
2018 - 2022

VIRGINIA CANCER PLAN

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To the citizens of Virginia:

The impact of cancer on the lives of all Virginians is significant. Whether as a cancer survivor, a caregiver, or as a friend, cancer touches all of us. During the past 12 months, the Cancer Action Coalition of Virginia (CACV), specialists with knowledge across the cancer continuum, and citizens of the Commonwealth have worked to create the fourth edition of the Virginia Cancer Plan.

CACV, established in 1998, is a 501(c)(3) organization whose mission and purpose is to facilitate collaborative partnerships among public health agencies, private organizations, cancer centers, other interested agencies and organizations, and individuals and families to carry out recommended cancer control activities. CACV focuses on the prevention, early detection, treatment, advocacy, research, and evaluation of cancer in the Commonwealth of Virginia. It fosters communication, collaboration, education and community awareness to meet the multifaceted needs of persons living with cancer.

CACV proudly supports the 2018–2022 Virginia Cancer Plan. This working document is a framework that presents priority objectives, goals and strategies to reduce cancer risk, eliminate preventable cancers and minimize cancer deaths and disabilities. It provides guidance for designing, implementing, monitoring, and evaluating cancer-related actions and addressing a myriad of issues. The plan provides direction to better understand and reduce cancer disparities through research, education and clinical practice. Members of the public, people with cancer and their families, healthcare providers, policymakers, and healthcare experts all will benefit from the guidance the plan offers.

The CACV Board expresses its appreciation to the State Cancer Plan Committee and the coalition membership for their commitment to develop and implement the 2018–2022 Virginia Cancer Plan. This plan is dedicated to those who fight the battle against cancer: patients, survivors, and their families. The Cancer Action Coalition of Virginia invites you to join us in this major effort to eliminate cancer and make a difference in the health and quality of life for all Virginians.

A handwritten signature in black ink, reading "Debbie L. Cadet, PhD, MSW". The signature is written in a cursive, flowing style.

Debbie L. Cadet, PhD, MSW
2018 CACV Chairman



COMMONWEALTH of VIRGINIA

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January 3, 2018

My fellow Virginians:

I am pleased to support the 2018 – 2022 Virginia Cancer Plan. The Cancer Action Coalition of Virginia in partnership with the Virginia Department of Health's Comprehensive Cancer Control Program has developed this plan to address the burden of cancer in the Commonwealth of Virginia.

Cancer is the leading cause of death among Virginians distinguishing it as a major public health concern. It was estimated that 42,770 Virginians would be newly diagnosed with cancer during 2017 and that 14,870 deaths would result from cancer during the same year, affecting Virginians, their families, friends and communities.

Experts in prevention, screening, early detection, treatment of adult, pediatric and young adult cancers as well as survivorship and palliative care have contributed to and reviewed this plan. The plan addresses all stages along the cancer continuum identifying priority goals, objectives and strategies to guide its implementation. It will take collaborative efforts within clinical and community sectors working across professional disciplines to promote the plan, implement its strategies and evaluate its successes in the fight against cancer.

All Virginians play an important role in addressing the impact of cancer in our communities. Please join me in supporting the implementation of the Virginia Cancer Plan by focusing your efforts toward strengthening partnerships and supporting actions to reduce the burden of cancer. Together, we can help Virginia become the healthiest state in the nation.

Sincerely,

Marissa J. Levine, MD MPH
State Health Commissioner



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Overview



Since 1998, the Centers for Disease Control and Prevention (CDC) National Comprehensive Cancer Control Program (NCCCP) has made great strides to reduce the burden of cancer, determine cancer control priorities, address disparities, and develop and implement cancer plans in the United States. Nationally, cancer coalitions that partner with NCCCP form groups of dedicated individuals, community members, professionals, and cancer survivors who share their expertise, resources, and ideas to address cancer control priorities and cancer disparities that are too broad for one entity to reach.

The Cancer Action Coalition of Virginia (CACV) formed in 1998 as the Cancer Plan Advisory Committee. The purpose of CACV is to facilitate statewide collaborations of organizations and individuals to focus on activities related to the objectives contained in the state cancer plan. A subgroup of CACV, the State Plan Committee met from March-October 2017, through a process facilitated by the Virginia Tech Center for Public Health Practice and Research, to develop the comprehensive goals, objectives and strategies included in this plan. The plan also includes input from other cancer specialists throughout the Commonwealth of Virginia.

Call to Action: Why A Plan?



The 2018-2022 Virginia Cancer Plan provides a roadmap for the next five years to help Virginia residents address the burden of cancer. The plan provides data, guidance, information, and links to resources for all Virginians. The goals of the plan can be addressed throughout the Commonwealth of Virginia and require the engagement and collaboration of individuals and organizations involved in cancer prevention, detection, treatment, and post-treatment care for Virginia residents.

The plan is based on an evaluation of the most important cancer concerns for Virginia and describes the cancer burden in Virginia including the disparate impact cancer has on Virginia's low income, uninsured, and minority populations. This plan includes key goals, objectives, and strategies in each of the following areas:

Prevention: encouraging Virginians to adopt healthy behaviors and avoid unhealthy environments.

Early Detection: promoting the benefits of screening tests to ensure early diagnosis.

Diagnosis and Cancer Directed Therapy: reducing the barriers to care, promoting evidence-based practices and encouraging participation in clinical trials.

Survivorship and Palliative Care: ensuring resources to optimize quality of life for cancer survivors and their families.

Pediatric, Adolescent and Young Adult (AYA) Cancers: improving access to care for pediatric and AYA patients, improving long-term follow-up care, improving support systems, and increasing awareness of palliative strategies for pediatric and AYA patients.

Goals, Objectives and Strategies

2018-2022 Virginia Cancer Plan

Goals: The overarching change we want to see in Virginia.

Objectives: The measurable accomplishments necessary to meet the goal.

Strategies: Specific actions that can be taken to help achieve the objective; strategies are based on research and best practices when possible.

At the national level, Congress passed the 21st Century Cures Act in December 2016, which authorizes funding for the Cancer Moonshot through 2023. The Cancer Moonshot, an initiative from the National Institutes of Health, aims to increase access to therapies for more patients, while also improving prevention and early detection capacities.¹³ Implementation teams are considering ways to fund new programs and expand established programs to advance the goals of the Cancer Moonshot. The goals, objectives and strategies in the Virginia Cancer Plan are consistent with the recommendations from the Cancer Moonshot Blue Ribbon Panel, a panel of scientific experts.¹⁴

The Virginia Cancer Plan incorporates objectives and strategies from plans that statewide partners have developed to address cancer related issues such as healthy eating, active living, and environmental risk reduction as well as common risk factors for cancer such as tobacco use and obesity. Two such plans that informed this Virginia Cancer Plan are [Virginia's Plan for Well-Being](#) and the [Strategic Plan for a Comprehensive Tobacco Control Program in Virginia](#). All Virginians are encouraged to consult these plans and collaborate on strategies.

This plan is for all Virginians: residents, patients, survivors, caregivers, public health agencies, community organizations, health care systems, health insurers, educators, researchers, employers and professional organizations. Everyone can use it to continue battling cancer in Virginia. Each objective in the plan includes a list of actionable strategies designed specifically for Virginia best tailored to fit individual and organizational goals.

What Virginians Can Do

Everyone in Virginia has a role to play in preventing and controlling cancer, and in supporting cancer survivors. Together we can make a difference.

Any Virginian Can...

- Maintain a healthy weight by eating well and exercising.
- Get screened for cancer according to national guidelines.
- Support smokefree workplaces, schools, parks and quit smoking.
- Limit alcohol consumption.
- Avoid ultraviolet (UV) radiation and use sun protection strategies.
- Utilize cancer prevention vaccines.
- Ensure your home has been tested for radon.
- Participate in research studies and volunteer with those whose lives are impacted by cancer.

Local public health agencies and community organizations can...

- Collaborate to remove barriers to cancer prevention, screening, treatment, and support.
- Provide or host cancer survivor support groups.
- Assist community members with signing up for insurance.
- Provide cancer information and resources that resonate with those you serve.
- Ensure access to education about the dangers of radon and access to testing kits.

Employers and professional organizations can...

- Educate the public, employees, and policymakers about best practices for cancer screening and treatment.
- Support cancer survivors so they can continue to be successful employees.
- Offer employee benefits that encourage wellness.
- Provide time off for recommended cancer screening and immunizations.

What Virginians Can Do

Health insurers and policymakers can...

- Support access to and coverage of smoking cessation classes, nutrition programs, mental health providers, and cancer treatment drugs.
- Ensure no cost sharing for all recommended cancer screenings and immunizations.
- Streamline access and reduce out-of-pocket costs to participate in cancer research and clinical trials.
- Support policies that make it easier for Virginians to live healthy, tobacco-free lives.
- Develop and offer palliative care services to patients and families.
- Offer training so providers are knowledgeable about palliative care and hospice and can engage in meaningful conversations regarding goals of care.

Providers and healthcare systems can...

- Offer patient navigation for cancer screening, treatment, and survivorship.
- Refer to or integrate mental health services for cancer survivors.
- Use electronic medical records and reminders to keep individuals up-to-date on cancer screenings and vaccinations.
- Implement brief interventions, such as motivational interviewing, to improve individual health behaviors such as smoking, alcohol use, poor diet and physical activity.
- Keep patients and survivors aware and up-to-date on family cancer history.
- Connect patients and survivors to cancer research.
- Submit cancer cases to the cancer registry.
- Ensure palliative care and hospice services are fully covered services.
- Explore alternative payment models to support community-based palliative care services.
- Support initiatives and payment models that encourage providers to help patients complete advance directives.

Burden of Cancer in Virginia

Cancer Definition

Cancer develops when abnormal cells divide and spread inside the body. These cells may form solid masses called tumors, which when malignant are diagnosed as cancer. Malignant tumors invade nearby tissues and may travel to other parts of the body, spreading the cancer. There are over 100 different types of cancer, with varying prognoses depending on type.¹⁵ Cancer affects the physical, economic and social well-being of individuals, families and caregivers in Virginia.

