department at the hospital before I even started chemotherapy and radiation. It was the best pre-treatment I could have done for myself! I remember being told, 'You're not going to feel like walking much less getting out of bed and getting dressed but make yourself do it, every day.' He was so right!"

Nancy—Vermont Cancer Survivor

"I was grateful for the palliative care team. They helped my wife in ways that we never knew were available to us."

Peter—Vermont Cancer Caregiver

Goal 12. Improve access to optimal cancer directed therapy among Vermonters.

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
12.1	Increase % of prospective cases presented at a multi-disciplinary cancer conference at Commission on Cancer accredited cancer programs. (Data Source: Commission on Cancer accredited cancer programs)	96% (2014)	**100%**
12.2	Increase % of annual analytical cases accrued to clinical trials at Commission on Cancer accredited cancer programs. (Data Source: Commission on Cancer accredited cancer programs)	21% (2014)	**22%**
12.3	Increase % of Commission on Cancer Quality of Care Measures with national benchmarks that are met or exceeded by Commission on Cancer accredited cancer programs. (Data Source: National Cancer Data Base)	86% (2013)	**90%**

Strategies

- Ensure vulnerable populations have access to quality care for cancer treatment.
- Promote available clinical trials and multidisciplinary conferences at Commission on Cancer accredited cancer programs.
- Provide regional cancer burden data to Commission on Cancer accredited cancer committees to assist hospitals in setting treatment goals.
- Support American College of Surgeon State Cancer Liaison in promoting regular communication and in-person meetings between staff at Commission on Cancer accredited cancer programs.
- Monitor policy changes that may affect clinical trial participation and support efforts to educate and advocate for change.
- Support VTAAC and Department of Health participation in cancer committee meetings and activities.

Goal 13. Improve access to optimal palliative care among Vermont cancer patients and survivors.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
13.1	Increase number of palliative care health care providers (physicians, APNs, and RNs) practicing in Vermont. (Data Sources: American Board of Medical Specialties and Hospice & Palliative Credentialing Center)	Physicians: 23 (2014) Nurses: 57 (2015)	**Physicians: 25** **Nurses: 60**

Strategies

- Increase use of palliative care by all patients by raising patient and health care provider awareness of its broad application.
- Promote the funding of Vermont educational programs on palliative care.
- Support Commission on Cancer accredited cancer programs in working to implement palliative care standards.

Goal 14. Improve access to complementary and integrative medicine among Vermont cancer patients and survivors.

Objectives		Measures	
		BASELINE (YEAR)	**TARGET (2020)**
14.1	Increase % of VT Commission on Cancer accredited cancer programs with associated complementary and integrative medicine practitioners using evidence-based methods such as acupuncture and/or massage therapy. (Data Source: Commission on Cancer accredited cancer programs)	83% (2015)	**100%**

Strategies

- Work with VTAAC partners to promote and develop educational programs for patients and health care providers on the range of complementary and integrative medicine options available and their associated risks and benefits.
- Support VTAAC partners' efforts to monitor use and impacts of complementary and integrative medicine among cancer patients and survivors.
- Offer presentations on complementary and integrative medicine (risks and benefits) at VTAAC supported meetings.
- Work with partners to advocate for state policy and legislative solutions to support mandated insurance coverage for complementary and integrative medicine services.

Survivorship & End-of-Life Care

Assure the highest quality of life possible for cancer survivors

Overview

A cancer survivor is anyone who has been diagnosed with cancer, from the time of diagnosis through the rest of his or her life. With Vermont's aging population, innovations in early detection, and improvements in diagnosis and treatment, there are more cancer survivors than ever living in the state.

A diagnosis of cancer can be a tremendous burden. Cancer is not always a disabling or fatal disease, but it can have long-term effects on an individual's life. Treatments that prolong life, even curing certain cancers, can also cause serious and sometimes long-term health problems. Furthermore, when the disease is terminal, compassionate and individualized end-of-life care is essential.

Survivorship Care Plans

After completing active cancer treatment, cancer survivors need coordinated follow-up care to address late side-effects, as well as to promote healthy behaviors and early detection of recurrent or second cancers. Developing a survivorship care plan that includes a record of the patient's cancer treatment and follow-up care recommendations is critical. A survivorship care plan should be used by

cancer survivors and their primary care provider as a guide to ensure effective and continuous care takes place. By 2019, all patients seen at American College of Surgeons Commission on Cancer accredited cancer centers should be receiving survivorship care plans.

