



New York State
Comprehensive
Cancer
Control Plan
2018-2023

New York State



Cancer Consortium

www.nyscancerconsortium.org



Department of Health

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April 2018

Dear Colleague:

Since New York State's first Comprehensive Cancer Control Plan (Plan) was released in 2003, our State has experienced advances in cancer prevention, early detection, treatment, and support for survivors. Yet, the burden of cancer still weighs heavily and cancer continues to be the second leading cause of death in New York State. Nearly 110,000 New Yorkers are diagnosed with cancer every year and one in four deaths in our State is due to cancer.

The 2018-2023 New York State Comprehensive Cancer Control Plan was developed by the New York State Cancer Consortium to serve as a cancer prevention and control roadmap for individuals and organizations interested in reducing the burden of cancer in our State. The Plan outlines measurable objectives and suggested strategies focusing on seven priority areas:

- Cancer-related health equity
- Health promotion and cancer prevention
- Early detection
- Treatment
- Survivorship
- Palliative care
- Health care workforce

Many of these objectives are aligned with New York State's Health Improvement Plan, the Prevention Agenda, the blueprint for state and local action to improve the health of all New Yorkers.

No one individual or organization can be responsible for all the work contained in this Plan. We can and must work together to decrease cancer suffering and mortality. Our State is home to some of the nation's leading cancer centers, health care settings, public health institutions and cancer support networks. Through our collective efforts, we have a tremendous opportunity to prevent and minimize the impact of cancer in New York State.

I applaud and thank all the experts who generously gave their time and knowledge to update this Plan. I urge all readers to use the objectives and strategies contained here, in collaboration with others, to curb the effects of cancer on our families, friends, colleagues, and communities.

Sincerely,

Howard A. Zucker, M.D., J.D.
Commissioner of Health

Table of Contents

Acknowledgements	1
Purpose of the 2018-2023 Comprehensive Cancer Control Plan	3
About the New York State Cancer Consortium.....	4
Section I: Snapshot of Cancer in New York.....	5
Demographics of New York.....	5
Cancer in New York.....	6
Cancer-Related Health Disparities in New York	11
Section II: Priority Areas for Action	15
II-1: Cancer-Related Health Equity for All New Yorkers	15
II-2: Health Promotion & Cancer Prevention	18
II-2.1: Alcohol Use	18
II-2.2: Environmental and Occupational Exposure	20
II-2.3: Genetics & Family Health History	23
II-2.4: Physical Activity, Nutrition, and Breastfeeding	25
II-2.5 Tobacco Use.....	29
II-2.6 Ultraviolet Radiation	32
II-2.7 Vaccine-Preventable and Infectious Disease-Related Cancers	35
II-3: Early Detection	39
II-4: Treatment.....	43
II-5: Palliative Care	47
II-6: Survivorship.....	49
II-7: Healthcare Workforce.....	52
Appendix A: What New Yorkers Can Do to Reduce the Burden of Cancer	55
Appendix B: New York State Cancer Consortium General Membership.....	63
Appendix C: New York State Cancer Consortium Steering Committee.....	65
Appendix D: About the 2018-2023 Comprehensive Cancer Control Objectives	67
Reference List.....	73

Acknowledgements

The New York State Cancer Consortium (Consortium) wishes to acknowledge and thank the Consortium Steering Committee (full list in Appendix C), numerous Consortium general members who provided anonymous input during the public comment period, and the following individuals who provided their expertise, time, and commitment to updating the New York State (NYS) Comprehensive Cancer Control Plan (Plan):

Cindy Borassi

Colon Cancer Challenge Foundation

Noel Brewer, PhD

University of North Carolina, Chapel Hill

Mary Ruth Buchness, MD

New York State Society of Dermatology

Tammy Calise, DrPH

New York State Obesity Prevention Center for Excellence

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Aubrey Veneruso, PA-C

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Thomas Weber, MD, FACS

State University of New York at Downstate

**Sidney Winawer, MD, DrSc, FACP, MACG,
FASGE**

Memorial Sloan Kettering Cancer Center

Jason Wright, MD

Columbia University

Purpose of the 2018-2023 Comprehensive Cancer Control Plan

The overarching goal of cancer prevention and control efforts in NYS is to reduce the burden of cancer by decreasing the number of new cancer cases, decreasing the number of cancers diagnosed at late stages, improving the quality of life of those diagnosed with cancer and decreasing the number of deaths caused by cancer. To achieve this, the NYS 2018-2023 Comprehensive Cancer Control Plan (Plan) serves as a guide for community members, policy makers, advocates, healthcare professionals and others to use as they engage in efforts in their local communities and across the state.

The 2018-2023 Plan builds upon the 2012-2017 Plan and is organized around seven priority areas for action. Each priority area contains background information about the status of work in the area; objectives with which to measure improvements; suggested evidence-based or promising practices to make improvements; and other related resources.

Priority Areas for Action



Cancer-Related Health Equity - All New Yorkers will have the opportunity to make choices that lead to good health, live in social and physical environments that promote good health, and have access to quality healthcare.



Health Promotion & Cancer Prevention - All New Yorkers will have access to evidence-based information, resources and opportunities to understand and reduce their risk of cancer.



Early Detection - All New Yorkers will receive age-appropriate, evidence-based, guideline-driven screening services for the early detection of cancer.



Treatment - All New Yorkers diagnosed with cancer will have equitable access to high quality cancer care.



Palliative Care - All New Yorkers will have access to evidence-based, evidence-informed and guideline-driven patient and family-centered palliative care services.



Survivorship - All New Yorkers will have equal access to evidence-based, evidence-informed and guideline-driven services and appropriate, high-quality follow-up care that supports cancer survivors, families and caregivers.



Healthcare Workforce - All New Yorkers will have access to adequate numbers of primary care and specialty providers with demonstrated competencies in cancer prevention and control.

Measurable Objectives

Measurable objectives include baseline measures derived from currently established, reliable data sources. These measures provide a basis for tracking and monitoring changes in priority areas in cancer prevention and control and for evaluating the collective impact of statewide cancer prevention and control efforts. Results of the measurable objectives are expected to change or be affected as a result of implementing the suggested strategies contained within each section of the Plan. All 2018-2023 measurable objectives in the Plan are listed in Appendix D.

An interactive online dashboard (www.health.ny.gov/cancercontroldashboard) established by the NYS Department of Health serves as a key source for monitoring statewide progress on Plan objectives.

Suggested Strategies

There are evidence-based strategies, evidence-informed strategies, best practices, and promising practices listed in each priority area section of the Plan. The lists are not exhaustive; rather, they provide suggested approaches for Plan users to consider.

For More Information

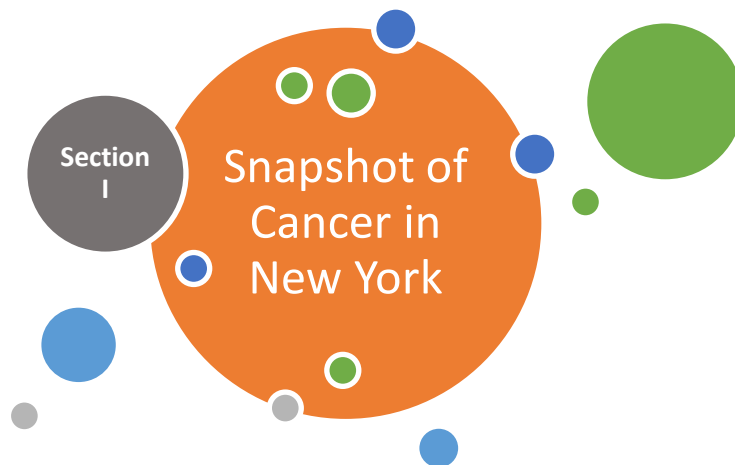
Additional publications, websites, and links to relevant organizations may be found at the end of each section.

About the New York State Cancer Consortium

The New York State (NYS) Cancer Consortium (Consortium) is a voluntary network of over 200 individuals and organizations that collaborate to address the cancer burden in NYS (Appendix B). Members are from the public and private sectors and have missions aligned with reducing cancer incidence and mortality. With leadership from the Consortium Steering Committee (Steering Committee, Appendix C) and support from the NYS Department of Health, the Consortium facilitates implementation of the Plan.

Individuals and organizations interested in addressing the burden of cancer in NYS are encouraged to join the Consortium and participate in critical committee and action team work which addresses the priority areas outlined in the NYS Comprehensive Cancer Control Plan.

Visit www.nycancerconsortium.org to learn more.



Introduction – The Burden of Cancer

Each year, nearly 110,000 New Yorkers learn they have cancer, and around 35,000 succumb to the disease, making it the second leading cause of death in the state. In 2014, the overall cancer incidence rate of 476.5 cases per 100,000 persons in New York was the fifth highest among the 50 states and the District of Columbia, significantly above the national average of 436.6 cases per 100,000.¹

Cancer affects not only the people with the disease, but their families, caregivers and entire communities. People with cancer must contend with the effects of the disease and its treatment on their health, well-being, family and social relationships and economic productivity. Accessing and affording quality healthcare can also be a struggle for many families. Issues related to cancer and cancer control account for significant allocations of the resources of many community, public health and healthcare organizations.

The burden of cancer is not distributed evenly. Risks of developing or dying from various cancers often differ depending on race or ethnicity and socioeconomic status. Furthermore, many health disparities are caused by the complex relationship of historical and current policies, influences, experiences, and norms affecting where and how people live, work, learn, and play. In addition, factors such as economic resources, insurance status, language, and geographic location may affect access to preventive and diagnostic services and medical treatment.

Demographics of New York

Extremes of population density:

- More than 69,000 persons per square mile in Manhattan (New York County)
- 2.8 persons per square mile in Hamilton County (Adirondack Park)

New York is notable for both its size and its diversity. With a population approaching 20 million², New York is the fourth most populous state in the nation, after California, Texas and Florida. These 19.8 million persons are spread out over a land area of 47,126 square miles, the largest in the northeast.

In 2014...

- 109,277 New Yorkers were diagnosed with cancer
- 35,388 New Yorkers died of cancer
- 1,013,100 (estimated) living New Yorkers had ever been diagnosed with cancer

People in New York, however, are not spread out evenly. Although much of New York's population is concentrated in the metropolitan area comprising New York City and its surrounding areas, there are sizeable rural regions upstate where distance can be a barrier to accessing health services.

New York is home to persons of various races and ethnicities in significant numbers. In 2015, 56% of the population was estimated to be non-Hispanic white, 19% Hispanic (of any race), 14% non-Hispanic black, and 8% non-Hispanic Asian.³ In addition, 23% of the population was foreign born⁴, and 30% spoke a language other than English. Cultural factors associated with race, ethnicity and national origin can have an important impact on cancer risk factors, attitudes towards disease, and interactions with healthcare providers.

Access to medical care is an important determinant of cancer-related morbidity and mortality. The New York State of Health reports that since the Marketplace opened in 2013, the rate of uninsured New Yorkers has declined from 10% to 5%.⁵ In December 2016, there were 3.1 million New Yorkers ages 21 to 64 years enrolled in Medicaid⁶, or about 26% of the population in this age range.

Other population characteristics affect the burden of cancer in NYS and measures taken to address it.

- 15.4% of New Yorkers (approximately 3.0 million people) live in households with incomes below the federal poverty level⁷,
- 65.8% of New Yorkers ages 25 years and over (approximately 8.8 million people) are educated at the high school level⁸,
- 14.4% of New Yorkers ages 25 years and over (approximately 1.9 million people) do not have high school diplomas⁹, and
- 11.1% of New Yorkers (approximately 1.6 million people) report poor mental health¹⁰.

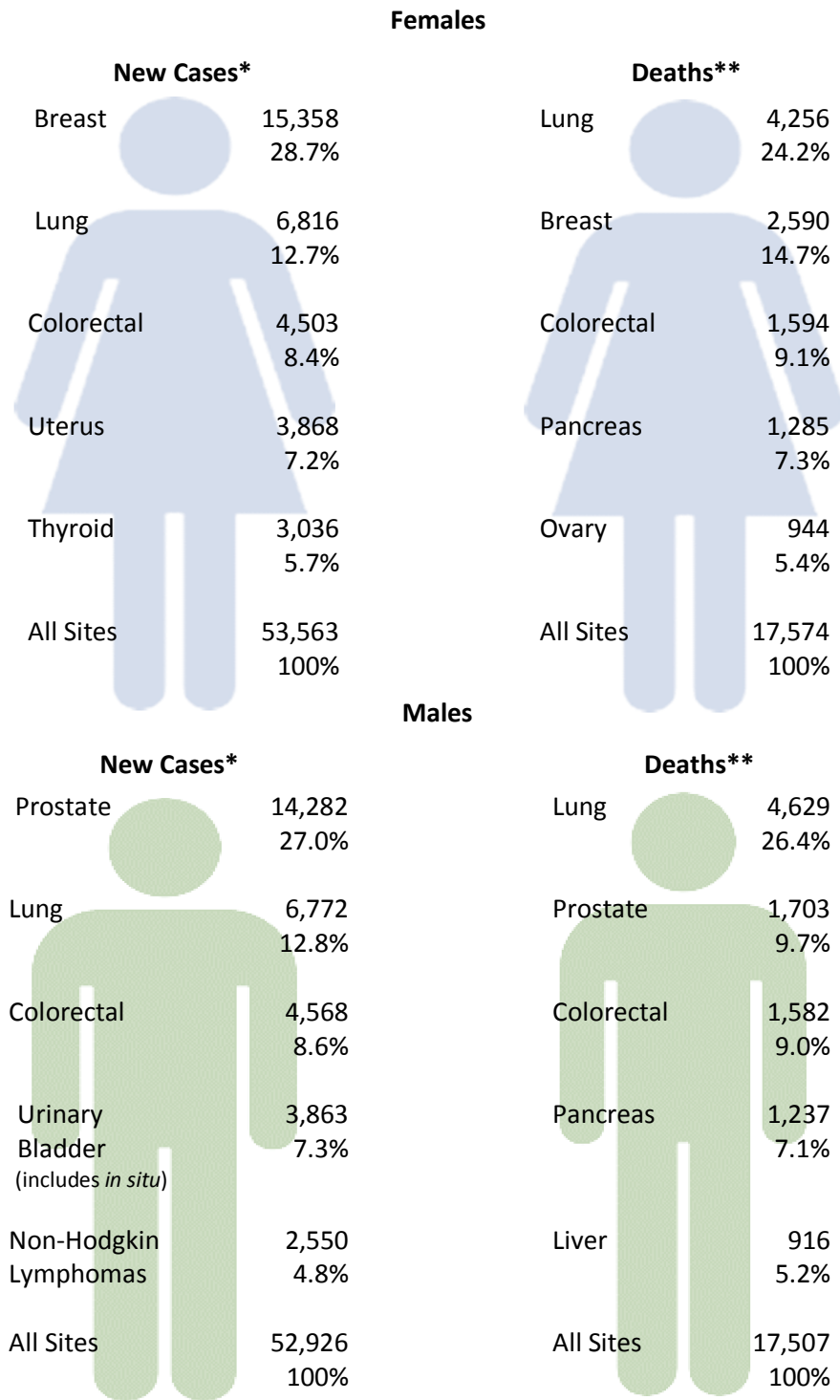
All of these features of New York's population affect cancer prevention and control efforts. Public health and community organizations, healthcare providers, policy makers, advocates and health systems need to ensure that cancer services across the continuum of care are available and accessible for all populations. Particular efforts to promote health equity among the most vulnerable populations are needed.