Incidence

In 2014, there were 38,808 cases of cancer in Virginia, a rate of 416.5 cases per 100,000 people.¹⁶ In 2014, the most common cancers in Virginia were breast, prostate, lung, and colorectal (Figure 1).¹⁶

Cancer incidence is fairly evenly spread throughout Virginia, with some areas in the Eastern and Western parts of the state having higher rates (Figure 2). Overall, the incidence of cancers in Virginia has been decreasing since 2005, with the exception of breast cancer, which steadily increased (Figure 4). Males in Virginia were more likely to get cancer than females (444.4 versus 401.1 cases per 100,000, respectively).¹⁶

The most common types were prostate cancer in males and breast cancer in females (Figure 6).¹⁶ Lung cancer was the second most common type of cancer for both males and females

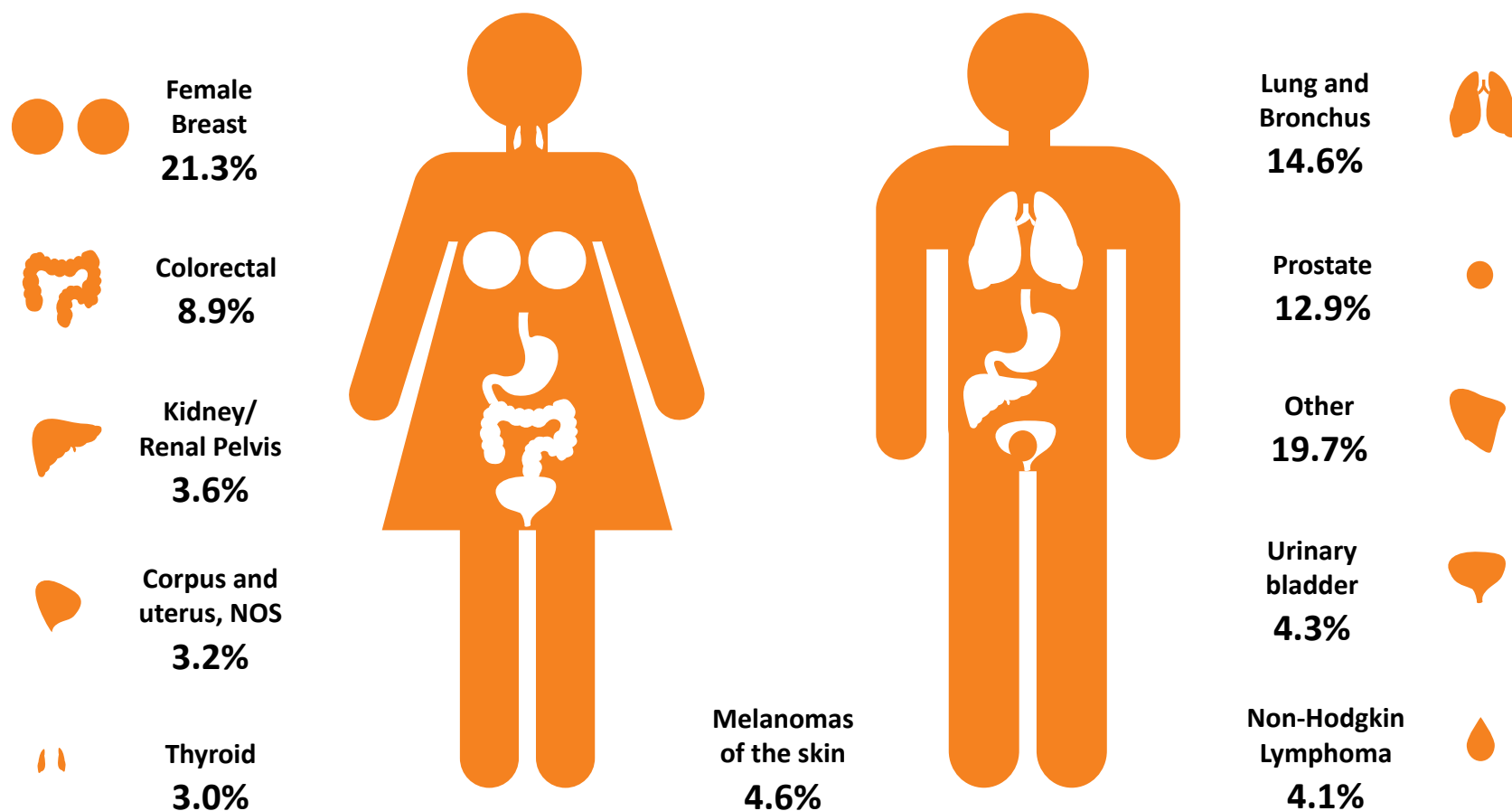
(Figure 6). When examining cancer incidence by race, black males were more likely than white males, white females, and black females to be diagnosed with any type of cancer.¹⁶ Black males' incidence rate for prostate cancer is almost twice as high as for white males.¹⁶ When examining the rate of cancer by age, in 2010-2014, Virginians aged 65+ were more likely than younger people to develop any type of cancer, at a rate of 1,860.5 cases per 100,000 people.¹⁷

Mortality

Cancer was the second leading cause of death among adults in the US in 2014, but first in Virginia, with about 14,750 Virginians dying from cancer. The Virginia cancer mortality rate in 2014 was 161.8 deaths per 100,000 people, slightly higher than the United States rate.¹⁶ The mortality rate for cancer has been steadily decreasing since 2005 (Figure 5). Males in Virginia died from cancer more often than females (194.5 versus 138.9 deaths per 100,000, respectively), and the cancers with the highest mortality rates were lung, breast, prostate, and colorectal (Figure 7).¹⁶ With the exception of lung cancer in females, the mortality rate was higher for black men and women for all types of cancer compared to white or Hispanic men and women in Virginia. Mortality rates in Virginia are higher in the far western and southeast regions, which are areas of the state with more rural, underserved populations (Figure 3).

Distribution of Cancer Cases (N=182,349) by Anatomic Site

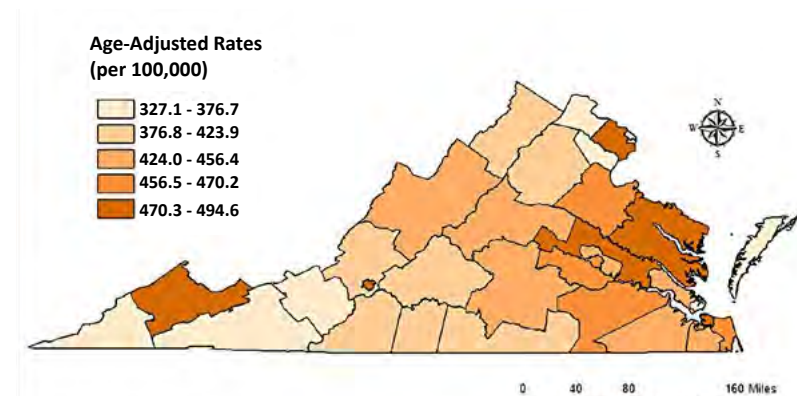
Virginia 2010-2014



"Other" includes pancreas (2.9%), oral cavity and pharynx (2.7%), leukemias (2.6%), liver (1.7%), stomach (1.5%), brain/ nervous (1.5%), myeloma (1.5%), ovary (1.4%), esophagus (1.1%), larynx (0.8%), cervix (0.7%), Hodgkin lymphoma (0.6%), testis (0.5%), mesothelioma (0.2%), and Kaposi sarcoma (0.1%) cancers.

Figure 1

All Sites Cancer Incidence Rates by Health District, 2010-2014



Virginia Cancer Registry Based on combined 2010-2014 data. These data were collected by cancer registries participating in the National Program of Cancer Registries. Incidence rates are age-adjusted to the 2000 U.S. standard population.

Figure 2

Age-Adjusted Incidence by Selected Cancer Site, Virginia 2005-2014

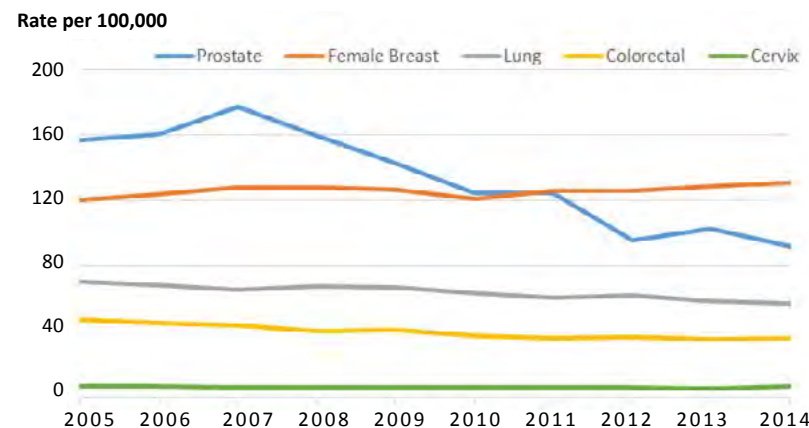
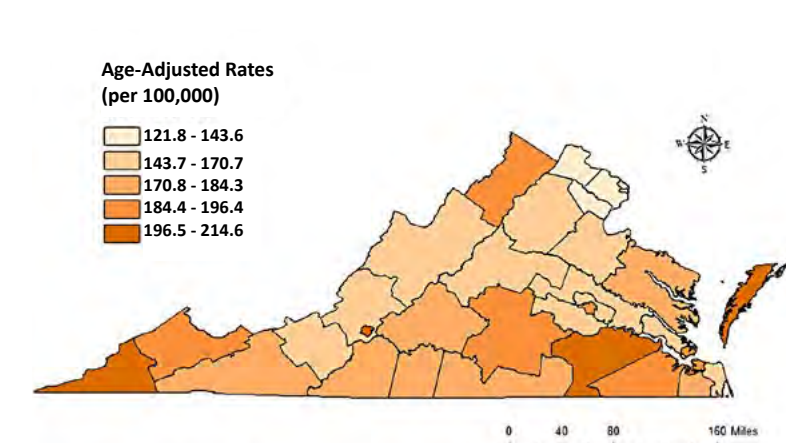


Figure 4

All Sites Cancer Mortality Rates by Health District, 2010-2014

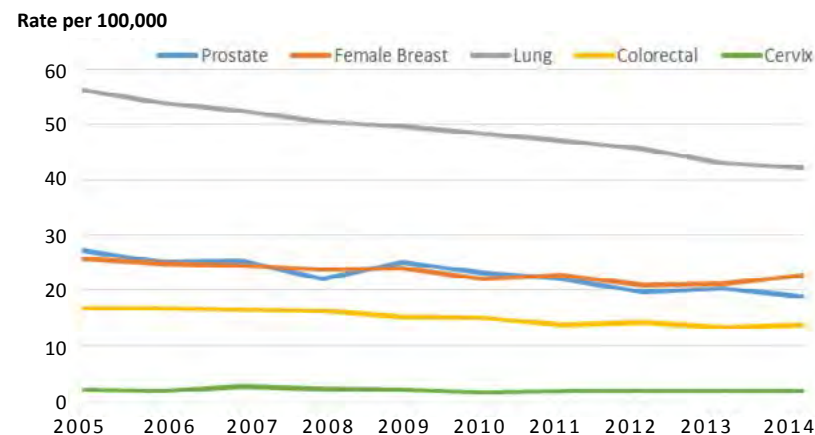


VDH Division of Health Statistics. Based on combined 2010-2014 data. Mortality rates are age-adjusted to the 2000 U.S. standard population.