Optimal Health for Survivors

Living with a cancer diagnosis can significantly affect a person's emotional well-being. Cancer survivors may fear cancer recurrence, as well as more generalized worry, fear of the future, fear of death, trouble sleeping, fatigue and trouble concentrating. Emotional support is vital in addressing these issues and restoring a cancer survivor's quality of life.

In addition to emotional concerns, cancer survivors also face unique challenges to their physical health and maintaining a healthy lifestyle. Survivors are at greater risk for recurrence and for developing secondary cancers due to the effects of treatment, unhealthy lifestyle behaviors, underlying genetics or risk factors that contributed to the first cancer.

Survivors can maintain their health and improve survival and quality of life after a cancer diagnosis by quitting tobacco, being active, maintaining a healthy weight, eating a healthy diet and accessing regular follow-up care.

End-of-Life Care

Hospice care is crucial when a cancer diagnosis is terminal. Hospice services include management of pain and other symptoms, as well as emotional and spiritual support for the patient and their loved ones. These services are available in every region of Vermont.

When a patient's preferences for treatment in the final stages of life are clear, the patient and their family members are able to devote their energy to care and compassion. Conversations regarding treatment and end-of-life wishes should be held as early as possible. An advance directive ensures that end-of-life and other critical health care decisions are clear and will be followed. All Vermonters should complete and register advance directives through the Vermont Advance Directive Registry.

"Along with chemotherapy and radiation, I am convinced that my change to a plant-based diet has allowed me to survive 16 years beyond the diagnosis of breast cancer with 22 positive lymph nodes."

Pat—Vermont Cancer Survivor

"I wish I had known about survivorship groups in Vermont before my parents died with cancer…I could have used the reference materials and support."

Lorri—Vermont Cancer Caregiver

Goal 15. Implement survivorship care plans among Vermont health care providers and cancer survivors.

Objectives	Measures	
	BASELINE (YEAR)	**TARGET (2020)**
15.1 Increase the % of cancer patients treated by Commission on Cancer accredited cancer programs who have received survivorship care plans. (Data Source: Commission on Cancer accredited cancer programs)	2% (2014)	**100%**

Strategies

- Support Commission on Cancer accredited cancer programs in developing systems to implement survivorship care plans.
- Promote integration of comprehensive care into survivorship care plans including treatment and management of side effects from cancer directed therapy in addition to age appropriate, individualized preventive care.
- Educate primary care providers about the importance and use of survivorship care plans with their patients.
- Educate cancer survivors about how to use their survivorship care plans.
- Identify or develop a method to measure use of survivorship care plans.

Goal 16. Promote optimal health among Vermont cancer survivors.

16A. Emotional health

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
16.1	Decrease % of adult cancer survivors reporting poor mental health on most days. (Data Source: BRFSS)[a]	11% (2014)	**10%**
16.2	Increase % of adult cancer survivors who report always or usually receiving social and emotional support when needed. (Data Source: BRFSS)	81% (2014)	**90%**

a Fourteen or more of the last 30 days.

Strategies

- Assess gaps in statewide survivorship resources.
- Promote statewide dissemination of survivor resources and services.
- Support partners in their efforts to determine effective strategies in improving emotional wellbeing among cancer survivors.
- Promote statewide use of distress screening to address cancer survivors' emotional wellbeing and the associated use of psychosocial services.
- Promote programs offering psychosocial support for cancer patients.

Goal 16. Promote optimal health among Vermont cancer survivors.

16B. Physical health

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
16.3	Increase % of adult cancer survivors who report that their general health is good to excellent. (Data Source: BRFSS)	72% (2014)	**85%**
	a. Decrease % of adult cancer survivors who smoke cigarettes. (Data Source: BRFSS) [a] *	26% (2014)	**12%**
	b. Increase % of adult cancer survivors who use the dental care system yearly. (Data Source: BRFSS) [b] *	70% (2014)	**85%**
	c. Decrease % of cancer survivors (age 20+) who are obese. (Data Source: BRFSS) [c] *	21% (2014)	**20%**

a Repeat of prevention objective 2.1b.

b Repeat of prevention objective 3.1a.

c Repeat of prevention objective 4.1b.

* Measure is age adjusted to the 2000 U.S. standard population.