Cancer in New York

Leading types of cancer in males and females

Cancer is not a single disease, but a collection of over 100 different diseases, each with its own set of causes, occurrence pattern, natural history, effective treatments, and outlook for survival. Although cancer occurs in both males and females, the types of cancer males and females are most likely to develop, and most likely to die from, are different. The five most frequently diagnosed types of cancer and the five leading causes of cancer deaths are illustrated in Figure 1 for males and females.

Figure 1. Most frequently diagnosed cancer types and causes of cancer death in males and females, New York State, 2010-2014



*Average annual incident cases, 2010-2014

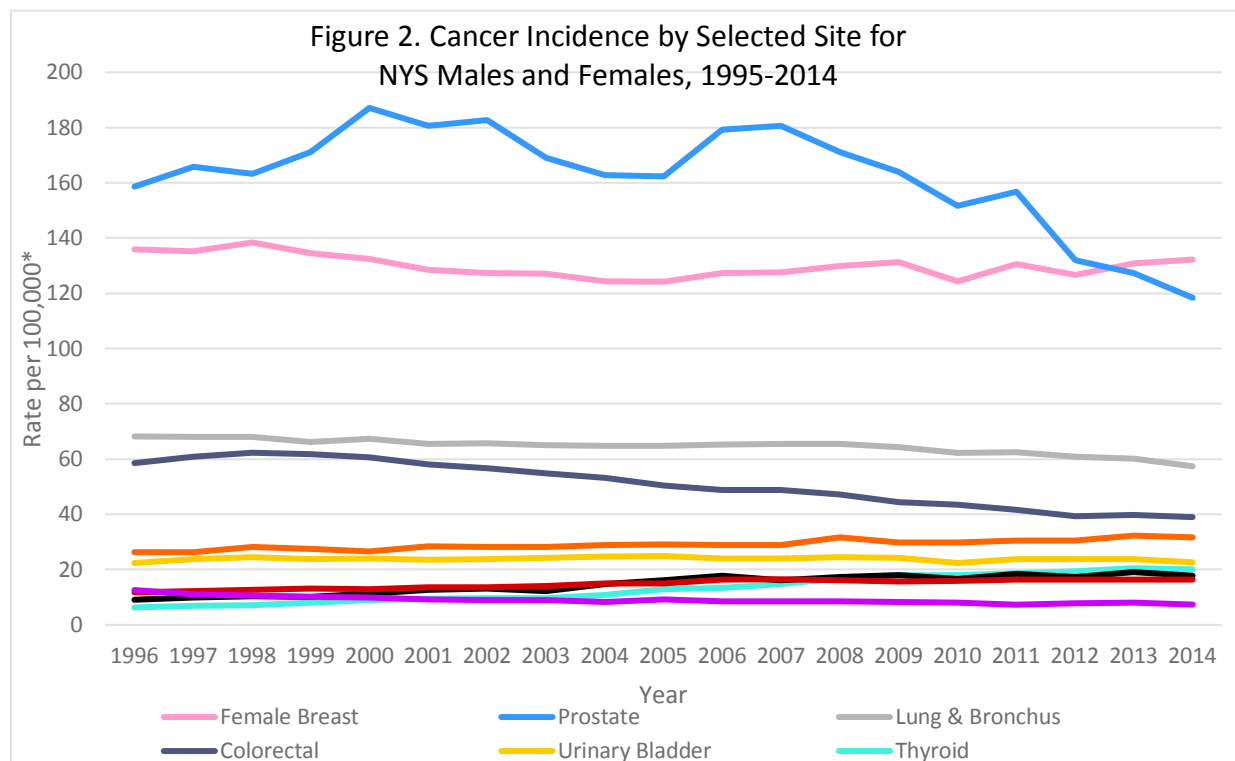
**Average annual deaths, 2010-2014

Source of data: New York State Cancer Registry

Trends over time

The number of people in New York diagnosed with cancer each year has been increasing steadily. In part, this is due to increases in New York's elderly population, persons who are more likely to develop cancer. To account for differences in the size and age distribution of populations, statisticians calculate age-adjusted cancer rates. Age-adjusted cancer incidence and mortality rates are measures of the risk of developing or dying from cancer that can be compared across populations, regardless of their age distributions.

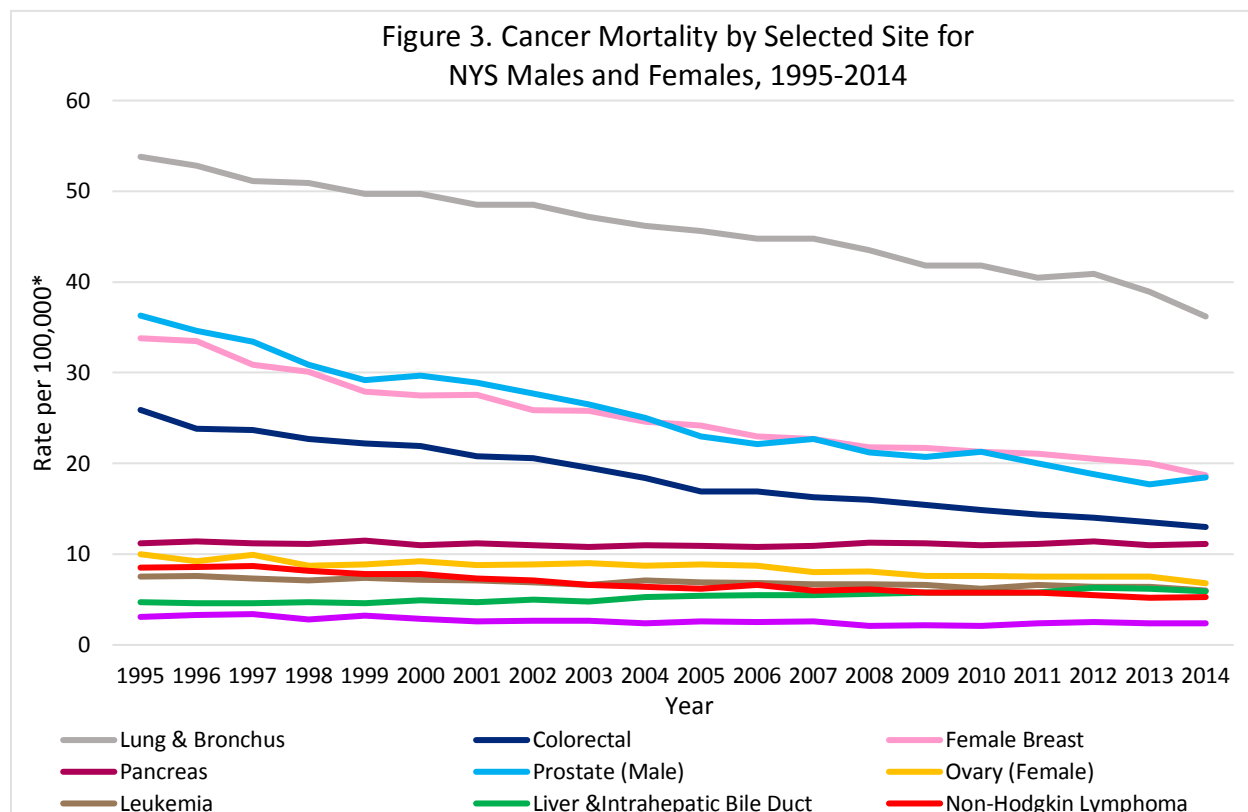
Cancer rates change over time. Cancer incidence rates can change due to changes in the prevalence of cancer risk factors and the underlying occurrence of the disease, but also because of changes in cancer screening and clinical practices. Cancer mortality rates are affected by the occurrence of the disease in the first place, and also by the effectiveness of screening and treatment. Figure 2 tracks the most frequently diagnosed cancers and Figure 3 tracks the most frequent causes of cancer death in males and females combined (except where noted) in New York State between 1995 and 2014. Cervical cancer is included as well due to its relevance for cancer screening.



*Age-adjusted to the 2000 U.S. standard million population
Source of data: New York State Cancer Registry

- Prostate cancer incidence rates have been decreasing since 2009, with female breast cancer becoming the most frequently diagnosed cancer in New York State in 2013.
- For males and females combined, rates of malignant melanoma of the skin and thyroid cancer are increasing. The rate of kidney cancer increased between 1995 and 2007, but has now leveled off. In females, the rate of cancer of the uterus is increasing.

- The incidence of lung cancer has been decreasing since 2008, and colorectal cancer has been decreasing since 2000. The incidence of cervical cancer in females has been decreasing since 1996.



**Age-adjusted to the 2000 U.S. standard million population*

Source of data: New York State Cancer Registry

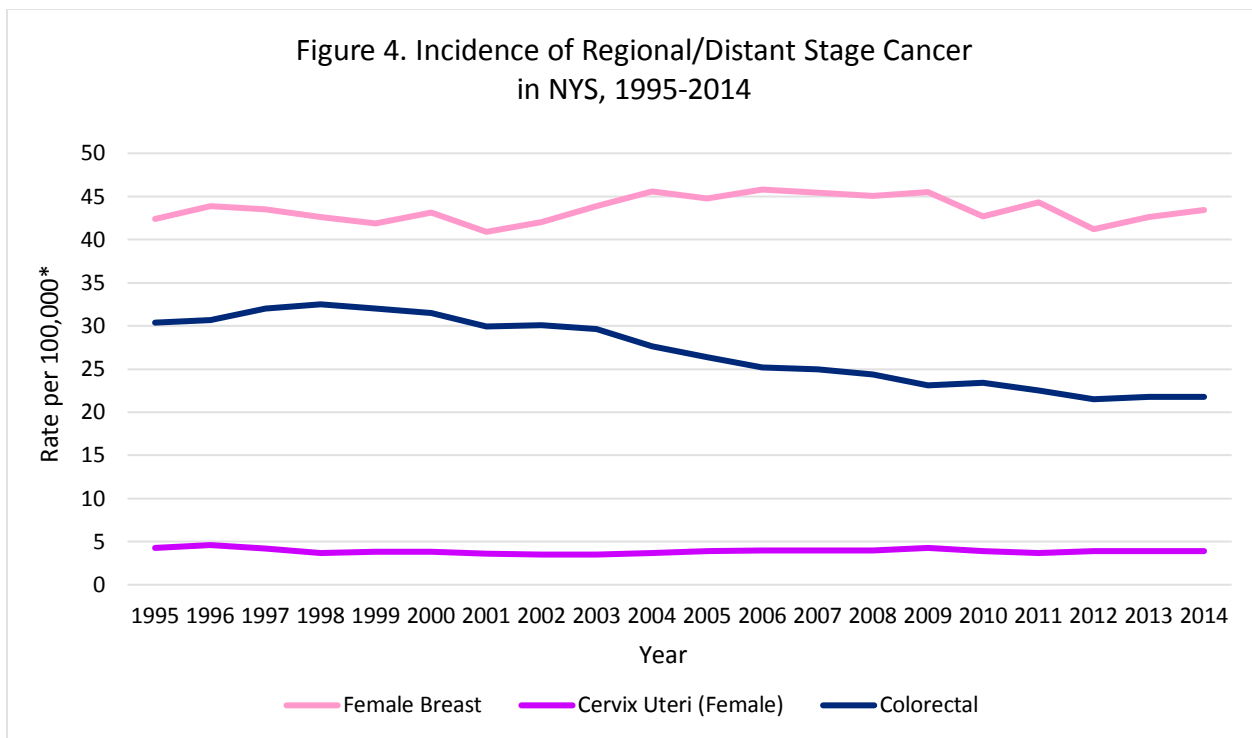
- Death rates for the leading causes of cancer death, including lung, prostate, female breast, and colorectal cancers, have been steadily decreasing. Death rates for non-Hodgkin lymphoma, and, in females, ovarian and cervical cancers have also been declining.
- Liver cancer mortality rates are increasing.

Stage of cancer at the time of diagnosis

Stage of disease refers to how far a cancer has spread at the time it is diagnosed. Generally, the earlier a cancer is diagnosed, the greater the chances for survival. Cancers diagnosed at a local stage of disease are confined to the organ where they started growing, while regional stage disease has spread to nearby organs or lymph nodes. Cancers diagnosed at a distant stage, where cancerous cells or tumors have spread to other parts of the body, confer the least favorable outlook.

Cancer screening is intended to detect cancers at their earliest stages, when treatment is most effective. Screening has the effect of increasing the proportion and rate of early stage cancers, but ultimately reducing cancer deaths. Some screening tests, such as colonoscopy for colorectal cancer and Pap smears for cervical cancer, can also detect pre-cancerous lesions, which are removed before they become cancer. This has the effect of reducing the incidence of cancers at all stages and also reducing cancer deaths. In either case, increased utilization of cancer screening would be expected to reduce the

incidence of cancers diagnosed at later stages. Figure 4 illustrates changes with time in the incidence of regional- and distant-stage disease for three cancers for which screening tests have been widely used (female breast cancer, cervical cancer and colorectal cancer). Screening of high-risk individuals for lung cancer by means of helical low-dose computed tomography was first recommended in 2011, and the procedure has been covered by New York’s Medicaid program since 2015.