Figure 3

The small population size in rural counties can make it difficult to interpret rates based on per 100,000 since an increase or decrease by a few cases can significantly change the calculated rate.

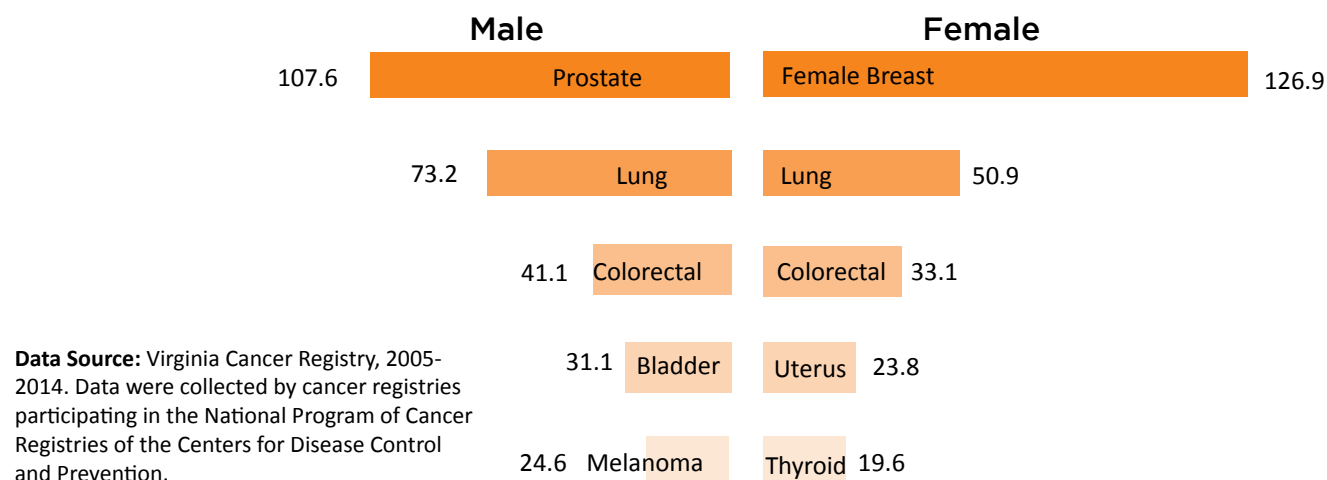
Age-Adjusted Mortality by Selected Cancer Site, Virginia 2005-2014



Data Source: Virginia Cancer Registry, 2005-2014.

Figure 5

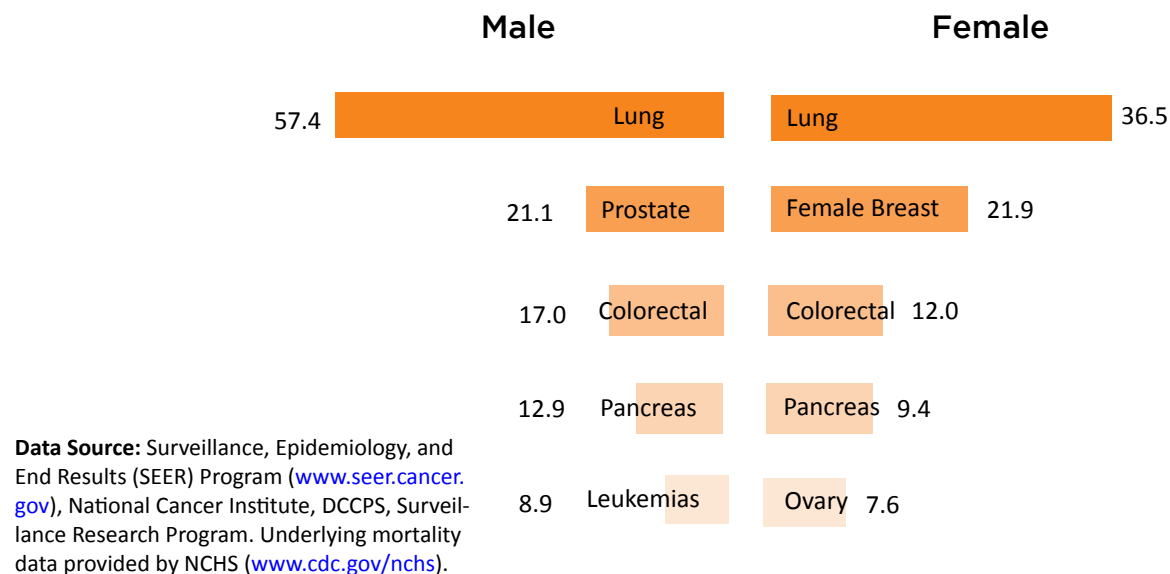
Top Five Cancers by Age-Adjusted Incidence Rates and Sex, Virginia, 2010-2014



Rates are per 100,000 and age-adjusted to the 2000 US Standard Population.

Figure 6

Top Five Cancers by Age-Adjusted Mortality Rates and Sex, Virginia, 2010-2014



Rates are per 100,000 and age-adjusted to the 2000 US Standard Population.

Figure 7

Pediatric Cancer Burden

In 2014 in Virginia, 506 children and young adults aged 0-24 were diagnosed with cancer of any type. Cancer was the seventh leading cause of death in this age group, with an incidence rate of 18.3 cases per 100,000 children and young adults.¹⁸ In 2010-2014, the most common types of cancer in children and young adults aged 0-24 were brain and central nervous system, thyroid, leukemia, and Hodgkin's Lymphoma. In 2014, 56 children and young adults aged 0-24 died from cancer in Virginia.¹⁵

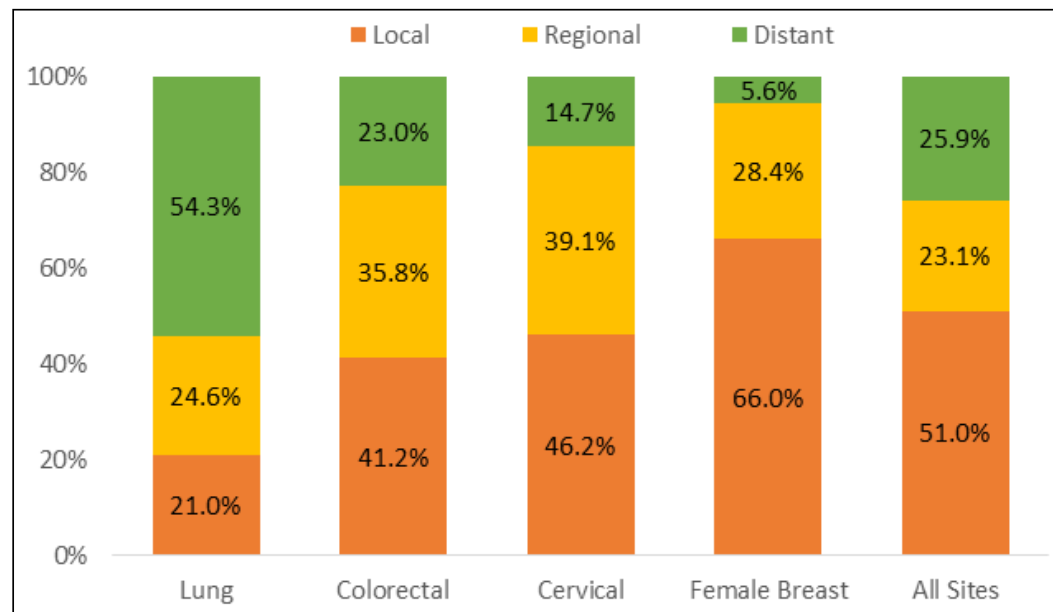
Nationally, the overall 5-year survival rate for pediatric cancers has increased to over 80% from 58% in the mid-1970s, due to medical and research advances. National Cancer Institute (NCI) funds research through federal dollars; however, pediatric cancer research represents only 4% of those funds. Each year about 4,000 children in the US enter one of approximately 100 clinical trials sponsored by the NCI. This collaborative research program spearheaded by the Children's Oncology Group (COG) provides

access to state-of-the-art therapies and the collective expertise of world-renowned pediatric specialists to children regardless of their geographic location. It enables children in Virginia to receive cutting-edge therapy without leaving their state.

Cancer Stages

Cancer stage refers to the extent of disease at diagnosis. When cancer is local, it is still within the original site or organ. Cancer in the regional stage has spread outside the original site to nearby organs or lymph nodes. Metastasis, also referred to as distant stage, is the process in which cancer cells break away from where they are first formed and travel in the body to form new tumors. In general, diagnosing cancer in the local stage before it has spread leads to better health outcomes. In Virginia, 21%, 41%, 47%, and 66% of lung, colorectal, cervical, and breast cancers were diagnosed at the local stage from 2010-2014, respectively (Figure 8).

Percent of Incident Cancer Diagnosis Stage, Virginia, 2010-2014



Data Source: Virginia Cancer Registry, based on combined 2010-2014 data. Data are collected by cancer registries participating in the National Program of Cancer Registries for the Centers for Disease Control and Prevention. Stage defined using Derived Summary Staging values (<http://seer.cancer.gov/tools/ssm/intro.pdf>). Unstaged and in situ diagnoses were not included.

Figure 8

Risk Factors

Research has shown that certain risk factors may increase a person's chances of developing cancer. Risk factors include exposures to certain chemicals or other substances and engaging in certain health behaviors. They also include factors that people cannot control such as genetics, sex, and age.²³

Genetics, Sex, and Age

About 5-10% of cancers in the United States are attributable to family history.²² Older age is the most important risk factor associated with cancer, with the median age of cancer diagnosis in the US being 66 years. Some cancers, such as bone cancer, are more common in people under age 20. In addition, cancer incidence and mortality rates overall are higher among males than females.

Overweight and obesity

Excess weight can increase the risk of developing some types of cancer, including breast, colorectal, and pancreatic.²² In 2016, 65.5% of Virginia adults were overweight or obese. Normal weight youth are less likely to be overweight or obese in adulthood, therefore reducing risk of cancer. In 2015, 28.1% of Virginia high school students were overweight or obese.