Strategies

- Assess gaps in statewide survivorship resources.
- Promote statewide dissemination of survivor resources and services.
- Promote programs offering physical rehabilitation for cancer patients.
- Educate and train (1) oncology and other health care providers; and (2) survivor groups and VTAAC Quality of Life Workgroup members on the importance of, and strategies for, improving the following physical health factors among cancer patients and survivors:
  - Tobacco cessation
  - Oral health needs
  - Nutrition, physical activity and decreased weight

Goal 17. Increase use of hospice care among Vermont cancer survivors.

	Objectives	Measures: BASELINE (YEAR)	Measures: **TARGET (2020)**
17.1	Increase % of people who died from cancer[a] who received hospice care within the 30 days before death. (Data Source: Vermont Vital Statistics)	73%[b] (2013)	**77%**
17.2	Increase average number of hospice days during the last month of life for Medicare beneficiaries[c] age 66-99 with a poor prognosis cancer diagnosis.[d] (Data Source: Dartmouth Atlas of Health Care)	8.3 (2012)	**8.7**

a Where the manner of death was natural

b Preliminary

c Excludes beneficiaries without continuous Part A and Part B coverage in the last six months of life or who were enrolled in Medicare health maintenance organizations (i.e., Medicare Advantage).

d Includes beneficiaries with a diagnosis of leukemia, lymphoma, or a malignancy of one of the following organs: esophagus, stomach, liver, pancreas, lung, pleura, ovary and uterine adnexa, and brain] on at least one hospital claim or at least two clinician visits in the last six months of life.

Strategies

- Support opportunities for primary care providers to receive continuing medical education about hospice care.
- Support opportunities for nurses (APN, RNs, LPNs, etc.) to become certified by the End of Life Nursing Consortium.
- Support efforts to raise awareness about hospice care, such as programs like "Start the Conversation."

Goal 18. Improve planning for end-of-life care among Vermont cancer survivors and other Vermonters.

	Objectives	Measures BASELINE (YEAR)	Measures **TARGET (2020)**
18.1	Increase number of people enrolled each year in the Vermont Advance Directives Registry. (Data Source: Vermont Advanced Directives Registry)	5,618 (2014)	**5,899**

Strategies

- Increase public and health care provider awareness of end-of-life options.
- Promote the Advance Directives Registry with CoC-accredited cancer programs.
- Work with partners to determine effective strategies to increase the number of cancer survivors with end-of-life decisions documented in an advance directive for health care.

Evaluation of the Cancer Plan

> Evaluation is a fundamental component of the Vermont Cancer Plan. Reporting progress, successes, outcomes and lessons learned will help public health professionals, medical practitioners, community partners and the public to understand what is working to improve cancer outcomes, and inform the vision, goals and objectives of future efforts.

A five year evaluation plan was developed to measure and improve the effectiveness of the Vermont Comprehensive Cancer Control program, VTAAC and the *Vermont Cancer Plan*. This document provides direction for evaluation activities that will take place between 2016 and 2020.

The evaluation plan follows the parameters recommended by the Centers for Disease Control and Prevention's Division of Cancer Prevention and Control. These criteria are to focus on the three components of the Comprehensive Cancer Control program: the Plan, Partnership and Program:

Plan

The quality and implementation of the *Vermont Cancer Plan*.

Partnership

The quality, contributions and impacts of the statewide coalition VTAAC.

Program

The extent to which interventions outlined by the Department of Health Comprehensive Cancer Control Program are executed and yield intended results.

Evaluation questions and findings will demonstrate the degree of program impact, how specific strategies have contributed to overall goals, and how accountability and progress have been supported by the Vermont Comprehensive Cancer Control Program and VTAAC.

The VTAAC Evaluation Committee facilitated the development of the evaluation plan, and will play a continued role in overseeing implementation of the plan and dissemination of results.

The evaluation plan can be found on the Department of Health website: healthvermont.gov/cancer.

Cancer Plan Development

Overview

The *Vermont Cancer Plan* was developed in a 12-month timeframe between 2015 and early 2016. The Vermont Department of Health, Vermonters Taking Action Against Cancer (VTAAC) and other key stakeholders participated in the process.

The plan was developed through review of cancer burden progress between 2010 and 2015, and prioritizing evidence-based goals, objectives, and strategies that would have the most impact. Its overall structure and focus were carefully chosen to align with previous evaluation findings related to the 2015 Vermont Cancer Plan.