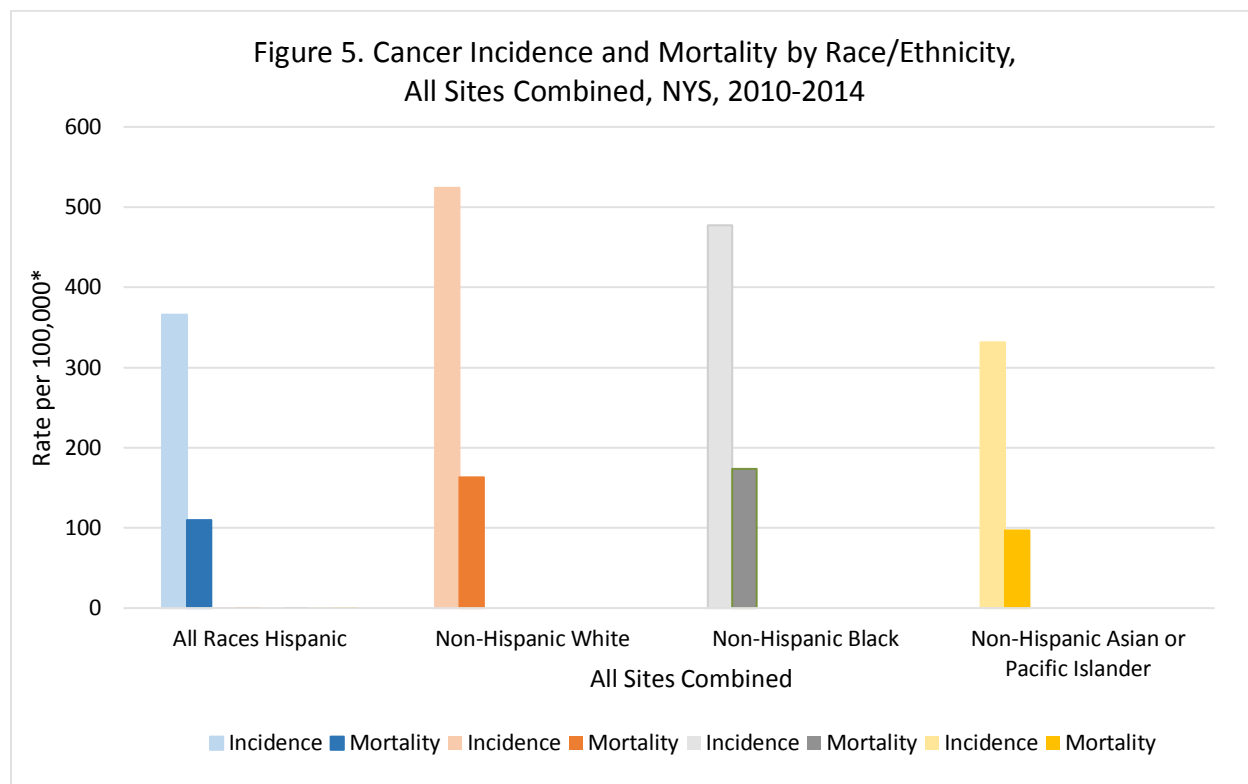
**Age-adjusted to the 2000 U.S. standard million population*

Source of data: New York State Cancer Registry

- The diagnosis rate of regional and distant stage colorectal cancer declined between 1999 and 2012.
- Regional and distant stage female breast cancer rates declined between 1996 and 2001, and between 2004 and 2014.
- Regional and distant stage diagnosis rates for cervical cancer declined between 1996 and 2002, and have remained steady since then.

Cancer-Related Health Disparities in New York

The National Cancer Institute defines cancer-related health disparities as “differences in the incidence, prevalence, mortality and burden of cancer and related adverse health conditions that exist among specific population groups. These groups may be characterized by gender, age, race, ethnicity, education, income, social class, disability, geographic location, or sexual orientation.”¹¹ Information on cancer outcomes in different groups can be used to focus cancer control efforts on those in greatest need, and to help understand and address the causes of these disparities. Figures 5 and 6 illustrate differences in cancer incidence and mortality for all types of cancer combined and for selected cancer types in New Yorkers of different races and ethnicities.

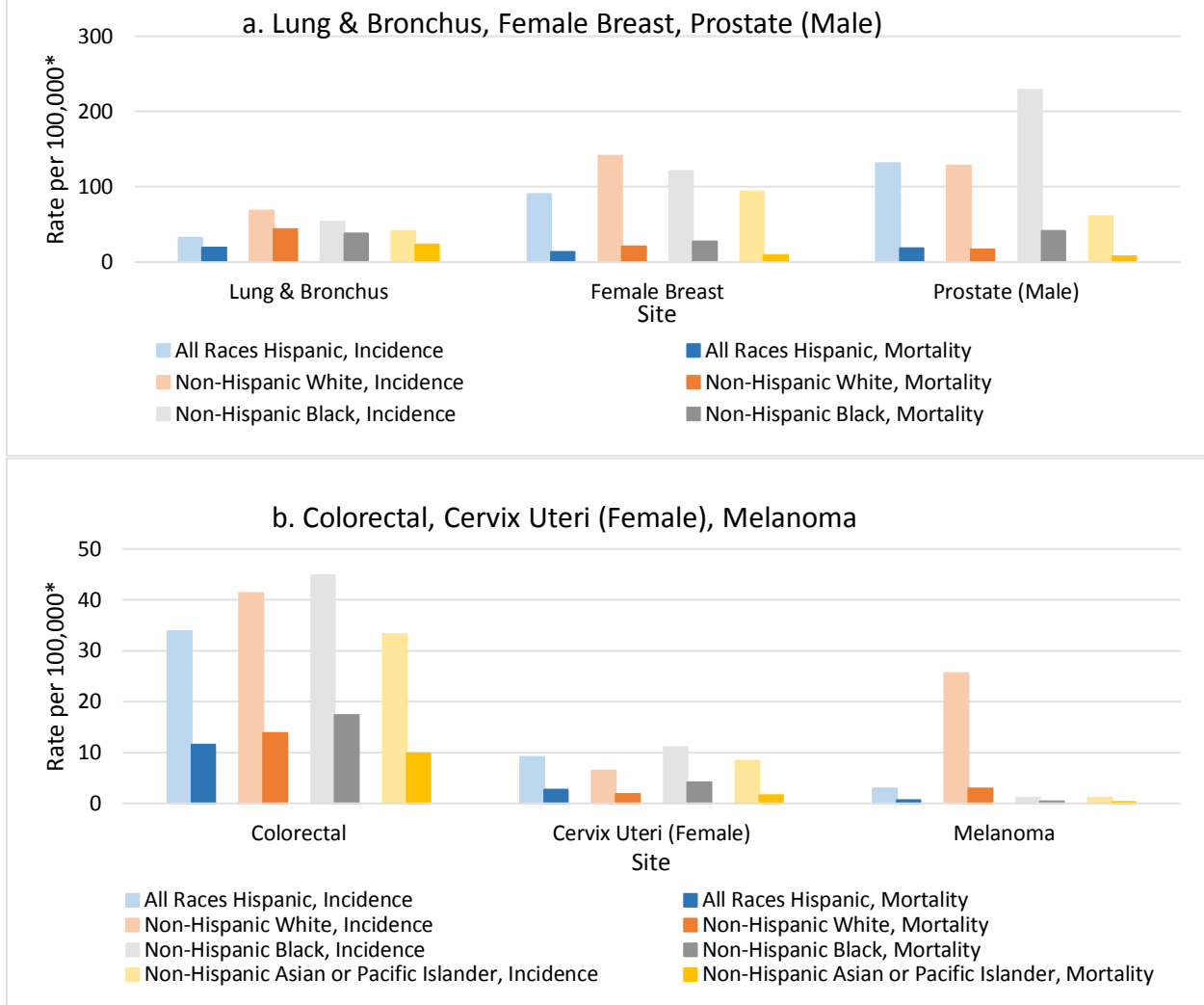


**Average annual, age-adjusted to the 2000 U.S. standard million population*

Source of data: New York State Cancer Registry

- Non-Hispanic whites have the highest rate of newly diagnosed cancers in New York State.
- Non-Hispanic blacks have the highest rate of death from cancer in New York State.
- Cancer incidence and mortality are lower in persons of Hispanic origin, and non-Hispanic Asians and Pacific Islanders.

Figure 6. Cancer Incidence and Mortality by Race/Ethnicity
NYS, 2010-2014



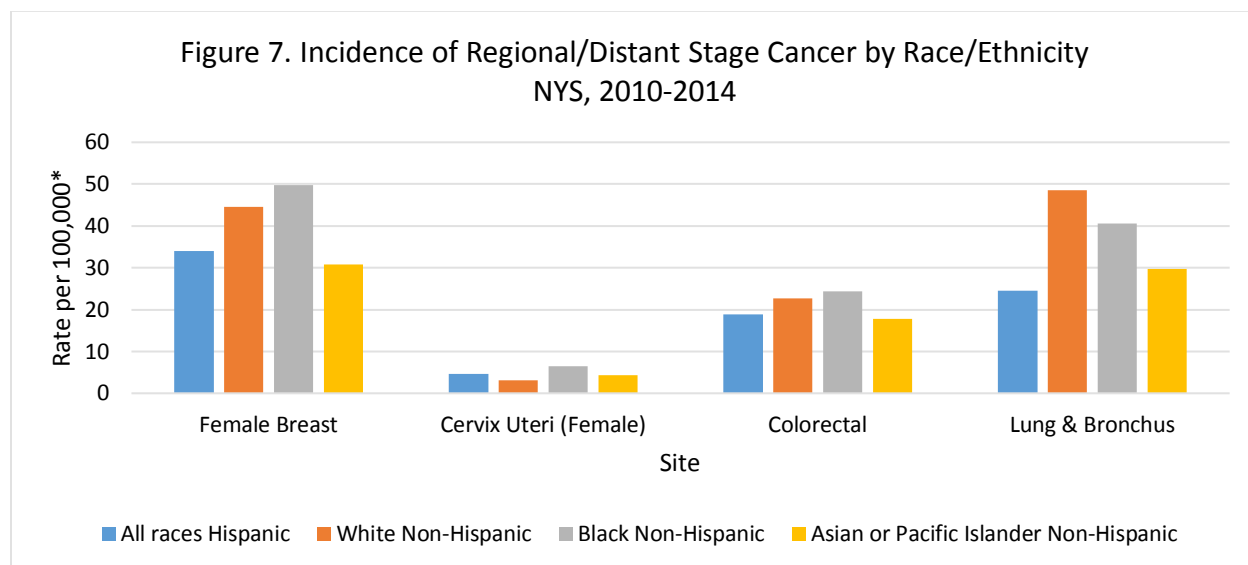
*Average annual, age-adjusted to the 2000 U.S. standard million population

Source of data: New York State Cancer Registry

Different cancers have different patterns of incidence and mortality by racial and ethnic group.

- Non-Hispanic black males have, by far, the highest rates of prostate cancer incidence and mortality of any racial or ethnic group.
- The incidence of breast cancer is highest among non-Hispanic white women, while mortality is highest among non-Hispanic black women.
- Lung cancer incidence and mortality rates are highest among non-Hispanic whites.
- While non-Hispanic blacks experience the highest rates of death from colorectal cancer, incidence of this cancer is only slightly greater than in non-Hispanic whites.
- Cervical cancer incidence and mortality are higher among non-Hispanic black and Hispanic women.
- Rates of incidence and mortality from melanoma, a skin cancer, are very low among Hispanics, non-Hispanic blacks, and non-Hispanic Asians and Pacific Islanders.

Disparities also exist in the incidence of regional and distant stage disease. While some disparities may reflect the underlying occurrence of the disease, identification of groups with disproportionate incidence of regional and distant stage disease may help to inform strategies for cancer screening. Figure 7 illustrates racial and ethnic differences in the incidence of regional and distant stage disease for four cancers for which screening is currently recommended.



**Average annual, age-adjusted to the 2000 U.S. standard million population*

Source of data: New York State Cancer Registry

- The non-Hispanic black population experiences higher incidence rates of regional and distant stage disease for female breast cancer, cervical cancer in females, and colorectal cancer.
- The non-Hispanic white population experiences higher incidence rates of regional and distant stage disease for lung cancer, while the Hispanic population has the lowest incidence rate.
- The non-Hispanic white population has the lowest incidence rate of regional and distant stage disease for cervical cancer.
- The non-Hispanic Asian and Pacific Islander population has the lowest incidence rate for regional and distant stage female breast and colorectal cancers.
- Disparities in the incidence of regional and distant stage cancer generally parallel disparities in cancer mortality.

The information presented above demonstrates both the magnitude and the multifaceted nature of the burden of cancer in New York. Along with an understanding of the sociodemographic and geographic context within which cancers occur, this information can be used to inform and improve efforts at cancer control.

More data on cancer in New York may be found on the
New York State Cancer Registry website:
www.health.ny.gov/statistics/cancer/registry



II-1: Cancer-Related Health Equity for All New Yorkers

All New Yorkers will have the opportunity to make choices that lead to good health, live in social and physical environments that promote good health, and have access to quality healthcare.

The risk of developing or dying from cancer is linked to a number of determinants of health, such as age, disability, ethnicity, gender, geographic location, race, sexual orientation, socioeconomic status, and other factors which contribute to an individuals’ health.

According to the National Cancer Institute, lack of health insurance and low socio-economic status (SES) are two factors contributing most to cancer health disparities.¹² For example, uninsured persons are more likely to be diagnosed with cancer at a later stage¹³; and people who are gay, lesbian, bisexual, transgender, or queer (LGBTQ) who are less likely to have health insurance or a regular source of healthcare are more likely to report experiencing unmet medical needs.¹⁴ SES (more than race or ethnicity) both predicts a person’s likelihood of access to education, certain occupations, health insurance, and certain living conditions (such as exposure to environmental toxins), and influences the prevalence of behavioral risk factors for cancer.¹⁵



Disparities also occur when certain populations experience improvements in cancer-related outcomes compared to other populations where improvements are delayed.¹⁶ For example, even though cancer incidence rates are lower in rural areas nationally (compared to urban areas), death rates are higher for several cancers.¹⁷

Public health and community organizations, healthcare providers, policy advisors, advocates, and health systems need to ensure that services are available and accessible for all populations across the continuum of cancer care, with attention to vulnerable populations.