Alcohol

Drinking alcohol can increase the risk of certain types of cancer, including mouth, throat, esophageal, larynx, liver, and breast.²² The more a person consumes alcohol, the higher their risk. In 2016, 53.7% of Virginia adults reported drinking alcohol in the past month, and 15.9% engaged in binge drinking, defined as 4 or more drinks for women or 5 or more drinks for men in one sitting.²⁶ In 2015, 23% of Virginia high school students reported using alcohol in the past 30 days and 11% engaged in binge drinking.²⁹

Smoking and other tobacco use

One-third of all cancer deaths in the United States link to tobacco, and almost 9 out of 10 lung cancer cases link to smoking.³⁰ Other cancers associated with smoking include colorectal, liver, esophageal, stomach, bladder, and pancreatic.³⁰ In 2016, 15.3% of Virginia adults smoked cigarettes and in 2015, 8.2% of Virginia high school students were current cigarette smokers.^{31, 32} Over 4,000 Virginia youth become new, daily smokers each year, and an estimated 150,000 Virginia youth will die prematurely due to smoking.³² Non-smokers who regularly breathe in smoke from others' cigarettes have a 20-30% higher risk of developing lung cancer.³³

Smokeless tobacco (also referred to as snus, snuff or dip) is no safer - users have an increased risk of mouth, esophageal, and pancreatic cancers.²² In 2016 about 3.7% of Virginia adults were current smokeless tobacco users. The percentage of youth who used smokeless tobacco in 2015 was 5.5%.³⁴

A new tobacco product on the rise among youth is Electronic Nicotine Delivery Systems (ENDS) - devices that heat a flavored liquid into a vapor that the user inhales. About 16.8% of Virginia youth currently use ENDS.³² Research on the safety of ENDS use is limited; however, current studies show that e-cigarettes usually contain nicotine, and that users are more likely to try other tobacco products in the future.³⁵



Health Equity and Crosscutting Issues

Health Disparities

According to the Robert Wood Johnson Foundation, “health equity means that everyone has a fair opportunity to be as healthy as possible”. Health disparities are differences in health opportunities related to social, economic and environmental factors. These include race, ethnicity, disability, gender, sexual orientation, gender identity, geographic location, income, and education are sometimes referred to as social determinants of health. Language barriers can also affect health outcomes by reducing health literacy. “Health literacy is the capacity to “obtain, communicate, process, and understand basic health information and services to make appropriate health decisions.”³⁸ This cancer plan addresses health disparities with specific strategies focusing on disparate populations.

The NCI defines cancer health disparities as differences in cancer incidence, prevalence, mortality, survivorship, and related health conditions. Different populations experience cancer burden disproportionately. Lack of health care coverage, low socioeconomic status (SES), and lower education levels are major factors in cancer health disparities. These factors influence cancer risk associated with lifestyle (behaviors such as smoking, diet and physical activity) and environment, in addition to reducing access to medical care including cancer screening and treatment. Individuals of a lower SES may be more likely to experience financial stress related to cancer. Cancer patients and survivors are more likely to experience financial toxicity related to healthcare cost than people who have not ever had cancer.⁶

Examples of cancer health disparities nationally include: ⁴⁰

- The cancer death rate is higher for people with low SES.
- The likelihood of being diagnosed with late-stage cancer is higher for medically underserved people and Hispanics/Latinos.
- Blacks have the highest mortality rate for all cancers combined and most major cancers.
- People from minority, medically underserved, and geographically isolated groups have lower access to and participate less in cancer clinical trials.⁴¹
- The 5-year cancer survival rate for lung, colon, and pancreatic cancers is lower for black men compared to non-Hispanic men.
- The 5-year survival rate for breast cancer is lower for black women compared to non-Hispanic white women.
- Lesbian, Gay, Bisexual, Transgender, Questioning/Queer (LGBTQ) persons experience greater barriers to health insurance coverage and access to health care.⁴²
- Research on lifestyle factors and the continuum of care related to cancer prevention, diagnosis, treatment and survivorship for the LGBTQ population is limited.
- Adolescent and Young Adult (AYA) patients from low SES or the LGBTQ population are much less likely offered or to proceed with, fertility preservation services.⁴³

Crosscutting Issues

In light of the social determinants of cancer burden and outcomes, the community health worker (CHW) model is a promising approach to improve care across the continuum of cancer prevention, detection, treatment and survivorship.⁴⁴ A CHW applies his or her unique understanding of the experience, language and culture of the populations he or she serves to promote healthy living and to help people take greater control over their health and their lives. The CHWs receive training to work in a variety of community settings and partner in the delivery of health and human services. They carry out one or more of the following roles: providing culturally appropriate health education and information; linking people to the services they need; providing direct services, including informal counseling and social support; advocating for individual and community needs, including identification of gaps and existing strengths; and actively building individual and community capacity. In some cases, CHWs are known by other names including, but not limited to, promotores de salud, patient navigator, lay health promoter, and community health advocate.

CHWs, other appropriately trained community members, or clinicians may deliver patient navigation services. Common navigation services include improving health literacy, increasing awareness of and access to lifestyle change programs and preventive services, and assisting patients in accessing medical services.⁴⁵ In a treatment setting, patient navigation is the process of connecting patients to timely resources, such as those addressing barriers to care, providing patient education and offering support.

Navigation services can assist the patient and their caregivers with access to medical and psychosocial care throughout the cancer experience.⁴⁶ The Virginia Cancer Patient Navigation Network (VaCPNN) is comprised of patient navigators across Virginia who enhance outcomes for patients, families and healthcare teams through education, networking, and mutual support.⁴⁷



Prevention

Cancer prevention is reducing the risk of developing cancer through strategies that include promotion of healthy lifestyle behaviors, healthy environments, and laws and policies that support healthy lifestyles and environments. Although other preventable risk factors exist for cancer, the risks listed below were specifically selected for this plan because of their importance and urgency in Virginia.

Tobacco

In Virginia, 10,300 adult deaths each year are associated with smoking.⁴⁹ Risk of lung cancer drops with smoking cessation. In addition, the risk of dying from lung cancer decreases by half within 10 years of quitting.⁵⁰

Quitline

Tobacco cessation services are available by calling 1-800-QUIT-NOW or by going to the website www.QuitNow.net/Virginia. Services include cessation coaching from trained specialists and a workbook to guide the quitting process. Cessation medications may be available. The quitline also helps with quitting other forms of tobacco, including ENDS. Chances of quitting tobacco successfully are eight times higher with the program.⁴⁸

Nutrition and Physical Activity

Healthy eating habits and physical activity can reduce the risk of obesity. American Cancer Society (ACS) recommendations for cancer prevention include: achieve and maintain a healthy weight throughout life; be physically active; eat a healthy diet, with an emphasis on plant foods; and limit alcohol intake.⁵¹ ACS also recognizes the importance of access to affordable, healthy foods, and safe environments for physical activity. Dietary guidelines recommend that those who drink alcohol do so moderately, defined as one drink per day for women and up to two drinks per day for men.⁵²

HPV

Human papillomavirus (HPV) refers to a group of viruses that can cause genital warts and some cancers, including cervical, anal, genital, and mouth/throat cancers. HPV spreads through unprotected sexual contact. HPV is so common that the CDC reports that nearly everyone gets HPV at some point in his or her life.⁵³ Although most HPV infections go away without causing problems, it is possible for a person to develop cancer several years after infection with HPV. The HPV vaccine can protect against HPV-associated cancers. The recommendation is to administer the vaccine to boys and girls before exposure



to the virus. Of the 30,700 cases of cancer caused by HPV in the United States each year, 28,000 could be preventable through vaccination.⁵⁴

Ultraviolet Radiation

Ultraviolet (UV) radiation is a harmful form of radiation produced by the sun and by indoor tanning devices. Too much exposure to UV radiation can lead to skin cancer, which is the most common cancer in the United States.⁵⁵ In order to reduce exposure to UV radiation, the CDC recommends staying in the shade, particularly during midday hours; wearing protective clothing that includes long sleeves, hats, and sunglasses; using sunscreen with a sun protection factor (SPF) of 15 or higher; and avoiding indoor tanning.⁵⁶

Youth and young adults are generally more likely to use indoor tanning beds than other age groups.⁵⁷ It is particularly important to address indoor tanning among youth because the risk of skin cancer is greater the younger an individual starts tanning. Although the US Food and Drug Administration (FDA) has recently proposed a rule to restrict the use of indoor tanning beds to adults ages 18 and over, current Virginia state law only requires parental consent for a minor to use indoor tanning devices.⁵⁸

Radon

Radon is a natural, radioactive gas that has no color or smell. Radon forms in rocks and soil and can enter homes through cracks or gaps in the walls or foundations, or through the water supply. Radon is the second most common cause of lung cancer after smoking, and it is estimated that radon is linked to 20,000 lung cancer deaths in the United States each year.⁵⁹ The Environmental Protection Agency (EPA) reports that many localities in central and western Virginia fall within the “radon belt”, a region of the United States with a high risk for elevated levels of radon.⁶⁰ Radon testing is the only effective method of detection because radon is odorless and not visible. Radon test kits are relatively easy to use and inexpensive. Radon mitigation (reduction) systems are very effective, but costs vary depending on the size of the home and the methods needed. Radon resistant construction techniques are now available to reduce radon levels in new construction.⁶¹

Goal 1: Reduce exposure to tobacco among Virginians.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
1.1 Decrease the percentage of Virginians who use tobacco products.			a. Advocate to change state laws to discourage consumption by increasing prices/taxes and requiring tobacco product retailers to be licensed. b. Advocate to change state laws to eliminate exemptions for indoor tobacco use. c. Advocate to change state laws to prohibit the sale of all tobacco products to anyone under the age of 21. d. Encourage physicians and other healthcare providers to screen for all tobacco use and refer to tobacco cessation resources as appropriate. e. Increase educational programs to discourage use of all tobacco products and encourage the use of cessation services. f. Increase funding for tobacco product cessation programs. g. Advocate for schools to implement comprehensive tobacco free policies. h. Advocate for adopting tobacco free college, university, and healthcare campus policies. i. Implement school-based prevention programs that focus specifically on the negative health and physical effects of chewing tobacco. j. Expand age-appropriate prevention messages through existing youth-oriented community-based channels, such as organized athletics, youth councils, and scouts. k. Expand the adoption of the community health worker model to connect current tobacco users to and/or provide cessation services and education. l. Advocate for adopting a policy to prohibit the sale of flavored liquid nicotine.
1.1.1 Decrease the percentage of adult cigarette smokers.	15.3% (BRFSS 2016)	12%	
1.1.2 Increase the percentage of adolescents in grades 9-12 who reported never trying a cigarette (even one or two puffs).	25.7% (VYS 2015)	27%	
1.1.3 Decrease the percentage of adults who use chewing tobacco, snuff or snus.	3.7% (BRFSS 2016)	3.5%	
1.1.4 Decrease the percentage of adolescents in grades 9-12 who use chewing tobacco, snuff or dip.	5.5% (VYS 2015)	5.2%	