Possible objectives for the plan were identified in the 2015 Vermont Cancer Plan and Healthy Vermonters 2020 (State Health Assessment plan) as well as through input from VTAAC members and other Health Department programs, and scans of other state cancer plans. Objectives and strategies were then selected based on guidance from VTAAC workgroups, the VTAAC Steering Committee, the Plan Development Committee and Health Department chronic disease programs.

Where applicable, the final objectives included in the plan align with Healthy Vermonters 2020 indicators, as well as the priorities of the of Health Department's Tobacco Control Program, the Vermont Oral Health Plan, the Vermont Physical Activity and Nutrition Program, and the Vermont Environmental Public Health Tracking Program. The vast majority of objectives in the plan are quantifiable; however three developmental objectives are included to address important but currently unmeasurable cancer issues.

Acknowledgements

The VTAAC Steering Committee and over 100 VTAAC members actively participated in the creation of this plan.
Without the dedication of all of these individuals and their respective organizations, this plan would not have been possible.

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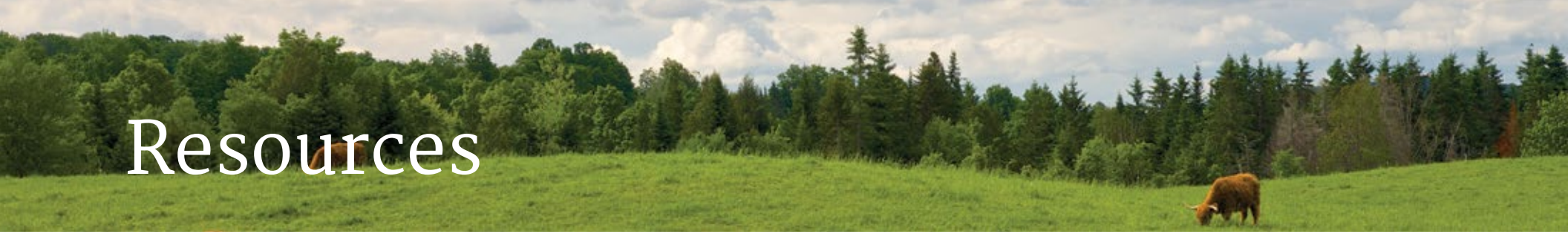

Resources

Join Vermonters Taking Action Against Cancer (VTAAC)

VTAAC's mission is to provide a forum for collaboration, engagement and sharing of resources for individuals and organizations concerned about cancer in Vermont.

VTAAC is a growing coalition of organizations and individuals that speaks with one voice about reducing cancer risks, increasing early detection of cancer, increasing access to quality cancer treatment, and improving the quality of life for cancer survivors. This *Vermont Cancer Plan* guides the activities of the coalition, which are focused on reaching VTAAC's ultimate goal: reducing the burden of cancer in Vermont.

VTAAC members gain a deeper understanding of what steps can be taken to meet these goals and how members can use their voices to reduce the burden of cancer for Vermonters.

For more information about becoming a member of VTAAC, please visit vtaac.org.

Additional Information on Cancer

To simplify your search for cancer information and resources, please visit the websites for the Vermont Department of Health Cancer Prevention and Control programs and for Vermonters Taking Action Against Cancer (VTAAC). These websites contain information about the *Vermont Cancer Plan*, links to cancer topics such as prevention, early detection, treatment, survivorship and end-of-life care, information about Vermont's cancer burden and links to other current, scientifically accurate information.

Vermont Department of Health Cancer Prevention and Control programs
http://healthvermont.gov/cancer

Vermonters Taking Action Against Cancer
http://vtaac.org/

Acronyms

ACS	American Cancer Society
ATS	Adult Tobacco Survey
BRFSS	Behavioral Risk Factor Surveillance System
CCC	Comprehensive Cancer Control
CDC	Centers for Disease Control and Prevention
FPL	Federal Poverty Level
HPV	Human Papillomavirus
IMR	Immunization Registry
N/A	Data Not Currently Available
NCDB	National Cancer Data Base
PSA	Prostate Specific Antigen
SEER	Surveillance Epidemiology and End Results Program
UV	Ultraviolet
VCR	Vermont Cancer Registry
VMR	Vermont Mammography Registry
VT	Vermont
VTAAC	Vermonters Taking Action Against Cancer
YRBS	Youth Risk Behavior Survey