Public health and community organizations, healthcare providers, policy advisors, advocates, and health systems need to ensure that services are available and accessible for all populations across the continuum of cancer care, with attention to vulnerable populations.

This may include addressing cultural perceptions and previous experiences with the healthcare system or apprehension about having certain medical procedures. Health equity can be achieved by: focusing on communities at greatest risk; building multi-sector partnerships that create opportunities for healthy communities; increasing access to preventive services in both clinical and community settings; implementing strategies that are culturally, linguistically, and age-appropriate; and evaluating strategies and interventions to ensure effective progress is achieved.¹⁸

Data on cancer-related health disparities in NYS can be found in the Snapshot of Cancer in New York section (data in charts reflect disparities based on race and ethnicity only). In addition, more information and select measurable objectives related to disproportionately affected populations can be found in each Priority Area for Action.



Suggested Strategies

- Use data to monitor population health and measure disparities, including the collection of information about disparately affected populations based on race, ethnicity, sexual orientation and gender identity (SOGI), and people with disabilities¹⁹ to promote programs and policies which both help document and address health disparities.
 - Cultivate state and local leadership to develop community-informed interventions, organizational structures and supports to address inequities.
 - Endorse and actively promote cultural competency, health literacy, and healthcare in the context of age, culture, disability, religion, sex, and SOGI.
- Increase the diversity of the oncology health workforce to better match the composition of the New York population and reflect any disparate populations affected.
 - Increase marketing, outreach, and education for services targeting and tailored to disparate groups experiencing higher rates of specific cancers.
 - Produce culturally appropriate materials for many populations, including translations of materials into other languages and images that resonate in a variety of cultures.
 - Establish partnerships with multiple organizations comprised of and serving disparately impacted populations to provide technical assistance and feedback in the development and implementation of campaigns and materials.
 - Strengthen existing and new resources that work to reduce disparities (such as service directories, funding, and programs that do not currently exist for specific groups) and disseminate these resources.
 - Improve language access including interpretation services for Limited English Proficiency (LEP); communication services for people who are deaf, hard of hearing, or visually impaired in all settings.
 - Increase access to healthcare services through accessible facilities, examination tables, weight scales, and screening equipment; as well as produce resources that help people with disabilities know which medical facilities have accessible facilities and services.

There are 3 measurable objectives in the Plan specifically focused on disparities, including: Tobacco and Early Detection.



For More Information

Centers for Disease Control and Prevention – Health Disparities in Cancer:

www.cdc.gov/cancer/healthdisparities/index.htm

National Cancer Institute – National Center to Reduce Cancer Health Disparities:

www.cancer.gov/about-nci/organization/crchd

www.cancer.gov/about-nci/organization/crchd/cancer-health-disparities-fact-sheet

www.cancer.gov/about-cancer/understanding/disparities/what-are-cancer-disparities-infographic

NYS Cancer Registry:

www.health.ny.gov/statistics/cancer/registry

LGBT HealthLink – Best and Promising Practices Throughout the Cancer Continuum:

www.lgbthealthlink.org/Cancer-Best-Practices

II-2: Health Promotion & Cancer Prevention

All New Yorkers will have access to evidence-based information, resources and opportunities to understand and reduce their risk of cancer.



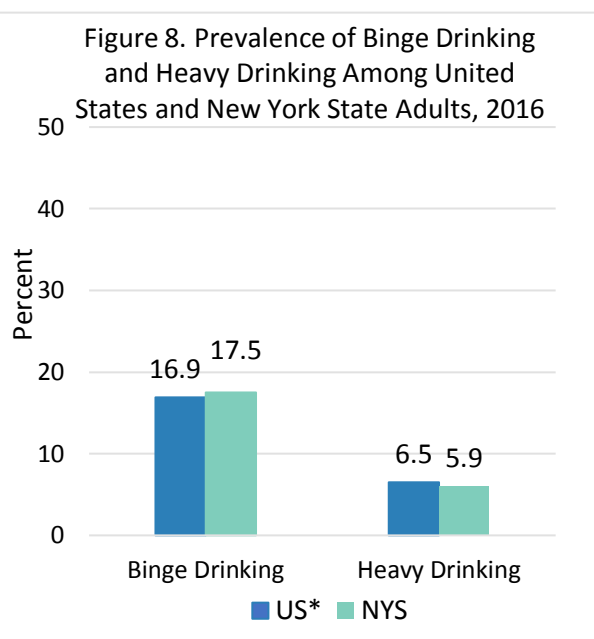
The number of new cancer cases can be reduced and many cancer deaths can be prevented. The NYS Cancer Consortium recognizes the value of cancer prevention to save lives and reduce the burden of cancer in NYS. Key cancer prevention topic areas are organized alphabetically in this section of the Plan.

II-2.1: Alcohol Use

Of known cancer risk factors, alcohol use is one of the most prevalent among U.S. adults. Even though the International Agency for Research on Cancer classifies alcohol as a Group 1 carcinogen, more than half of all adults in New York drink alcohol²⁰, sometimes in excessive amounts. Excessive drinking, as defined by the CDC, includes binge drinking and heavy drinking, as well as any alcohol use by pregnant women and youth under the legal age. Binge drinking is defined as consuming four drinks or more for women and five drinks or more for men on a single occasion, generally within about two hours. Approximately 17.5% of NYS adults ages 18 years and older binge drank in 2016.²¹ Heavy drinking is defined as consuming eight drinks or more per week for women and 15 or more drinks per week for men.

Approximately 5.9% of NYS adults ages 18 years and older reported heavy drinking in 2016 (Figure 8).²²

Drinking alcohol increases an individual's risk for several cancer types, including: head and neck, esophageal, liver, and breast cancer in women.²³ An estimated 4% of all cancer deaths in the United States (U.S.) can be attributed to alcohol. Of these alcohol-attributable cancer deaths, 48 to 60% occurred among those who consumed, on average, three or more drinks per day.²⁴ However, even light drinking (up to 1 drink a day) can confer some risk for certain cancers, including those of the female breast, oral cavity and pharynx, and esophagus.²⁵



**Median percent; includes data from all 50 states and the District of Columbia
Source of data: NYS Behavioral Risk Factor Surveillance System (BRFSS)*

An estimated 4% of all cancer deaths in the United States can be attributed to alcohol. Of these alcohol-attributable cancer deaths, 48 to 60% occurred among those who consumed, on average, three or more drinks per day.

In addition, drinking and smoking together intensifies cancer-causing properties of each substance and poses an even greater risk for certain cancers (such as throat and mouth cancers) than the effect of either drinking or

smoking alone. Only 43% of Americans recognize that alcohol consumption is a risk factor for cancer, per a survey conducted by the American Institute for Cancer Research (AICR).²⁶

The CDC and AICR²⁷ recommend avoidance of alcohol consumption to reduce long-term cancer risk. The American Cancer Society recommends if individuals choose to drink alcohol, it should be done in moderation – no more than one drink a day for women and no more than two drinks per day for men.²⁸ Certain groups of people should not drink alcohol, such as children and underage youth, women who are pregnant, individuals with certain medical conditions (including hepatitis B²⁹ or C³⁰), persons recovering from alcoholism or are unable to control the amount they drink, and individuals taking certain prescription or over-the-counter medications that can interact with alcohol (e.g., SSRI anti-depressants³¹). Also, cancer survivors should avoid alcohol during treatment and monitor consumption after treatment.³²

Measurable Objectives

1. By 2023, decrease the percentage of adults who report binge drinking within the past 30 days from 17.5% to 15.8%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
2. By 2023, decrease the percentage of adults who report heavy drinking within the past 30 days from 5.9% to 5.3%. (Baseline, 2016: BRFSS)
3. By 2023, decrease the percentage of youth in grades 9 to12 reporting the use of alcohol on at least one day within the past 30 days from 29.7% to 26.7%. (Baseline, 2015: Youth Risk Behavior Survey [YRBS])



Suggested Strategies

- Collaborate with partners and key stakeholders to educate the public, including youth and young adults, on cancer risk related to alcohol usage.
- Collaborate with institutes of higher education to support campus safety programs to reduce binge drinking.
- Provide personalized feedback about the risks and consequences of excessive drinking through the use of electronic screening and behavioral counseling interventions in healthcare settings, schools, and emergency rooms.
- Among persons meeting the diagnostic criteria for alcohol dependence, promote the use of alcohol misuse screening and brief behavioral counseling interventions via traditional (face to face) or electronic means, and referrals to specialty treatment.
- Encourage community coalitions that build partnerships between schools, faith-based organizations, law enforcement, healthcare, and public health agencies to reduce all alcohol consumption among underage youth.
- Limit alcohol advertisements in public locations such as near schools and on public transportation where youth ages 21 years and younger are exposed to marketing.
- Support the enforcement of laws prohibiting alcohol sales to minors and other public policies that discourage underage drinking.



For More Information

American Cancer Society - About Alcohol Use and Cancer:

www.cancer.org/cancer/cancercauses/dietandphysicalactivity/alcohol-use-and-cancer

Centers for Disease Control and Prevention - Guide of Primary Care Practices for Planning and Implementing Screening and Brief Intervention for Risky Alcohol Use:

www.cdc.gov/ncbddd/fasd/documents/alcoholsbiimplementationguide.pdf

Centers for Disease Control and Prevention - Preventing Cancer by Reducing Excessive Alcohol Use:

www.cdc.gov/cancer/dcpc/pdf/reducingexcessalcoholuse.pdf

National Cancer Institute – About Alcohol and Cancer Risk:

www.cancer.gov/about-cancer/causes-prevention/risk/alcohol/alcohol-fact-sheet

National Institute on Alcohol Abuse and Alcoholism - CollegeAIM: Tools for Colleges and Universities to Identify Effective Alcohol Interventions:

www.collegedrinkingprevention.gov/collegeaim

US Department of Health and Human Services - The Surgeon General’s Report on Alcohol, Drugs, and Health:

<https://addiction.surgeongeneral.gov/>

US Preventive Services Task Force – Alcohol Misuse: Screening and Behavioral Counseling:

www.uspreventiveservicestaskforce.org/BrowseRec/Index

II-2.2: Environmental and Occupational Exposure

Our environment is defined by where we live, work, learn, and play; what we eat and drink; what we breathe; and what we come in contact with every day. Exposure to certain substances due to geography, occupation, social norms, lifestyle, and diet may have cancer-causing potential. To reduce the risk of health effects, exposures should be reduced.

There are numerous substances and potential toxicants in the environment and in consumer products which may increase cancer risk. Some exposure to second hand smoke, radon, asbestos, UV radiation, and components of diesel exhaust and wood burning are linked to

cancer. Some chemicals in household products are being investigated for links with cancer.

Exposure to substances in the workplace may also increase cancer risk. This includes prolonged or intense exposure (in higher concentrations than typically found outside the workplace) to UV radiation, toxic wastes, agricultural pesticides, some industrial and manufacturing products, some outdoor landscaping materials, and chemicals such as asbestos, arsenic, benzene, chromium, vinyl chloride, and silica. The American Cancer Society estimates that between 2% and 5% of cancers in the U.S. are due to occupational exposures.³³

For known carcinogens, prevention efforts focus on reducing the length of time, concentration, and intensity of exposure. Yet, there is not always a full understanding of dose and timing for all exposures³⁴ and avoiding exposure may not be possible in many instances. According to the National Cancer Institute, socio-economic status predicts the likelihood of an individual's occupation and living conditions in which exposure to environmental toxins is common and can be associated with the risk of developing and surviving cancer.³⁵

According to the National Cancer Institute, socio-economic status predicts the likelihood of an individual's occupation and living conditions in which exposure to environmental toxins is common and can be associated with the risk of developing and surviving cancer.

While links between cancer and consumer products are largely unknown, there are a variety of behavior changes individuals can make to reduce environmental exposure and protect health. This includes: keeping chemicals out of one's immediate surroundings; using ventilation to prevent contaminants from staying trapped indoors; using less products containing chemicals such as cleaning products, pesticides, and personal care products; thoroughly washing foods and surfaces; properly storing hazardous substances away from children; and keeping homes in good working order by reducing exposure to radon, carbon monoxide, mold, lead-based paint, fuel storage tanks, and pressure-treated wood.³⁶

Employers and workers can take precautions to reduce the risk and exposure to carcinogens at places of employment. Employers can establish chemical management systems to reduce chemical exposures of workers. In addition, occupational health partners use public health data to guide the development of new, safer

technologies, educational activities, and regulatory and policy changes to make workplaces healthier.



Suggested Strategies

- Improve citizens' awareness and understanding of both the risks of exposure to cancer-causing substances in the environment, as well as ways to reduce exposures through collaborative efforts with environmental health entities. Areas of awareness include the:
 - role of diet in cancer prevention, including the identification of dietary risk factors for common cancers and ways to reduce risks;
 - relationship between indoor radon exposure and lung cancer with outreach and education about testing and remediation;
 - potential risks from products used in and around the home (e.g., some pesticides, solvents and other chemicals);
 - potential risks for known or possible occupational/agricultural carcinogens to be brought into the home ("take-home exposure"), and the identification of actions to reduce these exposures; and
 - availability of medication take-back-days across NYS to lessen the long-term impact of pharmaceuticals in water supplies and soil.
- Partner with federal, state and local governments, businesses and communities to reduce exposures to known or suspected environmental risk factors for cancer (e.g., carcinogens at hazardous waste sites, in the workplace, in personal care and consumer products, in drinking water supplies, and in indoor or outdoor air).

- Work with occupational health partners to increase employees’ knowledge and understanding of occupational carcinogens:
 - Launch media campaigns which promote policies and procedures in all NYS work places that reduce or eliminate occupational exposure; and
 - Eliminate hazardous chemicals, or transition to safer ones in the workplace to reduce worker exposure.
- Monitor potential exposures through routine environmental health activities, communicating with communities impacted, and acting to reduce exposures when necessary.
- Increase awareness of such programs as NYS’s “Image Gently” and the national “Image Wisely” campaigns that educate physicians and the public about potential radiation exposure from computed tomography (CT) scans and X-rays in both children and adults.