Prevention

Goal 2: Improve nutrition and physical activity among Virginians.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
2.1	Increase the percentage of Virginians who meet daily recommended fruit and vegetable intake.			a. Implement nutrition and beverage standards including sodium and sugar standards in public institutions, worksites, schools, and other key locations. b. Strengthen healthier food access and sales in retail venues and community venues (i.e. farmers markets) through increased availability of fruit and vegetables and more low/no sodium/sugar options, improved pricing, placement, and promotion. c. Expand the adoption of the community health worker model to connect Virginians to healthier food access points and provide education on nutrition and beverage standards.
2.1.1.	Increase the percentage of adults who meet daily recommended fruit and vegetable intake.	13.8% (BRFSS 2015)	14.5%	
2.1.2	Increase the percentage of adolescents in grades 9-12 who meet the daily recommended fruit and vegetable intake.	18.6% (VYS 2015)	19.5%	
2.2	Increase the percentage of Virginians who meet physical activity guidelines.			a. Strengthen community promotion of physical activity through signage, worksite policies, social support, and joint use agreements in communities and jurisdictions, including with youth-serving organizations (including schools). b. Develop and/or implement transportation and community plans that promote walking, biking, and other forms of physical activity including to and from schools. c. Collaborate with youth-serving organizations (including schools) to promote evidence-based educational programs that include a reward system.
2.2.1	Increase the percentage of adults who engage in 150 or more minutes of aerobic exercise and two or more days of muscle strength training exercise per week.	22.1% (BRFSS 2015)	23.2%	
2.2.2	Increase the percentage of adolescents in grades 9-12 that report being active at least 60 minutes per day every day in the past 7 days.	25.1% (VYS 2015)	26.4%	



Prevention

Goal 2: Improve nutrition and physical activity among Virginians. *(Continued)*

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
2.3 Decrease the percentage of Virginians who are overweight or obese.	TBD	TBD	a. Implement evidence-based engagement strategies to build support for lifestyle/behavior change. b. Increase reach for evidence-based supports for lifestyle/behavior change through collaborative networks, including youth-serving organizations (e.g., community health workers). c. Increase electronic health records (EHR) adoption and the use of health information technology (HIT) to improve performance (e.g. provider recall/reminder systems for patients with elevated BMI and educate and refer to appropriate resources). d. Promote breastfeeding and increase access to breastfeeding friendly environments. e. Discourage consumption of alcoholic beverages in excess of recommended levels
2.3.1 Decrease the percentage of adults who are overweight or obese.	65.5% (BRFSS 2016)	62.2%	
2.3.2 Decrease the percentage of adolescents in grades 9-12 who are overweight or obese.	28.1% (VYS 2015)	26.7%	

Goal 3: Reduce HPV infections among Virginians.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
3.1	Increase the percentage of Virginians under 18 years of age completing the HPV vaccine series.	TBD	TBD	a. Provide education to Virginians (including parents, schools, communities, physicians and other healthcare providers) about the effectiveness of the HPV vaccination in preventing HPV associated cancers. b. Advocate to amend current state code (Virginia Code § 22.1-271.2) for reporting immunization status of students to include data for HPV vaccination in addition to the current required sixth grade reporting of MMR, HepB, and Tdap vaccines. c. Advocate to amend current state code (Virginia Code § 22.1-271.2) for school and daycare minimum immunization requirements to align with current national guidelines for properly spaced HPV vaccinations. d. Implement client reminder and end-of- appointment scheduling of next visit to increase completion of the HPV vaccine series. e. Expand the adoption of the community health worker model by healthcare organizations to promote HPV vaccine messaging. f. Provide education on HPV and HPV vaccination and/or provide connection to HPV vaccination resources.
3.1.1	Increase the percentage of females aged 13-17 years completing the HPV vaccine series.	49.5% (National Immunization Survey - Teen 2016)	52%	
3.1.2	Increase the percentage of males aged 13-17 years completing the HPV vaccine series.	37.5% (National Immunization Survey - Teen 2016)	39.4%	

Goal 4: Reduce exposure to ultraviolet (UV) radiation from the sun and indoor tanning devices (to include, but not limited to tanning beds, booths, and sun lamps) among Virginians.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
4.1	By 2022, Decrease the percentage of youth reporting sunburns in the past 12 months.	TBD	TBD	a. Promote policies and education addressing skin cancer: sunscreen use, sun protective clothing and hazards of tanning bed use at: child development centers, schools, Parks and Recreation, youth worksites, and summer camps. b. Expand the adoption of the community health worker model to provide education on sun safe behaviors and/or provide connection to sun safe resources. c. Request the addition of questions on the VYS regarding the use of sun-safe behaviors.
4.2	Decrease the percentage of youth who have used a tanning booth or sun lamp in the past 12 months.	TBD	TBD	a. Advocate to change state laws to include the prohibition of use of indoor tanning devices (tanning beds, tanning booths, and sunlamps) that emit UV for individuals under the age of 18. b. Expand the adoption of the community health worker model to provide education on risks of indoor tanning. c. Request the addition of questions on the VYS regarding the use of artificial UV.
4.3	Reduce melanoma incidence rate.	19.7/100,000 (VCR 2010-2014)	18.7/100,000	a. Provide education to the public regarding the risks of indoor tanning. b. Provide education to minority populations (to include ethnic and LGBTQ populations) regarding the use of sun safety strategies. c. Partner with employers to implement sun safety policies. d. Expand the adoption of the community health worker model to educate at risk populations (migrant workers, agriculture workers, outdoor workforce) regarding the risks of UV exposure and appropriate sun safety strategies and make referrals to resources.

Goal 5: Reduce exposure to radon among Virginians.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
5.1	By 2022, increase the annual reported number of homes tested for radon.	TBD	TBD	a. Promote awareness of radon in moderate/high risk areas through media campaign and other educational activities. b. Adopt policy to require mandatory reporting of radon tests performed and mitigation systems installed.
5.2	By 2022, increase the annual reported number of homes mitigated for radon.	TBD	TBD	c. Advocate to increase state funding to provide radon test kits. d. Increase the number of eligible local jurisdictions that require radon resistant new construction techniques. e. Expand the adoption of the community health worker model to provide education on risks of radon exposure and connection to testing and mitigation resources.

Early Detection



Cancer Screening

Screening tests are used to find cancer before there are any symptoms present and improve treatment outcomes. Regular screening tests (along with follow-up tests and treatment if diagnosed) reduce the risk of dying from cancer. National organizations, including the [United States Preventive Services Task Force \(USPSTF\)](#) and the [American Cancer Society \(ACS\)](#), recommend screening tests for some types of cancers.

Detecting cancer in the early stages increases the likelihood of successful treatment. The two major components of early detection are education to promote early diagnosis and screening. Recognizing warning signs of cancer early and taking prompt action can lead to early diagnosis.⁶² Monitor skin for sudden variations that can include but are not limited to: irregular moles, sores that do not heal, thickened lumps, and changes in texture (especially around breast or genital areas). Symptoms of cancer are not limited to visual changes; sudden changes in bodily functions can also be cause for concern. These changes include but are not limited to: unexplained abdominal pain, unusual bleeding or discharge in bowel movements, difficulty swallowing or loss of appetite, weight change, unexplained night sweats, and fatigue. These symptoms do not necessarily mean that cancer is present, but if they persist, a doctor should be visited.^{63, 64}

Shared decision-making

Often times, conflicting guidelines are presented to people with an array of options for cancer screening. Individuals must decide whether to screen, which test to undergo, how often to undergo the test, and when to stop screening.⁶⁵ Cancer screening tests have potential benefits, but also present potential harm including false positive results and risks involved in unnecessary follow up screening and medical procedures. Shared decision-making between patients and healthcare providers promotes informed decisions that take into account the patient's individual risk factors and are consistent with the patient's values and preferences.⁶⁶ Recommendations for breast and cervical cancer screening in the transgender community are unstandardized across organizations, which may cause confusion for patients and providers. Transgender patients should discuss appropriate screening tests for their individual health status with their provider. For more information about cancer screening recommendations for the transgender community, please visit [The Center of Excellence for Transgender Health](#).⁶⁷

Breast cancer

Breast cancer is the most commonly diagnosed cancer in Virginia. Mammography is the recommended screening test to detect breast cancer at its earliest stage. In 2016 in Virginia, 80.4% of women 40 years of age or older reported having a mammogram in the previous two years.²⁶

Cervical cancer

Regular screening tests can prevent cervical cancer. The recommended screening test for cervical cancer is the Pap smear and/or HPV testing. Because few women have symptoms or signs in the early stages of cervical cancer, screening for early detection is very important. In 2016, 81.6% of women in Virginia aged 21-65 years reported having had a Pap smear test in the previous three years.²⁶

Lung cancer

Lung cancer is the number one cause of cancer death in Virginia. A late stage diagnosis is common in most lung cancers and makes treatment more difficult (Figure 8). Low-dose spiral computed tomography (CT) was adopted to detect lung cancer in 2013. This screening test has shown evidence that suggests it reduces lung cancer mortality by about 20% compared to standard chest x-ray.⁷⁰

Prostate cancer

Incidence rates for prostate cancer spiked in the late 1980s and early 1990s, most likely due to increased use of the prostate-specific antigen (PSA) blood screening test.⁷⁰ Recommendations against routine PSA testing beginning in 2008 have reduced screening rates.⁷⁰ Patients and providers should discuss the uncertainties, risks, and potential benefits of prostate cancer screening.

80% by 2018

CACV and many of its partners support the National Colorectal Cancer Roundtable's (NCCRT) 80% by 2018 initiative, a shared goal to screen 80% of those eligible for colorectal cancer screening by the end of 2018. CACV convened the Virginia Colorectal Cancer Roundtable in 2016 bringing together stakeholders including health systems, primary care practitioners, gastroenterologists, nurses, navigators, community groups, employers, insurers and citizens to explore and address barriers to screening. Members and partners developed individual and organizational action plans to advance Virginia's screening rate of 70.3% toward the goal of 80% by 2018. The initiative, and its transition beyond 2018, aim to reduce colorectal cancer as a major public health issue.

Colorectal cancer

Colorectal cancer incidence rates have declined for several decades due, in part, to an increase in screening. Some endoscopic screening tests are highly effective at preventing colorectal cancer because polyps, small growths of cells, are found and removed before they turn into cancer.⁶⁷ Several screening tests are available, including colonoscopy, CT colonography, flexible sigmoidoscopy, FIT, gFOBT and stool DNA. Individuals should consult with their healthcare provider to choose the screening test that is best for them. In 2016 in Virginia, 70.3% of adults aged 50-75 reported receiving the recommended colorectal cancer screening.²⁶



Other cancers

Some types of cancer have no national screening guidelines, yet there are still screening options for individuals to discuss with their provider. Virginia identified the following cancers as priorities.

Invasive melanoma accounts for about 1% of all skin cancer cases in the US but is responsible for the vast majority of skin cancer deaths.⁷⁰ Individuals can monitor themselves for skin cancer by conducting a self-exam, looking for new or changing skin growths, particularly those that look unusual.⁷⁰

Oral cancer can affect any part of the oral cavity, including the lips, tongue, mouth, and throat.⁷⁰ Early detection of any of these oral cancers can be achieved through the identification of abnormalities from visual inspection by dentists and/or physicians at regular check-ups.⁷⁰

Ovarian cancer is the most common cause of death among the gynecologic cancers and accounts for 5% of all cancer deaths among women.⁷⁰ There currently is no screening test recommended for the early detection of ovarian cancer in average risk women.⁷⁰ A pelvic exam, sometimes in combination with a transvaginal ultrasound, may be used to evaluate women who have symptoms.⁷⁰

Pancreatic cancer is difficult to detect in its early stages. It is difficult for healthcare providers to see or feel pancreatic tumors due to its location in the body.⁷² Currently, there are no recommended screening tests approved to detect pancreatic cancer.⁷²

Importance of family history

Cancers that occur in several members of the same family may link to an inherited gene mutation (hereditary cancer syndrome). Family medical history helps determine whether cancer is likely inherited and genetic testing for individuals with a strong family history of cancer can provide valuable information regarding cancer risk.⁷³

Genetic counselors help individuals weigh the pros and cons of testing, interpret test results, and understand their screening and medical management options.⁷⁴ For some adoptees, family medical history may be difficult to obtain. Adoptees should be empowered to seek their family medical history if possible. If family medical history is impossible to obtain, genetic testing may be another option.

Goal 6: Increase high-quality cancer screening and early detection rates for Virginians.

Overall strategies for Objectives 6.1 – 6.4:

- a. Provide education to physicians, other healthcare providers, and the public about current national cancer screening guidelines for populations at high risk for cancer.
- b. Provide education to physicians, other healthcare providers, and the public about available low and no cost cancer screening resources for low-income, under and uninsured populations.
- c. Encourage physicians and other healthcare providers to use evidence-based practices to increase cancer screening rates (patient reminders, provider reminders, provider assessment and feedback).
- d. Advocate to ensure coverage of screenings across all public and private payer options.
- e. Advocate for state and federal policies that improve access to health insurance and/or free or low-cost screenings.
- f. Advocate for and support the implementation of workplace policies to provide (paid) time off for individuals to complete recommended cancer screenings.
- g. Reduce barriers to screening among underserved populations through the use of patient navigation and other culturally competent outreach strategies.
- h. Work with key stakeholders to secure resources to screen uninsured/low income populations.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
6.1	Increase the percentage of women aged 40-74 who received a mammogram in the past two years.	80.4% (BRFSS 2016)	84.4%	6.1 In addition to the overall strategies listed above: a. Provide education to physicians, other healthcare providers, and the public about current national breast cancer screening guidelines and informed decision-making. b. Provide education to physicians and other healthcare providers on issues related to breast cancer screening in the LGBTQ community. c. Provide education to physicians, other healthcare providers, and patients on the benefits of 3D mammograms for women with dense breasts.

Goal 6: Increase high-quality cancer screening and early detection rates for Virginians. *(Continued)*

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
6.2 Increase the percentage of women aged 21-65 who have had a pap smear in the last 3 years.	81.6% (BRFSS 2016)	85.7%	6.2 In addition to the overall strategies listed on pg. 31: - Provide education to physicians, other healthcare providers, and the public about current national cervical cancer screening guidelines. - Provide education to physicians and other healthcare providers on issues related to cervical cancer screening in the LGBTQ community.
6.3 Increase the percentage of adults aged 50-75 who receive recommended colorectal cancer screening.	70.3% (BRFSS 2016)	80%	6.3 In addition to the overall strategies listed on pg. 31: - Provide education to physicians, other healthcare providers, and the public about current national colorectal cancer screening guidelines, including high risk population younger than 50. - Provide education to physicians, other healthcare providers, and the public about the incidence of colorectal cancer symptoms among high risk populations younger than 50 and the symptoms to look for. - Provide education to physicians and other healthcare providers on issues related to colon cancer and colon cancer screening in the LGBTQ community.
6.4 Increase the percentage of lung cancers diagnosed at the localized stage.	18.9% (VCR 2010-2014)	20%	6.4 In addition to the overall strategies listed on pg. 31: - Provide education to physicians, other healthcare providers, and the public about current national lung cancer screening guidelines and the use of risk assessments to determine who should be screened based on current national guidelines. - Promote shared decision-making process for lung cancer screening. - Support health systems as they work to create and implement lung cancer screening programs.

Early Detection

Goal 6: Increase high-quality cancer screening and early detection rates for Virginians. (Continued)

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
6.5 Increase the percentage of men aged 40+ who have ever had a discussion with their provider on the advantages and disadvantages of a PSA test.	31.1% (BRFSS 2016)	32.7%	6.5 In addition to the overall strategies listed on pg. 31: - Encourage health systems and healthcare providers to adapt a comprehensive prostate cancer risk assessment which promotes shared decision-making discussions between the provider and the patient. - Provide education to men in Virginia regarding national prostate cancer screening guidelines for those who are at high risk.
6.6 Increase early detection rates for other cancers:			6.6 In addition to the overall strategies listed on pg. 31: - Provide education to physicians, other healthcare providers, and the public about cancer symptoms and potential screening options. - Provide education to physicians, other healthcare providers, and patients on genetic testing options. - Provide education to physicians, other healthcare providers, and the public about current national skin cancer screening guidelines. - Support research on new screening options. - Promote policies that improve access to dental care in Virginia. - Support health systems as they work to create and implement lung cancer screening programs.
6.6.1 Increase the percentage of melanomas that are diagnosed at the local stage.	75.8% (VCR 2010-2014)	78.5%	
6.6.2 Increase the percentage of oral cancers that are diagnosed at the local stage.	30.0%	31.0%	
6.6.3 Increase the percentage of ovarian cancers that are diagnosed at the local stage.	14.3%	14.7%	
6.6.4 Increase the percentage of pancreatic cancers that are diagnosed at the local stage.	30.1%	31%	



Diagnosis and Cancer Directed Therapy

Diagnosis

A variety of tests can diagnose cancer when the disease is suspected. The tests that are used are determined based by the type of cancer that may be present and its location in the body. These include laboratory tests using blood, urine or other body fluids, imaging procedures (CT scan, nuclear scan, ultrasound, MRI, PET scan, x-ray) and biopsy (testing a sample of the tissue where cancer is suspected).

Cancer directed therapy is a treatment intended to remove, destroy or reduce the size of tumors or delay the spread of cancer cells. The major types of cancer directed therapy are surgery, radiation, chemotherapy, hormonal therapy, and biological therapies such as immunotherapy.

Non-cancer directed therapy is any treatment meant to prepare the body for cancer-directed treatment, prolong the patient's life, reduce pain or make the patient more comfortable. This is supportive care.⁷⁶

Cancer patients can experience significant fertility and sexual side effects from treatment but may not feel comfortable discussing these issues with their treatment provider. The ACS provides resources for patients and health care providers to facilitate discussion of this important aspect of quality of life.⁷⁷

Importance of evidence-based care

Use of evidence-based diagnosis and treatment is essential to achieve optimal outcomes for cancer patients. Evidence-based medicine relies on rigorous scientific research to determine which therapies are most likely to result in the best patient outcomes in terms of disease progression and quality of life.⁷⁸

The Commission on Cancer (CoC) is a consortium of professional organizations that focus on survival and quality of life for cancer patients.⁷⁹ It sets national standards for accreditation of cancer centers in the United States and Puerto Rico to ensure high-quality, multidisciplinary, and comprehensive cancer care. These standards follow evidence-based guidelines. As of August 2017, there were 36 CoC-accredited cancer programs in Virginia.⁸⁰ The National Comprehensive Cancer Network (NCCN) is an alliance of 27 leading cancer centers dedicated to high quality cancer care through a comprehensive set of evidence-based guidelines for cancer management.⁸¹ The NCI Cancer Center Program also provides oversight for cancer treatment through its NCI-Designated Cancer Centers.⁸² NCI-Designated Cancer Centers conduct studies including basic laboratory research, population research and clinical trials to test new treatments. There are two NCI-Designated Cancer Centers in Virginia – the Massey Cancer Center at Virginia Commonwealth University in Richmond and the University of Virginia Cancer Center in Charlottesville.

Complementary, alternative, and integrative care

Many cancer patients seek complementary, alternative, and integrative medicine. Complementary treatments are ones used along with standard, evidence-based medical treatment. Alternative medicine is used instead of standard, evidence-based care.² Treatments of this type can be important components of effective, patient-centered cancer care. However, patients

should consult with their primary cancer treatment provider while seeking these types of care to ensure that they are safe and do not interfere with their standard treatment regimen.

Access to care

Access to services related to cancer diagnosis and cancer-directed therapy is a major concern for cancer patients. Access to health care services means “the timely use of personal health services to achieve the best health outcomes.”¹ Adequate access to care requires the ability to enter the health care system (i.e. insurance coverage), proximity to a location where the services are provided (geographic location) and finding a provider that the patient trusts and can communicate with.⁸³ Financial barriers, lack of health insurance, lack of available services and lack of culturally competent care reduce access to care. Social determinants of health including race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity and residential location are often associated with differences in access to care. Strategies to improve access to care include programs to promote health literacy, patient navigation services, and access to clinical trials.