For More Information

American Cancer Society - At Home:

www.cancer.org/cancer/cancercauses/othercarcinogens/athome

Agency for Toxic Substances and Disease Registry – Chemicals, Cancer, and You Factsheet:

www.atsdr.cdc.gov/emes/public/docs/Chemicals,%20Cancer,%20and%20You%20FS.pdf

Centers for Disease Control and Prevention:

<http://ephtracking.cdc.gov/showCancerExpRisk.action>

National Cancer Institute - 2008-2009 President’s Cancer Panel Annual Report

http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf

National Cancer Institute – Cancer-Causing Substances in the Environment:

www.cancer.gov/about-cancer/causes-prevention/risk/substances

National Institute of Environmental Health Sciences:

www.niehs.nih.gov/health/topics/conditions/cancer/index.cfm

National Institute for Occupational Safety and Health – Occupational Cancer:

www.cdc.gov/niosh/topics/cancer

NYS Department of Health:

www.health.ny.gov/environmental/about/exposure.htm

www.health.state.ny.us/statistics/environmental/public_health_tracking

US Department of Labor, Occupational Safety and Health Administration:

www.osha.gov/dsg/safer_chemicals/index.html

www.osha.gov/dsg/annotated-pels/index.html

US Environmental Protection Agency:

www.epa.gov/indoor-air-quality-iaq/care-your-air-guide-indoor-air-quality

II-2.3: Genetics & Family Health History

Per the National Cancer Institute, inherited genetic mutations (that is, changes to genes that we may inherit from our families) play a known role in about 5% to 10% of all cancers. More than fifty inherited cancer syndromes, most of which are rare, have been associated with mutations in certain genes.³⁷ As research continues, there will likely to be increases in the numbers of cancers associated with known genetic predispositions. Lynch Syndrome is an inherited disorder that increases the risk of colorectal cancer and other cancers such as endometrial or uterine, stomach, ovarian and pancreatic. Hereditary Breast and Ovarian Cancer syndrome is linked to inherited mutations in the BRCA1, BRCA2, and other high-risk closely related genes. Adenomatous polyposis coli (APC) gene mutations increase a person's risk for Familial Polyposis Syndrome and, subsequently, colorectal cancer. Not everyone who inherits a genetic mutation will necessarily develop cancer, but all men and women with a known family history suggestive of an inherited cancer condition should undergo a cancer risk assessment, genetic counseling by a clinician trained in genetics and, when appropriate, genetic testing.

Additional cancers can be associated with a family history of cancer even if there is no obvious inherited mutation. While cancers that appear to run in a family may be explained by factors that a family shares, such as a common exposure like tobacco use, a family history of cancer that contains certain patterns suggests a cancer risk assessment should be conducted. Such patterns include, but are not limited to, families where cancers are diagnosed at a young age, multiple family members are diagnosed with cancer or many cancers are diagnosed in one person.³⁸ For example,

Knowledge of family health history (when possible) and, if conducted, genetic testing can help inform an individual's healthcare decisions and promote specific interventions aimed at reducing risk.

when a young adult is diagnosed with colorectal cancer, other family members should be alerted that they may be at higher risk and encouraged to talk to their healthcare providers to determine their risk; early colorectal cancer screening may be warranted.³⁹

Providers should take a proper family history and update it regularly to help identify adults at higher risk for certain cancers. Knowledge of family health history (when possible) and, if conducted, genetic testing can help inform an individual's healthcare decisions and promote specific interventions aimed at reducing risk. Individuals who have an elevated risk for cancer based on family history or a genetic test will benefit from tailored advice about their options for prevention, early detection, and surveillance.

Measurable Objectives

By 2023, assess available data sources to measure items such as:

- a. The number of moderate- and high-risk individuals who receive appropriate screening and referral to cancer genetic services.
- b. The use of hereditary cancer risk assessment, including genetic counseling and appropriate genetic testing.
- c. The percentage of colorectal tumors tested for inherited gene mutations.



Suggested Strategies

- Provide outreach and education to enhance public knowledge about the importance of family history and genetics for cancer risk and management.
- Educate and support healthcare providers to collect family histories of cancer to identify those likely to benefit from genetic counseling, consideration of genetic testing and risk reduction interventions such as early detection.
- Promote use of the U.S. Preventive Services Task Force (USPSTF) guidelines for cancer genetic counseling and testing.
- Advocate for a continued focus on the confidentiality and privacy of genetic test results to prohibit genetic discrimination.
- Advocate for third-party payment of genetic counseling and appropriate genetic testing.
- Encourage cancer survivors to talk about their diagnosis with their family members so family members can talk to their providers about a cancer risk assessment.
- Distribute up-to-date information about the availability of genetic counselors in the state, including those that provide services at low or no cost.
- Develop and implement electronic health records (EHRs) that can collect family health history information and link to evidence-based screening and surveillance recommendations.
- Collect population-based risk factor information such as cancer-related family health history and co-occurring diseases.
- Promote universal genetic testing for all resected colorectal cancers (CRC) to both better define the epidemiology of inherited CRC and to facilitate the appropriate management of affected individuals and their at-risk relatives with respect to genetic counseling and testing, risk communication and appropriate screening.



For More Information

Centers for Disease Control and Prevention – About Family Health History:

www.cdc.gov/genomics/famhistory/index.htm

Centers for Disease Control and Prevention – About Genomic Testing:

www.cdc.gov/genomics/gtesting/index.htm

National Cancer Institute – Breast Cancer Risk Assessment Tool:

www.cancer.gov/bcrisktool

National Cancer Institute – Genetic Testing for Hereditary Cancer Syndromes:

www.cancer.gov/about-cancer/causes-prevention/genetics/genetic-testing-fact-sheet

NYS Department of Health – About Cancer Genetics & Genetic Counselors in NYS:
www.health.ny.gov/diseases/cancer/genetics/index.htm

Surgeon General’s “My Family Health Portrait” Tool:
<https://familyhistory.hhs.gov/FHH/html/index.html>

II-2.4: Physical Activity, Nutrition, and Breastfeeding

It is estimated that up to one-third of all cancers may be attributed to excess weight, physical inactivity, and unhealthy diet. Adopting an active lifestyle, eating a healthy diet and maintaining a healthy weight can help lower the risk of cancer and improve cancer mortality rates. Breastfeeding also plays an important role in cancer prevention.

Obesity has reached epidemic proportions in NYS and across the nation (Figure 9). One-quarter (25.5%) of New York adults are obese and another 35.3% are overweight. The prevalence of obesity is higher among adults who are black (33.8%) or Hispanic (29.8%), have an annual household income of less than \$25,000 (30.5%), have a high school education (30.2%), or are currently living with disability (38.1%).⁴⁰ Currently, one-third of New York’s children are obese or overweight, with higher rates in low-income areas downstate and geographically isolated areas.⁴¹

Thirteen cancers are strongly associated with obesity: cancers of the esophagus, breast, colon and rectum, endometrium, gallbladder, gastric cardia, kidney, liver, ovary, pancreas, thyroid, meningioma, and multiple myeloma. Further, according to the CDC, about 55% of cancers diagnosed in women and 24% of those diagnosed in men nationwide are overweight- and obesity-related cancers.⁴² The risk for cancer increases by 10% for every ten years an individual remains obese.⁴³ The higher rates of obesity among some ethnic minority groups may contribute to the disparities seen in cancer incidence rates by ethnic and racial groups.⁴⁴

The most recent Physical Activity Guidelines for Americans (2008) recommend adults participate in moderate-intensity aerobic physical activities for at least 150 minutes per week, vigorous-intensity aerobic physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous-intensity aerobic physical activities, and participate in muscle strengthening activities on two or more days per week. Almost half of all NYS adults (47.1%) met the recommendation (at least 150 minutes per week) for aerobic activity, only 30% met the recommendation (more than twice per week) for muscle strengthening physical activity and only 20% were estimated to have met both recommendations.⁴⁵ The Guidelines also recommend that adults avoid inactivity, as those who engage in any amount of physical activity experience some health benefits. Three of four NYS adults (73.7%) participate in leisure-time physical activity, which includes any physical activities (such as running, calisthenics, golf, gardening, or walking) other than one’s regular job, in the past month. Participation in leisure-time physical activity is lowest among adults who are Hispanic (63.5%), have a household income of less than \$25,000 (56.5%, 61.9%), have less than a high school education (53.4%), or are living with disability (56.2%).

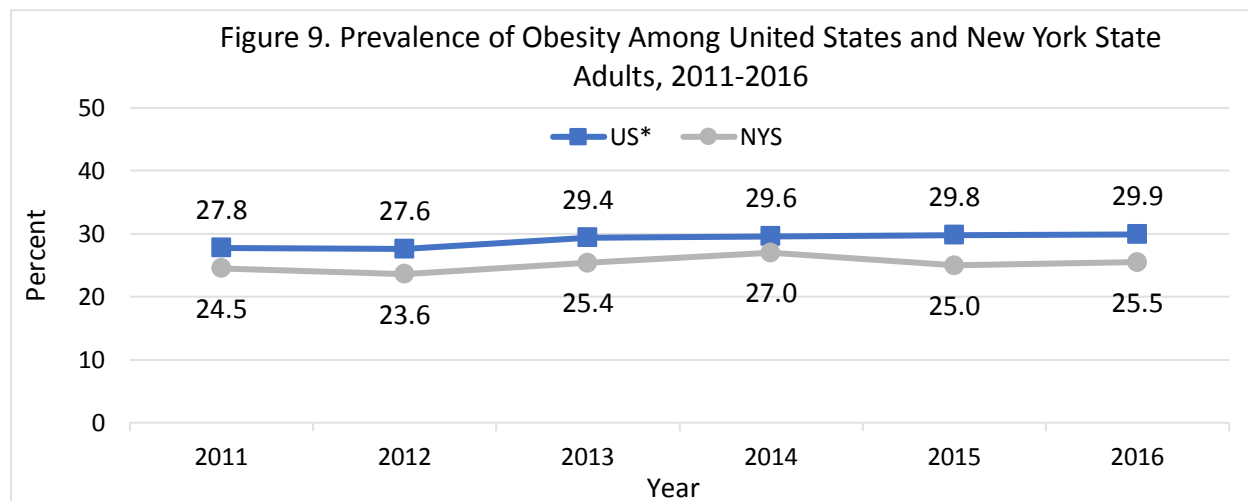
Adopting an active lifestyle, eating a healthy diet and maintaining a healthy weight can help lower the risk of cancer and improve cancer mortality rates. Breastfeeding also plays an important role in cancer prevention.

The 2020 Dietary Guidelines for Americans recommend children and adults eat fruits in whole form, and nutrient-dense vegetables such as broccoli and spinach (dark green), tomatoes and sweet potatoes (red and orange) and legumes as part of a healthy diet.⁴⁶ One in three adults (37.4%) in NYS consume fruit less than one time per day, while 22.4% consume vegetables less than one time daily. Daily consumption of fruits or vegetables is lower among adults who are black or Hispanic, live in households that earn less than \$25,000 a year, have less than a high school education, or are living with disability.⁴⁷ Parents and schools can be educated about the tools and strategies to offer children healthful foods beginning in early childhood.

Breastfeeding also plays a role in cancer prevention for infants and mothers. Breastfed babies have a reduced risk of childhood obesity and are more likely to have a healthy weight

than non-breast fed babies.⁴⁸ For women, breastfeeding can help control their weight and can also reduce the risk of developing cancers such as breast and ovarian.^{49,50} Breastfeeding is especially relevant for African American women who are also less likely than white and Hispanic mothers to breastfeed; recent research demonstrates that African American women with high parity (number of births) who have not breastfed their children have an increased risk of developing triple negative breast cancer.^{51,52}

Policies and environmental changes which support physical activity, nutrition, and breastfeeding are important factors for supporting healthy lifestyles. This includes access to outdoor recreation, indoor exercise facilities, physical education and activity in schools, affordable grocery stores, fresh produce and healthy foods, and adequate facilities for breastfeeding or expressing milk in workplaces. Such changes could also include educating the public about the link between obesity and consumption of sugary drinks, limiting the sale and availability of sugary drinks and making clean, potable water readily available in public places, worksites and recreation areas.



*Median percent; includes data from all 50 states and the District of Columbia
 Source of data: NYS BRFSS

Measurable Objectives

1. By 2023, decrease the percentage of adults who:
 - a. Are obese (BMI \geq 30) from 25.5% to 24.2%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
 - b. Are overweight (BMI 25.0-29.9) from 35.3% to 33.5%. (Baseline, 2016: BRFSS)
2. By 2023, decrease the percentage of children and adolescents who are obese:
 - a. Among public school students statewide (excluding NYC) from 17.3% to 15.6%. (Baseline, 2014-2016: Student Weight Status Category Reporting System [SWSCRS])
 - b. Among public school students in NYC from 21.4% to 19.3%. (Baseline, 2015: NYC Fitnessgram)
3. By 2023, decrease the percentage of adults who do not participate in any leisure-time physical activity from 26.3% to 23.7%. (Baseline, 2016: BRFSS)
4. By 2023, increase the percentage of adults who participate in enough Aerobic and Muscle Strengthening exercises to meet current guidelines from 20.0% to 21.0%. (Baseline, 2015: BRFSS)
5. By 2023, decrease the percentage of adults who consume fruits less than one time daily from 37.4% to 35.5%. (Baseline, 2015: BRFSS)
6. By 2023, decrease the percentage of adults who consume vegetables less than one time daily from 22.4% to 20.2%. (Baseline, 2015: BRFSS)
7. By 2023, increase the proportion of mothers who:
 - a. Breastfeed their babies at 6 months from 55.8% to 60.6% (Baseline, 2016: CDC National Immunization Survey [CDC NIS])
 - b. Exclusively breastfeed their babies at 6 months from 19.7% to 25.5% (Baseline, 2016: CDC NIS)



Suggested Strategies

- Promote policies and initiatives that increase opportunities for physical activity such as:
 - Working with local school districts to ensure schools comply with state physical activity requirements.
 - Promoting and supporting joint use agreements to open public areas and facilities for safe physical activity.
 - Participating in local efforts to adopt and implement Complete Streets resolutions, policies or legislation (i.e. ordinance).
 - Creating community-based social and physical environments to support healthy behaviors and are accessible and welcoming to persons with disabilities.