Goal 7: Improve quality diagnosis and treatment using evidence-based patient-centered care.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
7.1	By 2022, Increase availability and access to most current evidence-based diagnosis and treatment options following national standards.	TBD	TBD	a. Provide education to physicians, other healthcare providers, patients, and community stakeholders about cancer diagnostic and treatment options. b. Provide education to physicians, other healthcare providers, and community stakeholders about and promote use of genomic and molecular tools for diagnosis and cancer care. c. Facilitate sharing of patient medical information using electronic health records (EHRs) between cancer centers and facilities through improved provider education on sharing information and HIPAA guidelines. d. Promote collaboration between community and academic treatment centers. e. Facilitate shared decision-making between patients and providers regarding cancer treatment decisions among individuals who have multiple treatment options. f. Promote patient navigation to educate patients and caregivers on the importance of timely informed decision-making, including potential long-term and late effects. g. Provide education to physicians, other healthcare providers, the public, and state legislators about the value of Commission on Cancer (CoC) and National Cancer Institute (NCI) designated Centers and their role in ensuring quality diagnosis and care. h. Incorporate fertility preservation as standard of care at diagnosis. i. Advocate for coverage of reproductive endocrinology service.

Goal 7: Improve quality diagnosis and treatment using evidence-based patient-centered care. (Continued)

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
7.2	By 2022, reduce socioeconomic, structural, and cultural barriers to obtaining quality diagnosis and effective treatment.	TBD	TBD	a. Identify psycho-social barriers to obtaining and sustaining quality diagnostic and treatment services and identify resources to address them. b. Advocate for and support legislation favorable to cancer patients, including no limitations on lifetime and annual coverage and pre-existing conditions. c. Provide education to decision makers (legislators and policy makers) regarding barriers to obtaining health insurance. d. Provide education to and identify resources to assist patients and families in avoiding and overcoming financial consequences. e. Promote the use of patient navigation to assist patients in overcoming barriers to care. f. Provide education to vulnerable populations on the importance of seeking high quality care and connect to resources for cancer treatment. g. Provide education and resources to physicians, other healthcare providers, patients, and caregivers about cancer treatments' possible impact on fertility. h. Increase the availability of patient materials that adhere to health literacy standards and promote resources that help providers talk with clients that have low health literacy and/or language barriers. i. Identify and improve resources that address structural barriers to include increasing transportation to and from cancer treatment centers.

Diagnosis and Cancer Directed Therapy

Goal 7: Improve quality diagnosis and treatment using evidence-based patient-centered care. (Continued)

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
7.3	By 2022, increase the number of centers connecting cancer patients and caregivers with clinical and complementary support services.	TBD	TBD	a. Provide education to physicians, other healthcare providers, patients, and caregivers regarding integrative and complementary medicine and where to find reliable information. b. Encourage open communication between patients and their providers when using non-pharmacologic complementary approaches. c. Provide education to physicians, other healthcare providers and patients on the purpose, benefits, and availability of patient navigation services. d. Increase availability of patient navigation services. e. Advocate for improved insurance coverage of integrative and complementary medicine/therapy. f. Promote the use of evidence-based protocols and best practices in complementary care for shared decision-making. g. Promote psychosocial distress screening for cancer patients. h. Promote the use of health literacy services and resources to help patients understand their diagnosis, treatment options, and care.

Diagnosis and Cancer Directed Therapy

Goal 7: Improve quality diagnosis and treatment using evidence-based patient-centered care. (Continued)

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
7.4	By 2022, increase the number of cancer patients enrolled in clinical and research trials.	TBD	TBD	a. Identify, reduce, and/or address barriers to participation in clinical and research trials. b. Enhance recruitment and retention in clinical and research trials. c. Provide education to physicians, other healthcare providers, patients, and caregivers on the availability, purpose, and benefits of clinical and research trials. d. Promote policies that support availability of, patient access to, and participation in clinical trials. e. Improve access to available, high quality educational resources describing clinical trial recruitment, eligibility, and participation. f. Advocate for increased funding of clinical translational research. g. Advocate for third party payers to promote payment for participation in clinical trials to help increase participation (include transportation to research site, etc.).



Survivorship and Palliative Care

Survivorship and palliative care improve the quality of life for patients and their family caregivers across the cancer continuum. While they share complementary goals, the focus and approach are somewhat different.

Cancer survivorship

Cancer survivorship focuses on living with, through or beyond cancer.¹⁰ A key goal of cancer survivorship is to support patients during and after treatment by helping them adopt and maintain healthy lifestyles. The National Academies of Sciences, Engineering and Medicine recommends that every cancer patient have an individualized survivorship care plan.¹² These care plans include guidelines for recording details of cancer treatment, discussing post-treatment needs, ensuring awareness of short and long term side effects, and follow-up care.¹² Plans emphasize physical, emotional, social, and spiritual needs.⁸⁴ The CoC's goal is to provide survivorship care plans to 75% of eligible Virginia patients by 2018.⁸⁵

Cancer survivors should follow physical activity and nutrition guidelines based on evidence and best clinical practices.⁸⁶ ACS

guidelines recommend that survivors avoid inactivity and return to normal physical activity after diagnosis or treatment, with medical clearance and oversight. Physical activity improves physical functioning and quality of life.⁸⁶ ACS nutrition guidelines for cancer survivors are similar to those for cancer prevention and emphasize a dietary pattern that is high in vegetables, fruits and whole grains.⁸⁷

Palliative care

Palliative care, as it relates to cancer patients, focuses on the support of patients and family caregivers who are coping with physical, emotional, social and spiritual concerns related to their cancer diagnosis. Patients may be referred to palliative care to help manage symptoms, such as pain, or to help with discussions and decisions regarding medical treatment and goals of care. Palliative care can be helpful for patients of any age and at any point in their illness trajectory from the time of diagnosis through the end of life. Families coping with difficult loss receive palliative care, provided by an interdisciplinary team of physicians, nurses, social workers and chaplains.

Hospice can be an intensification of palliative care services in the last phases (generally 6 months) of an illness and has a special emphasis on supporting patients and families through the dying and bereavement process.⁷

It is important to educate patients and their families on palliative care and end of life options throughout the continuum of care. Options include, but are not limited to, hospice care, pain and

symptom management, advance directives, physician orders for life-sustaining treatment, religious and spiritual services, and the right to refuse and discontinue treatment.^{89,90,91}

More information on palliative care is available on the [Virginia Department of Health Palliative Care](#) website.

Survivorship and Palliative Care

Goal 8: Optimize the quality of life for patients and caregivers across the cancer continuum.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
8.1	By 2022, increase awareness among the public, policymakers, survivors, healthcare providers and others about survivorship issues, palliative care and end of life care.	TBD	TBD	a. Advocate for funding to add survivorship analytics to the Behavioral Risk Factor Surveillance Survey (BRFSS). b. Work with community stakeholders and leaders to increase patient access to palliative care, hospice and survivorship services. c. Encourage oncology services providers to use the Quality Oncology Practice Initiative (QOPI) to report their performance on quality indicators and link with Patient Reported Outcomes (PROs). d. Identify gaps in statewide survivorship and palliative care resources in Virginia. e. Promote consistent statewide messaging on survivorship and palliative care. f. Provide education to physicians and healthcare providers on the tools and resources they can use to facilitate meaningful culturally sensitive conversations on palliative care.

Goal 8: Optimize the quality of life for patients and caregivers across the cancer continuum.

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
8.2	By 2022, increase number of cancer patients who have survivorship care plans.	TBD	TBD	a. Establish baseline on the number of current cancer patients receiving survivorship care plans. b. Provide education to physicians, other healthcare providers, patients and caregivers on the components of survivorship, including the use of a survivorship care plan. c. Provide education to primary care providers on the importance and use of survivorship care plans with their patients and connect them to resources as appropriate. d. Promote the benefits and use of survivorship care plans with cancer survivors and their caregivers. e. Promote systems change to integrate survivorship care plans into systems of care.

Survivorship and Palliative Care

Goal 8: Optimize the quality of life for patients and caregivers across the cancer continuum. *(Continued)*

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
8.3 Increase the percentage of Virginia cancer survivors who live a healthy lifestyle.			a. Provide education to cancer survivors and caregivers on the impact of continued tobacco use and refer to tobacco cessation resources to decrease reoccurrences and secondary cancers. b. Provide education to cancer survivors and caregivers on national nutrition and physical activity guidelines to decrease reoccurrences and secondary cancers. c. Work with community stakeholders and leaders to increase access to affordable, healthy foods in communities, places of work, and schools. d. Promote disease self-management workshops or classes to cancer survivors and caregivers. e. Advocate for coverage of nutrition, physical activity, and mental health services by private and public insurance plans.
8.3.1 Increase the percentage of cancer survivors, including skin cancer, who meet daily physical activity guidelines.	21.4% (BRFSS 2015)	22.4 %	
8.3.2 By 2022, increase the percentage of cancer survivors, including skin cancer, who consumed fruits and vegetables five or more times per day.	14.0% (BRFSS 2015)	14.7%	
8.3.3 Increase the percentage of cancer survivors, including skin cancer, who report no frequent (14 or more days) bad mental health.	89.5% (BRFSS 2016)	94%	
8.3.4 Increase the percentage of cancer survivors, including skin cancer, who report no frequent (14 or more days) bad physical health.	80.5% (BRFSS 2016)	84.5%	

Goal 8: Optimize the quality of life for patients and caregivers across the cancer continuum. *(Continued)*

Objectives		Measures		Strategies
		BASELINE (YEAR)	TARGET 2022	
8.4	Increase the Virginia palliative care grade.	76.9 (Center to Advance Palliative Care)	86.9	a. Provide education to palliative care programs on the existence and purpose of the National Palliative Care Registry (NPCR) and encourage provider reporting of relevant metrics to the registry. b. Partner with collaborating organizations to assess the palliative care needs of Virginia. c. Work with stakeholders and community leaders to increase the number of hospitals who offer palliative care services or referrals to palliative care.
8.5	Increase the number eligible patients with a primary diagnosis of cancer who enroll in hospice.	8,951 (Centers for Medicare and Medicaid Services 2016)	9,400	a. Provide education to patients and caregivers on comprehensive information regarding all legal and ethical end-of-life care options such as advance directives and living wills. b. Promote earlier hospice care transitions for qualifying cancer patients. c. Partner with the media to educate disparate populations on the benefits of earlier transition to hospice care.
8.6	Increase the number of cancer centers that offer cancer patient case management, care coordination and cancer navigation across the continuum of cancer care: outreach to end-of-life.	TBD	TBD	a. Establish a baseline for number of centers that offer cancer case management, care coordination and cancer navigation to include telehealth services. b. Promote access to cancer care management during and beyond treatment. c. Provide trainings, seminars, and educational workshops for patient navigators, social workers, community health workers, and others involved in the continuum of cancer care. d. Partner with hospitals, regional and community cancer centers, and organizations to promote navigation services. e. Promote patient navigation to link cancer survivors and caregivers to resources for financial, mental health, sexual health, spiritual health, nutrition, and physical activity needs.