- Locating businesses with access to transit, walking and bicycling facilities, and developing workplace facilities and incentives that encourage active commuting.
- Implementing measures to preserve green space equitably, especially throughout urban neighborhoods.
- Promote policies and initiatives that increase access to affordable, nutritious foods, such as:
 - Adopting healthy food procurement and vending guidelines in public schools, state agencies, local governments, and community-based agencies and their vendors.
 - Working with local school districts to help schools comply with the Healthy, Hunger-Free Kids Act which requires local wellness policies and nutrition standards for school meals and snacks.
 - Increasing retail availability of affordable healthy foods that meet community needs.
 - Increase availability of healthy beverages such as water or low-fat milk.
- Promote health plan coverage of medical nutrition therapy and lifestyle change programs (e.g., diabetes prevention programs) that help individuals eat healthier and get more physical activity.
- Promote and support primary care practices to screen patients on their nutritional and physical activity needs and make appropriate referrals to community-based resources.
- Work with schools, licensed childcare centers and afterschool programs to establish policies that prohibit the sale and availability of sugary drinks.
- Encourage hospitals that provide labor and delivery services to achieve “Baby-Friendly Hospital” designation, a recognition of hospitals that provide mothers with information and skills to initiate and continue breastfeeding or safe formula feeding.
- Support policies to increase the duration and exclusivity of breastfeeding such as working with employers to provide paid family leave, supportive work environments for breastfeeding employees or encouraging obstetric/gynecologic, pediatric, family or midwifery practices to achieve “New York State Breastfeeding Friendly Designation,” to enable long-term breastfeeding success based on the mother's intentions.



For More Information

Baby-Friendly USA - About the Baby-Friendly Hospital Initiative:

www.babyfriendlyusa.org

Centers for Disease Control and Prevention - About Overweight & Obesity:

www.cdc.gov/obesity/index.html

Centers for Disease Control and Prevention - Nutrition Data, Guidelines, and Resources:

www.cdc.gov/nutrition

NYS Department of Health, Obesity Prevention Programs and Activities:

www.health.ny.gov/prevention/obesity/prevention_activities

NYS Department of Health - Breastfeeding Promotion, Protection, and Support:

www.health.ny.gov/community/pregnancy/breastfeeding

US Office of Disease Prevention and Health Promotion - 2015-2020 Dietary Guidelines for Americans:

<https://health.gov/dietaryguidelines/2015/guidelines>

II-2.5 Tobacco Use

Approximately 750,000 New Yorkers are afflicted with deadly illnesses and serious disabilities (such as cancer, diabetes, and heart disease) caused by smoking.⁵³ Tobacco use is also the leading preventable cause of death in NYS and the U.S.⁵⁴ Annually in NYS, 28,000 adults die from smoking and another 3,000 nonsmoking adults die from diseases caused by secondhand smoke.

Tobacco use increases the risk of 16 different types of cancer, including cancers of the lung, larynx (voice box), mouth, and esophagus.⁵⁵ Smoking is the most common cause of lung cancer⁵⁶, and an estimated 30% of all cancer deaths are related to cigarette smoking, and therefore are preventable.

Although smoking among NYS adults is at record lows, approximately 2 million NYS adults are current smokers (individuals over the age of 18 who smoked at least 100 cigarettes in their lifetimes and currently smoke on at least some

days).⁵⁷ Compared to the general population, higher rates of smoking continue to persist among adults with lower incomes, lower educational attainment (Figure 10), and poor mental health status. However significant progress was made from 2011 to 2016 in reducing smoking rates among these groups.⁵⁸ The rate of youth cigarette smoking, defined as an individual under the age of 18 who smoked cigarettes one or more times in the past 30 days, dropped sharply between 2000 and 2016, and now is at 4.3%, the lowest rate ever recorded in the State.⁵⁹

Tobacco use is also the leading preventable cause of death in NYS and the U.S. Tobacco use increases the risk of 16 different types of cancer, including cancers of the lung, larynx (voice box), mouth, and esophagus.

Despite this achievement, 35,000 NYS high school students are still at-risk for becoming adult smokers. Although use of traditional tobacco products such as cigarettes has declined among youth, 25.4% of high school age youth reported use of any tobacco in 2016, which includes cigarettes, cigars, smokeless tobacco, and electronic cigarettes (e-cigarettes) and similar devices.⁶⁰ E-cigarettes are battery-powered devices that heat a liquid or gel solution that may or may not contain nicotine, creating an emission inhaled by the user. E-cigarettes are not hazard-free and the inhaled emission may contain heavy metals, volatile organic compounds, and other toxic chemicals. E-cigarette use by NYS high school students nearly doubled between 2014 and 2016, from 10.5% to 20.6%. In fact, more high school age youth use e-cigarettes than smoke traditional cigarettes. Additionally, more than half of high school students and young adults who smoke cigarettes also use e-cigarettes, making dual use of cigarettes and e-cigarettes the norm.⁶¹

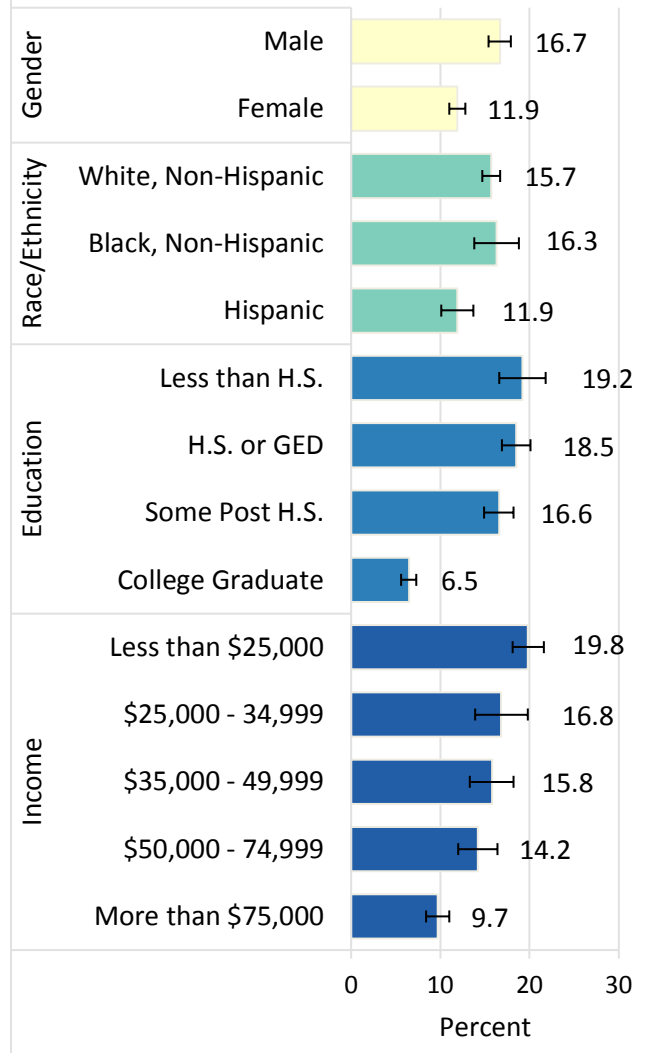
More work is needed to build on the progress NYS achieved as a result of tobacco- and smoke-free environments, high cigarette excise taxes, and health communication campaigns that include strong graphic and emotionally evocative messages and images. While NYS lung cancer incidence and smoking rates are at record lows, further declines will only be achieved with a continued focus on eliminating tobacco as a major cancer risk factor.^{62,63}



Suggested Strategies

- Support policy-driven, population-based approaches to prevent youth from smoking and to motivate adult smokers to quit. These policies may include:
 - Maintain the high cost of tobacco by 1) setting a high price floor below which no cigarettes may be sold; 2) restrict use of coupons and discounts on

Figure 10. Prevalence of Current Smokers by Demographic Groups New York State Adults, 2016



Source of data: NYS BRFSS

- tobacco products; and 3) require that inexpensive cigars be sold in multiunit packs with a hard price floor.
- Prohibit sale of flavored tobacco products including menthol in cigarettes and all flavored electronic cigarette products.
- Limit the impact of tobacco marketing on youth smoking by 1) restricting sales

- near schools; 2) reducing the total number of retail tobacco licenses; and 3) prohibit sales of tobacco products in pharmacies.
- Restrict the sale of tobacco products to people under the age of 21.
- Promote tobacco-free policies in multi-unit housing that serves low income New Yorkers.
- Establish tobacco-free outdoor areas including major employers, parks, playgrounds and beaches.
- Expand availability of medications and counseling.
- Increase health system adoption of the US Public Health Service system strategies for tobacco treatment.
- Promote the recommended strategies of The Community Guide for Preventive Services and the CDC’s Best Practices for Comprehensive Tobacco Control Programs.
- Educate and support primary care providers in their efforts to counsel tobacco users to quit smoking.
- Ensure that adequate tobacco cessation efforts are offered in comprehensive low-dose CT lung cancer screening programs offered to people who meet the criteria for high risk (based on age, smoking history and frequency). See the “Early Detection” section for more information.
- Promote the New York State Smoker’s Quitline.

Measurable Objectives

1. By 2023, decrease the percentage of adolescents in grades 9-12 who use any tobacco, including e-cigarettes, from 25.4% to 17.7%. (Baseline, 2016: NYS Youth Tobacco Survey [NY-YTS])
2. By 2023, decrease the percentage of adults ages 18 years and older who are current cigarette smokers from 14.2% to 9.9%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
 - Reduce disparity:*
 - a. By 2023, decrease the percentage of adults ages 18 years and older with a household income less than \$25,000 from 19.8% to 13.8%. (Baseline, 2016: BRFSS)
 - b. By 2023, decrease the percentage of adults ages 18 years and older who report poor mental health from 26.0% to 18.2%. (Baseline, 2016: BRFSS)
3. By 2023, increase the percentage of smokers reporting that their healthcare providers assisted them with smoking cessation from 52.5% to 62.4%. (Baseline, 2016: NYS Adult Tobacco Survey [NY-ATS])
4. By 2023, increase the percentage of smokers who made a quit attempt during the past 12 months from 64.2% to 71.3%. (Baseline, 2016: NY-ATS)
5. By 2023, decrease the percentage of adults who report being exposed to secondhand smoke



For More Information

Center for Public Health and Tobacco Policy - Evidence-Based Policies to Reduce Tobacco Use:
www.tobaccopolICYcenter.org

Centers for Disease Control and Prevention - Facts and Data on Smoking and Tobacco Use:
www.cdc.gov/tobacco

NYS Department of Health Tobacco Control Program - About Smoking and Tobacco Use:
www.health.state.ny.us/prevention/tobacco_control

NYS Smokers Quitline:
www.nysmokefree.com

US Department of Health and Human Services – Know the Risks: The Surgeon General’s Report on E-Cigarette Use Among Youth and Young Adults:
<https://e-cigarettes.surgeongeneral.gov/default.htm>

US Preventive Services Task Force - Lung Cancer Screening Recommendations and Evidence:
www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/lung-cancer-screening

II-2.6 Ultraviolet Radiation

Unprotected or extended exposure to ultraviolet (UV) radiation from the sun, indoor tanning or tanning lamps can lead to skin cancer, the most common cancer in the U.S. UV radiation causes up to 90% of all melanomas, the deadliest form of skin cancer.⁶⁴

Over the last 30 years, the melanoma incidence rate has been increasing. More than 3,800 residents in NYS are diagnosed with melanoma each year, and it is among the top ten cancer diagnoses for NYS residents. For young adults ages 20 to 34 years, melanoma ranks among the top four cancer diagnoses. About 648 New Yorkers die from skin cancer each year and approximately 75% of these deaths are due to melanoma.⁶⁵

Men are at higher risk for developing melanoma than women, which may be due to men being more likely to work in outdoor occupations.

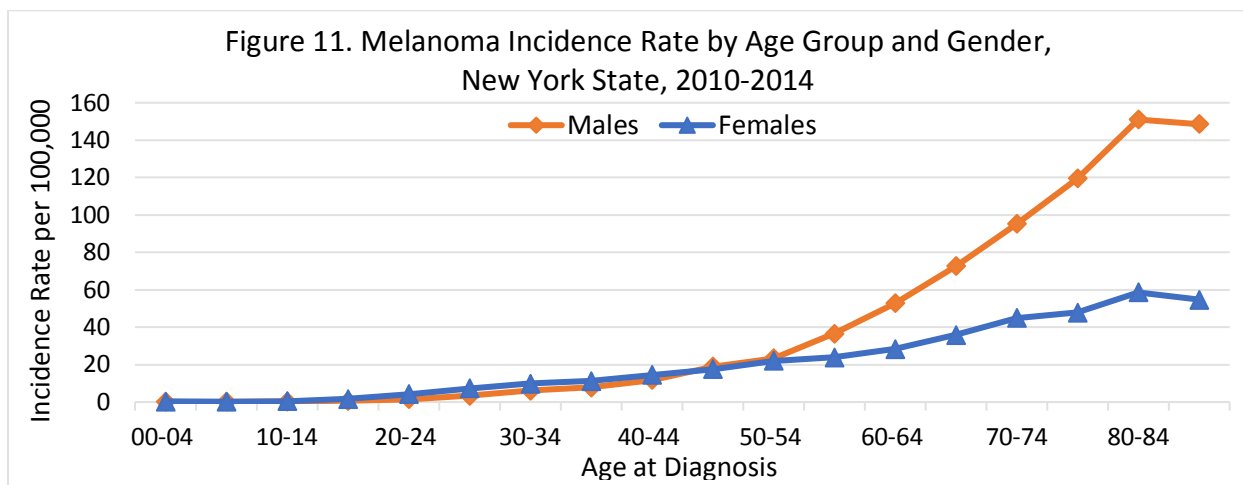
For young adults ages 20 to 34 years, melanoma ranks among the top four cancer diagnoses.

Melanoma risk also increases with age (Figure 11). Among people younger than age 50, however, the rates of melanoma are higher among women. After age 50, the rates among men increase more rapidly than among women. Although being fair-skinned and having a family history of skin cancer are risk factors, the strongest risk is exposure to UV radiation from the sun or artificial sources such as indoor tanning. Per the U.S. Department of Health and Human Services, more than one in three Americans report getting sunburned each year, a sign of overexposure to UV rays.⁶⁶ The use of indoor tanning beds before age 35 increases the risk for melanoma by 75%.⁶⁷ Despite the risk, indoor tanning bed usage among adolescents

nationwide continues to be widespread, with 10.6% of female and 4.0% of male high school students reporting use of indoor tanning devices within the past year.⁶⁸

In December 2015, the U.S. Food and Drug Administration (FDA) proposed two new rules and guidelines regarding indoor tanning products.⁶⁹ The first proposed rule (if put into effect), would restrict indoor tanning to individuals age 18 years and older nationally. A study published in the *Journal of the American Academy of Dermatology* found that restricting indoor tanning among minors younger than 18 years could prevent 61,839 melanoma cases, prevent 6,735 melanoma deaths, and save \$342.9 million in treatment costs over the lifetimes of the 61.2 million youth ages 14 years

or younger in the U.S.⁷⁰ Current NYS regulation prohibits persons under 17 years from using UV radiation devices and requires parental consent for persons 17 years of age before use. Similarly, if adopted, the second FDA rule would require manufacturers and tanning facilities to improve overall safety with indoor tanning equipment through warning statements, eyewear safety, appropriate replacement bulbs, and emergency shut-off switches. Currently, the FDA requires indoor tanning devices to be labeled with a visible, black-box warning stating they should not be used by people under age 18. Preventing new cases of skin cancer depends on reducing UV exposure through policies, community-wide interventions, and promotion of individual sun protection behaviors.



Source of data: New York State Cancer Registry



Suggested Strategies

- Promote educational initiatives that stress sun safety messages and provide clear information about the cancer risk associated with indoor tanning to decrease exposure to UV radiation for people of all ages, especially initiatives that target children, adolescents, young adults, parents, healthcare providers, and summer camp instructors.
- Implement environmental changes for sun protection in outdoor settings such as access to shade and sunscreen in playgrounds, schools, summer camps, and other outdoor recreational settings, and increase the availability of sun protection in occupational settings for outdoor workers.
- Promote organizational policy change to restrict indoor tanning booths, beds, and sunlamps at places such as institutes of higher education, off-campus college housing, and fitness centers and spas.

- Educate the public and decision makers about the importance of restricting the usage of indoor tanning by minors under the age of 18, without exceptions.
- Enforce existing tanning facility regulations to promote safety and appropriate use.
- Provide individuals with information needed to make informed choices about
- UV exposure such as appropriate messages for specific audiences and skin cancer prevention education in schools and workplaces.
- Strengthen research, surveillance, monitoring, and evaluation related to skin cancer prevention and early detection.



For More Information

American Cancer Society – Skin Cancer Prevention and Early Detection:

www.cancer.org/cancer/skin-cancer/prevention-and-early-detection.html

Centers for Disease Control and Prevention – Individual Actions to Reduce Risk of Skin Cancer:

www.cdc.gov/cancer/skin/basic_info/prevention.htm

Guide to Community Preventive Services – Evidence-Based Interventions for Skin Cancer Prevention:

www.thecommunityguide.org/sites/default/files/assets/What-Works-Skin-Cancer-factsheet-and-insert.pdf

National Cancer Institute - Use of Indoor Tanning in the US:

www.cancer.gov/news-events/cancer-currents-blog/2015/indoor-tanning

NYS Department of Health – Tanning and Sun Safety:

www.health.ny.gov/environmental/tanning

US Department of Health and Human Services - Surgeon General’s Call to Action to Prevent Skin Cancer:

www.surgeongeneral.gov/library/calls/prevent-skin-cancer



II-2.7 Vaccine-Preventable and Infectious Disease-Related Cancers

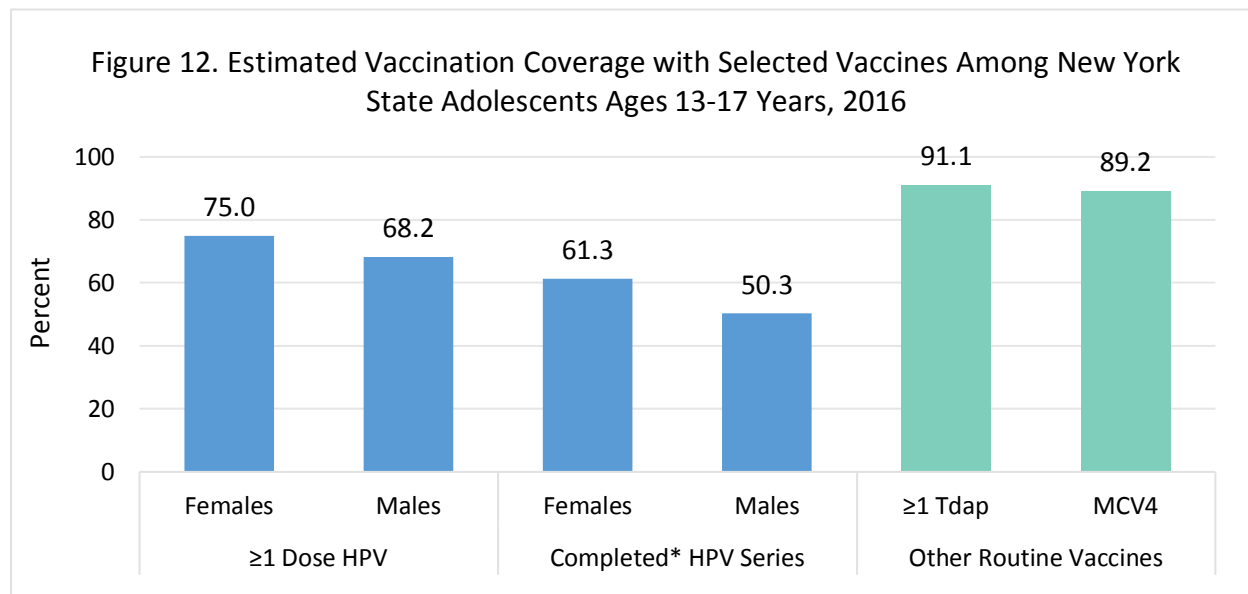
Some infections, including human papillomavirus infection and chronic hepatitis B and C infections, have been associated with an increased risk of cancer.

The human papillomavirus (HPV) is one of the most common sexually transmitted infections. Nearly all sexually active men and women will acquire at least one type of HPV at some point in their lives. Almost all cervical cancer is caused by HPV. HPV is also associated with vaginal, vulvar, penile, anal, and oropharyngeal (head/neck) cancers. Nationally, about 31,500 HPV-related cancers are diagnosed each year and most could be prevented with the HPV vaccine.^{71, 72}

The Advisory Council on Immunization Practices (ACIP) recommends the HPV vaccine for males and females ages 11 to 12 years; and through age 26 for females and age 21 for males, if not previously vaccinated. It is recommended through age 26 for men who have sex with men

and for immunocompromised persons (e.g., those with HIV infection). Cervical cancer screening with Pap testing is recommended for women, regardless of their vaccination status.⁷³ Despite increases in HPV vaccination rates among adolescents ages 13 to 17 years in NYS, current rates fall below other routine vaccines recommended during adolescence (Figure 12). In 2016, approximately 75% of adolescent females received at least 1 dose of the HPV vaccine. The percentage of male adolescents in NYS who received at least one dose of HPV vaccine increased from 6.4% in 2011 to 68.2% in 2016. Among both male and female NYS adolescents, HPV vaccine series initiation is lowest among non-Hispanic whites and those living at or above poverty level.

Chronic hepatitis B and hepatitis C infections are important risk factors for liver cancer. Each year, over 1,900 New Yorkers are diagnosed with liver cancer and 1,300 die from the disease.⁷⁴ Hepatitis B and hepatitis C are



**Starting in 2016, an “up-to-date” measure was created to assess completion of the recommended number of doses of the HPV vaccine series (2-doses separated by 5 months (minus 4 days) for immunocompetent adolescents initiating the HPV vaccine series before their 15th birthday and 3 doses for all others)*

Source of data: CDC National Immunization Survey-Teen

caused by different viruses (HBV and HCV) that attack the liver. The CDC estimates that up to 2.2 million people in the U.S. are living with HBV infection.⁷⁵ The CDC estimates up to 3.9 million people have chronic hepatitis C.⁷⁶ Individuals born between 1945 and 1965 account for 75% of all HCV infections in the U.S., and an estimated 200,000 New Yorkers are living with HCV infection, but most are not aware.⁷⁷ The HBV vaccine is the most effective measure to prevent HBV infection. The ACIP recommends that all infants, children, and adolescents up to the age of 18 receive the vaccine. It is also recommended for adults who may be at risk for infection, including healthcare workers, heterosexuals with multiple sex partners, injection-drug users, and men who have sex with men.

While there is no vaccine for hepatitis C, NYS enacted the HCV Testing Law in 2014 requiring all persons born between 1945 and 1965 receiving services as inpatients of a hospital, in a primary care setting or by a licensed practitioner be offered an HCV screening test. Effective treatment for HCV infection can help prevent liver cancer.⁷⁸

Almost all cervical cancer is caused by HPV. HPV is also associated with vaginal, vulvar, penile, anal and oropharyngeal (head/neck) cancers. Nationally, about 30,700 HPV-related cancers are diagnosed each year and most could be prevented with the HPV vaccine.

Measurable Objectives

1. By 2023, increase the percentage of adolescents ages 13 to 17 years who have received the HPV vaccine in accordance with the most recent ACIP recommendations:
 - a. By 2023, increase the percentage of male and female adolescents ages 13 to 17 years who have completed the recommended number of doses of the HPV vaccine series from 55.7% to 80.0%. (Baselines, 2016: NIS-Teen)
2. By 2023, maintain the percentage of children who have received the HBV vaccine in accordance with the most recent ACIP recommendations:
 - a. By 2023, maintain the percentage of children ages 19 to 35 months who have received all three recommended doses of the HBV vaccine at 90% or above (Baseline, 2016: 93.5%, NIS)
 - b. By 2023, maintain the percentage of infants who have received at least one dose of the HBV vaccine from birth to 3 days of age at 80% or above (Baseline, 2015: 83.8%, NY Statewide Perinatal Data System)
3. By 2023, increase the percentage of NYS adults born between 1945 and 1965 who report having ever been tested for hepatitis C from 32.1% to 35.3%. (Baseline, 2014: Behavioral Risk Factor Surveillance System)
4. By 2023, decrease the rate of liver cancer from 7.6 cases per 100,000 population to 7.2 cases per 100,000 population (Baseline, 2012-2014: New York State Cancer Registry)



Suggested Strategies

- Develop and implement educational campaigns targeted to at-risk adolescents and adults regarding the benefits and risks of HPV and HBV vaccines.
- Institute reminder-recall systems in healthcare settings to increase the use of the HPV and HBV vaccines, per evidence-based guidelines.
- Adopt local HPV policies which support HPV vaccination in adolescents and expand vaccine availability to new venues such as more healthcare settings and schools.
- Promote the use of HBV vaccine in venues where persons at risk for HBV access services, such as sexually transmitted disease clinics and needle exchange programs.
- Launch an educational or media campaign about the NYS HCV Testing Law to the following target audiences: persons born between 1945-1965, populations at-risk for HCV (such as persons who inject drugs), and medical providers.
- Promote HCV Reflex Testing, a follow-up diagnostic test for any individual who received a positive HCV screening test, to ensure appropriate care and treatment.
- Educate healthcare providers about the benefits of recommending the HPV and HBV vaccinations for their patients.



For More Information

Centers for Disease Control and Prevention, 2 Dose HPV Vaccine Guidance for Providers:

www.cdc.gov/hpv/downloads/9vhpv-fda.pdf

www.cdc.gov/hpv/downloads/9vhpv-guidance.pdf

Centers for Disease Control and Prevention, HPV Advisory Committee for Immunization Practices Vaccine Recommendations:

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html

www.cdc.gov/mmwr/preview/mmwrhtml/rr6305a1.htm

www.cdc.gov/mmwr/preview/mmwrhtml/mm6411a3.htm

Centers for Disease Control and Prevention, HPV and Cancer:

www.cdc.gov/cancer/hpv/statistics/cases.htm

Centers for Disease Control and Prevention, HPV for Parents and the Public:

www.cdc.gov/hpv/parents/index.html

Centers for Disease Control and Prevention, Viral Hepatitis Surveillance:

www.cdc.gov/hepatitis/statistics/2012surveillance/commentary.htm

The Community Guide to Clinical Preventive Services, Findings on Vaccination:

www.thecommunityguide.org/topic/vaccination

The George Washington Cancer Center – Viral Hepatitis and Liver Cancer Social Media Toolkit:
https://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/Viral%20Hepatitis%20%26%20Liver%20Cancer%20Social%20Media%20Toolkit%202017_5.2.17.pdf

NYS Department of Health, The HPV Vaccine:
www.health.ny.gov/diseases/communicable/human_papillomavirus

NYS Department of Health, Viral Hepatitis Strategic Plan 2016-2020:
www.health.ny.gov/diseases/communicable/hepatitis/strategic

NYS Department of Health, Hepatitis B Birth Dose Vaccination Rates by County:
<https://health.data.ny.gov/Health/Hepatitis-B-Birth-Dose-Vaccination-Rates-Beginning/favj-y88j>

University of North Carolina Gillings School of Global Public Health, Evidence-Based Tools for HPV Vaccine Quality Improvement:
www.hpviq.org

II-3: Early Detection

All New Yorkers will receive age-appropriate, evidence-based, guideline-driven screening services for the early detection of cancer.