Pediatric, Adolescent and Young Adult (AYA) Cancers



Pediatric cancers are often different from the types of cancers that develop in adults and in many cases not treated in the same manner. Therefore, it is important to treat children at a center that is a member of the COG where the treatment team understands the unique needs of children and teens with cancer and their families. Because childhood cancer threatens every aspect of the family's life and the possibility of a future, optimal cancer treatment must include psychosocial care.⁹² Psychosocial care has been proven to yield better management of common disease-related symptoms and adverse effects of treatment such as pain and fatigue.⁹⁵ Depression and other psychosocial concerns can affect adherence to treatment regimens by impairing cognition, weakening motivation, and reducing coping abilities.⁹² For children and families, treating the pain, symptoms, and stress of cancer enhances quality of life and is as important as treating the disease.⁹⁴

Two thirds of pediatric cancer survivors have significant late effects from treatment, which will require life-long medical management. Childhood cancer survivors are more likely than their peers to repeat a grade (21% vs 9%), attend a learning

disability or special education program (20% vs 8%) and/or have educational problems (46% vs 23%).⁹⁵ Cancer survivors in the United States report medication use for anxiety and depression at rates nearly two times those reported by the general public, likely a reflection of greater emotional and physical burdens from cancer or its treatment.⁹⁶ Adolescents with cancer experienced significantly more Health Related Hindrance (HRH) of personal goals than their healthy peers, and their HRH was significantly associated with poorer health-related quality of life, negative affect, and depressive symptoms.⁹⁷

Childhood cancer also affects family members. Financial hardship during childhood cancer affects a significant proportion of families and negatively affects overall family well-being.⁹⁸ Parents have reported significant worsening of their own health behaviors, including diet and nutrition, physical activity, and time spent engaged in enjoyable activities, after their child's diagnosis.⁹⁹

Pediatric, Adolescent and Young Adult (AYA) Cancers

Goal 9: Improve access to quality treatment and timely medical information for patients and their families.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
9.1: By 2022, increase participation on the Virginia Cancer Plan Pediatric Cancer Workgroup to include all pediatric cancer treatment centers and 4 or more non-profit organizations.	TBD	TBD	a. Establish Pediatric Cancer Workgroup with members from all pediatric cancer treatment centers and 4 or more childhood cancer related non-profit organizations. b. Conduct an annual in-person meeting, rotating geographically, with quarterly email or teleconference updates. c. Create a website for Virginians which will provide stakeholders with vetted links to appropriate resources with information on pediatric cancer diagnosis, treatment, and support services.
9.2: By 2022, obtain state revenue sources for childhood cancer research.	TBD	TBD	a. Secure funding to support cross collaboration at major university/medical centers in the Commonwealth and create connections for collaborations between all the pediatric cancer treatment centers. b. Organize Pediatric Cancer Day in the Commonwealth to engage the state legislature. c. Incorporate a focus on cancers affecting pediatric and AYA patients into the General Assembly Cancer Caucus.
9.3: By 2022, all pediatric cancer treatment centers will have a policy of providing collaboration between medical oncology and pediatric oncology for 16-21 year old AYA patients.	TBD	TBD	a. Collect baseline data from key stakeholders for how many AYA patients are treated at pediatric cancer treatment centers versus adult centers. b. Identify one pediatric oncology provider and one medical oncology provider at each pediatric cancer treatment center to champion this collaborative approach. c. Encourage health systems to establish policies related to collaboration between pediatric oncology and medical oncology to determine optimal treatment location for AYA patients based on age, cancer diagnosis, and psychosocial needs.

Pediatric, Adolescent and Young Adult (AYA) Cancers

Goal 10: Improve long-term follow-up care for childhood cancer survivors.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
10.1: By 2022, all pediatric cancer treatment centers will have survivorship programs or refer patients to dedicated survivorship programs.	TBD	TBD	a. Establish a baseline for the number of pediatric cancer treatment centers that have a dedicated survivorship program. b. Provide education and support to pediatric cancer treatment centers to facilitate individualized survivorship plans. c. Establish a baseline for the number of survivors that have an individualized survivorship plan. d. Share resources among all the pediatric treatment centers for free programs designed to facilitate survivorship plans. e. Conduct an annual survivorship conference, rotating geographically to offer better access for families, among all the pediatric cancer treatment centers. f. Advocate for fertility preservation options and reproductive endocrinology services to be offered through treatment and in the survivorship years.

Goal 11: Improve support services for pediatric patients, survivors and their families.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
11.1: By 2022, all pediatric cancer treatment centers will have a dedicated educational specialist.	TBD	TBD	a. Establish a baseline for the number of pediatric cancer treatment centers that have a dedicated educational specialist. b. Create a white paper with suggested language for back-to-school plans for patients and survivors with long-term goal of developing educational standards of care. c. Organize a biennial statewide conference for educators to familiarize them with late-effects and appropriate accommodations. d. Advocate to state legislators to restore funding to dedicated pediatric educational consultants in pediatric cancer treatment centers.

Pediatric, Adolescent and Young Adult (AYA) Cancers

Goal 11: Improve support services for pediatric patients, survivors and their families.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
11.2: By 2022, all pediatric cancer treatment centers will commit to meeting the Psychosocial Standards of Care for Pediatric Oncology.	TBD	TBD	a. Provide education to physicians, other healthcare providers, and the public regarding the Psychosocial Standards of Care for Pediatric Oncology. b. Assess each pediatric cancer treatment center's ability to implement standards with current resources and establish a baseline of current psychosocial support. c. Collaborate and share resources to meet the standards of care for all pediatric oncology patients throughout the Commonwealth regardless of geographic location.

Goal 12: Increase awareness of palliative care strategies for children with cancer among healthcare providers, patients and families.

Objectives	Measures		Strategies
	BASELINE (YEAR)	TARGET 2022	
12.1: By 2022, all pediatric cancer treatment centers will offer palliative care services.	TBD	TBD	a. Host opportunities with all Virginia pediatric cancer treatment centers to discuss collaborations and challenges in the area of palliative care. b. Conduct a needs assessment of palliative care services offered at Virginia pediatric cancer treatment centers. c. Increase awareness about palliative care strategies among physicians, other healthcare providers, patients, and families.



Evaluation Plan

A robust and comprehensive data collection and management system is essential to identify factors that influence cancer health disparities. Additionally, accurate and timely data are necessary to determine measurable and feasible objectives for cancer prevention and control, identify baseline measures, and monitor progress toward targeted outcomes.

Data sources such as the Behavioral Risk Factor Surveillance System (BRFSS)²⁶ and the Youth Risk Behavior Surveillance System (YRBS, called VYS in Virginia)¹⁰⁰ from the CDC, and the Virginia Cancer Registry (VCR), along with other Virginia Department of Health data provide valuable information related to cancer risk and burden. BRFSS and VYS collect data on a variety of risk behaviors biennially. Certain challenges limit the utility of these data sources and emphasizes the need to optimize the cancer data collection and management system for the United States and for Virginia. Such challenges include inconsistent inclusion

of optional questions in BRFSS and VYS, delay in including data on emerging factors such as LGBTQ cancer risk and burden and radon testing and remediation, underreporting of cancer diagnoses, and loss to follow-up for cancer treatment referred out of service area.

Objectives in the 2018-2022 Virginia Cancer Plan were set keeping in mind the need for baseline and follow-up data. When baseline and follow-up data were not available, strategies include developing a data collection and management system.

Progress toward meeting targets for outcome objectives under each goal will be reviewed annually. Process data will be collected to document strategies employed to address each objective and goal. Process data will include measuring progress toward the creation of data collection and management systems to provide relevant outcome data.

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Glossary

Access to care: The timely use of personal health services to achieve the best health outcomes.¹

Age-Adjusted: An age-adjusted rate is a weighted average of the age-specific (crude) rates, where the weights are the proportions of persons in the corresponding age groups of a standard population. The potential confounding effect of age is reduced when comparing age-adjusted rates computed using the same standard population.

Complementary, alternative, and integrative care: Complementary treatments are used along with standard, evidence-based medical treatment. Alternative treatments are usually used instead of standard, evidence-based medical treatment. Integrative medicine combines standard treatments with complementary or alternative approaches that have been shown to be effective and safe.²

Evidence-based: Pertaining to the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of patients.³

Hereditary cancer syndrome: Syndromes in which gene changes, or mutations, can be passed down from parent to child and increase a person's risk of developing cancer.⁴

Fertility preservation: Access to fertility preservation services (egg harvesting, sperm banking) early in treatment, as well as financial resources for assistance in covering expenses.⁵

Financial toxicity: Financial difficulties experienced by patients due to out-of-pocket costs (not covered by health insurance, such as copayments and deductibles).⁶

Hospice: Provides care for people in the last phases of an incurable disease so they are as comfortable as possible. Services provided by hospice care include: pain and symptom control, home care and inpatient care, spiritual care, family meetings, care coordination, respite care, and bereavement care.⁷

Navigation services: Services that offer individualized assistance to patients, families, and caregivers to overcome barriers within the health care system. These services offer access to medical and psychosocial care from pre-diagnosis through the entire cancer experience.⁸

Palliative care: An approach to care that focuses on improving the quality of life for patients and their caregivers coping with a life-threatening illness or injury. Palliative care centers on preventing, diagnosing, and treating physical, emotional, social and spiritual sources of distress.⁹

Survivorship (advocacy definition): Living with, through and beyond a cancer diagnosis.¹⁰

Survivorship (clinical definition): Focuses on the health and life of a person with cancer post treatment until the end of life.¹¹

List of Acronyms

ACS	American Cancer Society
AYA	Adolescent and Young Adult
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
CACV	Cancer Action Coalition of Virginia
NCCCP	National Comprehensive Cancer Control Program
CCG	Center for Cancer Genomics
CDC	Centers for Disease Control and Prevention
CoC	Commission on Cancer
COG	Children's Oncology Group
EHR	Electronic Health Records
ENDS	Electronic Nicotine Delivery Systems
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
HIPAA	Health Insurance Portability and Accountability Act
HPV	Human Papillomavirus

HRH	Health Related Hindrance
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Questioning/Queer
NCCN	National Comprehensive Cancer Network
NCCRT	National Colorectal Cancer Roundtable
NCI	National Cancer Institute
NPCR	National Palliative Care Registry
PRO	Patient Reported Outcome
PSA test	Prostate-Specific Antigen Test
QOPI	Quality Oncology Practice Initiative
TBD	To be determined
USPSTF	United States Preventive Services Task Force
UV	Ultraviolet
VaCPNN	Virginia Cancer Patient Navigation Network
VCR	Virginia Cancer Registry
VDH	Virginia Department of Health
VYS	Virginia Youth Survey



Cancer Action Coalition of Virginia

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