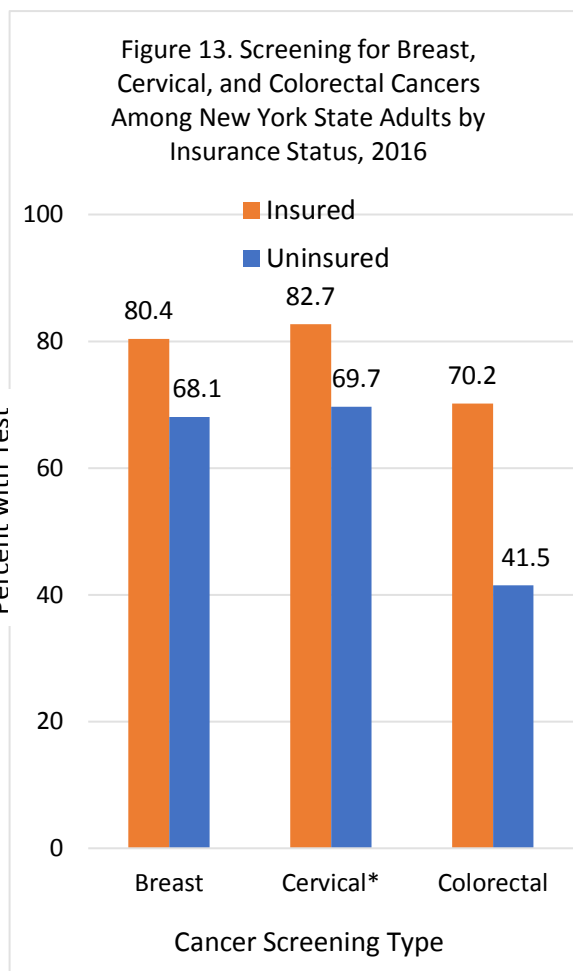


Cancer screening can detect disease at an early stage in people who have no signs of illness, and in some cases, can find pre-cancerous cells which can be removed before cancer occurs. Individuals with a known family health history of cancers or other risk factors (e.g., personal history of inflammatory bowel disease) may have a higher risk for cancer and may benefit from being tested at an earlier age or more frequent intervals.

When cancer screening tests are not available or recommended, symptom recognition and prompt follow-up can be a benefit as early detection. In some cases, such as prostate and skin cancer, average risk screening is not recommended as standard practice. In these and in all cases, acknowledging the need to balance the benefits and potential harms of screening, individuals should talk with their healthcare provider about their individual risk factors and make an informed decision about getting screened.

Despite progress made to increase breast, cervical and colorectal cancer screening rates in NYS, additional work is needed. Women aged 21 to 29 years are significantly less likely to have received a recommended cervical cancer screening compared to women aged 30 to 65 years. The percentage of adults ages 50 to 75 years who are up-to-date with colorectal cancer screening is below the goal of 80% screened.⁷⁹

People without health insurance (Figure 13) and people without a regular healthcare provider are less likely to be screened for breast, cervical and colorectal cancer. People with low incomes are less likely to be screened than people with high incomes.⁸⁰ People with disabilities are less likely than people without disabilities to receive recommended cancer screenings.⁸¹ Lack of availability of the right equipment to support



*Pap test within past three years for women ages 21-65 years

Source of data: NYS BRFSS

cancer screening among people with disabilities is a significant issue, as is the need for disability competency training among the healthcare workforce.

Although lung cancer incidence has steadily decreased in NYS⁸², it is the number one cancer killer for both men and women (9,000 men and women each year⁸³). Lung cancer screening is

recommended for high risk individuals between ages 55 and 80 years who have a history of heavy smoking and either currently smoke or have quit within the past 15 years.⁸⁴ More work is needed to educate men and women who meet these criteria about the benefits and risks of screening to help them make informed decisions. Healthcare providers need tools and support to engage with patients who may benefit from screening, and facilities adopting lung cancer screening programs should be following national guidelines for a quality program.



Suggested Strategies

- Promote evidence-based cancer screening messages to the public.
- Assure continued access to health insurance to reduce economic barriers to screening.
- Support primary care providers in their efforts to enhance their electronic health record (EHR) systems to conduct automated assessments of their patient panels for up-to-date screening information, including timely follow up on abnormal results.
- Implement evidence-based strategies outlined in the Guide to Community Preventive Services:
 - Patient and provider screening reminders (e.g., letters, postcards, emails, recorded phone messages, EHR alerts, interactive voice response systems).
 - One-on-one and group education for patients.
 - Feedback to providers on their cancer screening performance.
 - Build community demand through use of small media (videos, letters, brochures, and newsletters) and earned media (free media, letters to the editor, appearances on local news programs and on-air or print interviews).
 - Remove structural barriers (e.g. provide transportation, adjust appointment hours, eliminate out of pocket costs, and provide patient navigation).
 - Integrate cancer screening into routine clinical preventive services wherever possible (e.g., provide opportunities for cancer screening along with immunization, etc.).
- Provide accessible cancer screening to all New Yorkers regardless of insurance status or geographic location by continuing programs such as the NYS Cancer Services Program and access to mobile mammography screening.
- Provide education and resources to the public and providers about high quality lung cancer screening among high risk populations.
- Encourage employers to provide employees with paid leave or the option to use flex time for cancer screenings.
- Develop systems to assess, monitor, and overcome disparities and barriers related to cancer screening and diagnostic services.
- Encourage cancer survivors to promote and facilitate cancer risk assessments and possibly screenings in unaffected family members.

Measurable Objectives

Breast Cancer:

1. By 2023, increase the percentage of women who receive a breast cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of women ages 40 to 49 years who have received a mammogram within the past two years from 66.0% to 69.3%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
 - b. By 2023, increase the percentage of women ages 50 to 74 years who have received a mammogram within the past two years from 79.7% to 87.7%. (Baseline, 2016: BRFSS)
2. By 2023, decrease the rate of female breast cancer identified at late stages from 42.4 cases per 100,000 females to 38.2 cases per 100,000 females. (Baseline, 2012-2014: New York State Cancer Registry [NYSCR])

Cervical Cancer:

1. By 2023, increase the percentage of women who receive a cervical cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of women ages 21 to 65 years who have received a Pap test within the past three years or women ages 30 to 65 years who have received a Pap and HPV co-test within the past five years from 82.2% to 86.3%. (Baseline, 2016: BRFSS)
2. By 2023, decrease the rate of invasive cervical cancer from 7.7 cases per 100,000 females to 6.9 cases per 100,000 females. (Baseline, 2012-2014: NYSCR)

Colorectal Cancer:

1. By 2023, increase the percentage of adults who receive a colorectal cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of adults ages 50 to 75 years who received either a blood stool test within the past year, or a sigmoidoscopy within the past 5 years and a blood stool test within the past 3 years, or a colonoscopy within the past 10 years from 68.5% to 80.0%. (Baseline, 2016: BRFSS)
Reduce disparity:
 - b. By 2023, increase the percentage of adults ages 50 to 75 years with an income <\$25,000 who received either a blood stool test within the past year, or a sigmoidoscopy within the past 5 years and a blood stool test within the past 3 years, or a colonoscopy within the past 10 years from 60.7% to 63.7%. (Baseline, 2016: BRFSS)
2. By 2023, decrease the rate of invasive colorectal cancer from 39.4 cases per 100,000 population to 35.5 cases per 100,000 population. (Baseline, 2012-2014: NYSCR)

Measurable Objectives (continued)

Lung Cancer:

1. By 2023, establish a means by which to assess the percentage of high risk adults who are screened for lung cancer based on the most recent guidelines. (Developmental measure - potential data source: BRFSS)
2. By 2023, decrease the rate of lung cancer identified at late stages from 42.8 cases per 100,000 population to 38.5 cases per 100,000 population. (Baseline, 2012-2014: NYSCR)
3. By 2023, decrease the lung cancer death rate from 38.6 deaths per 100,000 population to 34.7 deaths per 100,000 population. (Baseline, 2012-2014: NYSCR)

All Screening Amenable Cancers:

By 2023, decrease barriers to screening and diagnostic services for disparate populations so that there are no significant differences in screening rates and rates of invasive or late stage diagnosis by race, ethnicity, income level, education level insurance status or geographic location. (Developmental measures - potential data sources: BRFSS and NYSCR)



For More Information

Agency for Healthcare Research and Quality – Lung Cancer Screening Tools:

<https://effectivehealthcare.ahrq.gov/decision-aids/lung-cancer-screening/home.html>

American Academy of Dermatology – Spot Skin Cancer:

www.aad.org/public/spot-skin-cancer

American Cancer Society – Cancer Screening:

www.cancer.org/healthy/find-cancer-early/cancer-screening-guidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer.html

Centers for Disease Control and Prevention – About Cancer Screening Tests:

www.cdc.gov/cancer/dcpc/prevention/screening.htm

Guide to Community Preventive Services:

www.thecommunityguide.org/topic/cancer

National Cancer Institute – Cancer Screening Overview:

www.cancer.gov/about-cancer/screening

National Colorectal Cancer Roundtable - 80% by 2018 Pledge:

<http://nccrt.org/tools/80-percent-by-2018>

NYS Department of Health – Cancer Screening and Prevention & Programs by County:

www.health.ny.gov/diseases/cancer/screening

www.health.ny.gov/diseases/cancer/services

US Preventive Services Task Force – Recommendations for Primary Care Practice:

www.uspreventiveservicestaskforce.org/Page/Name/recommendations

II-4: Treatment

All New Yorkers diagnosed with cancer will have equitable access to high quality cancer care.



Cancer treatment varies by cancer type, cancer stage, age, patient health status, preferences and values of the person undergoing treatment and, more recently, biomarker and genomic analyses of the cancer. Common barriers to quality treatment include lack of, or inadequate, health insurance coverage (which may include high deductibles or copayments), limited availability of oncology specialists or treatment centers, and inadequate information and guidance for patients about treatment options and quality of care.

In 2013, the Institute of Medicine identified six components of high-quality cancer care.⁸⁵ They include:

1. A system that supports all patients to make informed decisions about their care,
2. A well-staffed, trained and coordinated workforce,
3. A system that uses scientific research to inform medical decisions,
4. A system that uses advances in information technology to enhance quality and care delivery,
5. A system that translates evidence into clinical practice, quality measurement and performance improvement, and
6. A system that is accessible to all and uses new payment models to reward quality care and eliminate waste.

These six components provide a framework for NYS whether cancer treatment occurs in an inpatient or outpatient setting. Seamless communication and follow-up among treating oncologists, primary care providers, and hospital teams is also critical.

Cancer treatment guidelines, quality standards to measure performance, and accreditation standards for treatment facilities exist to inform quality cancer care and to improve patient outcomes. The National Comprehensive Cancer Network develops treatment guidelines that are regularly updated. The National Quality Forum and the American Society for Clinical Oncology develop quality standards for care. Nationally accepted treatment guidelines should be adopted by all cancer treatment facilities in NYS and quality standards should be adopted to measure performance.

Cancer accreditation programs include those provided by the American College of Surgeons and the National Cancer Institute and require a cancer program or center to demonstrate that rigorous standards for care and support are being met, and in some cases to conduct research and clinical trials of new treatments. When possible, inpatient and outpatient facilities providing cancer care in NYS should strive for accreditation through a nationally-recognized entity, or partner with such facilities for treatment referrals.

Common barriers to quality treatment include lack of, or inadequate, health insurance coverage (which may include high deductibles or copayments), limited availability of oncology specialists or treatment centers, and inadequate information and guidance for patients about treatment options and quality of care.

Patients and their families should be empowered to demand high quality cancer care. The following questions can be used by individuals diagnosed with cancer and their families to better understand the quality of care provided by a physician's office or treatment center:

1. Is your physician board-certified in a cancer care specialty such as oncology, radiation oncology, gynecologic oncology, or surgical oncology?
2. Does your physician have an affiliation or work at an accredited cancer center (such as an American College of Surgeons' Commission on Cancer accredited facility)?
3. Is there assistance to obtain a second opinion about your diagnosis or treatment options?
4. Does the physician office or treatment center have nurses with advanced oncology and/or chemotherapy certification?
5. Ask your physician to go over your cancer treatment plan and tell you who oversees the plan. Is the plan shared among a team of healthcare providers who can handle different parts of your care?
6. Does your physician office or treatment center have regular case conferences where your case will be discussed with different kinds of cancer treatment providers?
7. Are educational materials about your cancer treatment provided?
8. Are instructions available about what to expect and how to get help after hours if needed?
9. Are there social workers or patient navigators who can help you?
10. Can you get help with side effects you might have because of your treatment?

11. Is there someone who can help with the financial issues associated with your care?
12. Does the physician or treatment center offer information about clinical trials, including whether you might benefit from a clinical trial? (NOTE: While participation in cancer clinical trials may not affect the outcome for an individual cancer patient, clinical trials can be valuable in informing the future of cancer treatment).



Suggested Strategies

- Promote availability of the state's Medicaid Cancer Treatment Program, and ensure that treatment facilities train or have access to Designated Qualified Entities, who are responsible for enrolling clients in the program.
- Promote and, where possible, make available incentives for systems to adopt the Institute of Medicine standards for quality cancer treatment among both inpatient and outpatient cancer treatment facilities.
- Educate the public and the medical community regarding recommended guidelines for effective treatment and quality of cancer care.
- Support facilities in their efforts to achieve and maintain cancer treatment accreditation through reputable national organizations.
- Implement referral systems to ensure that people who need health insurance coverage for treatment are appropriately referred to and enrolled in public health insurance programs.

- Support patient navigation programs to help patients and families navigate the cancer care system (and support care coordination efforts).
- Reduce barriers to and increase treatment-related clinical trial enrollment across all populations through education and awareness and, when possible, expansion of access to transportation services, especially in rural areas of NYS.
- Ensure access and referral to appropriate emotional and psychosocial support services.
- Promote use of patient satisfaction survey tools that help providers improve their patients' experiences, such as tools created by the Agency for Healthcare Research and Quality.

Measurable Objectives

By 2023, improve the performance of New York hospitals accredited by the American College of Surgeons Commission on Cancer on accountability measures for breast and colon cancer treatment by 5% over baseline:

- By 2023, increase the percentage of women under age 70 receiving breast conserving surgery for breast cancer that receive radiation therapy within 1 year of diagnosis from 89.5% to 94%. (Baseline, 2013: National Cancer Database (NCDB). National average, 2013: 91.5%)
- By 2023, increase the percentage of women under age 70 with AJCC T1cN0M0, or stage IB-III hormone receptor negative breast cancer who are recommended or receive combination chemotherapy within 4 months of diagnosis from 88.8% to 93.2%. (Baseline, 2013: NCDB. National average, 2013: 92.3%)
- By 2023, increase the percentage of women with AJCC T1cN0M0, or stage iB-III hormone receptor positive breast cancer who are recommended or receive tamoxifen or third generation aromatase inhibitor within 1 year of diagnosis from 88.0% to 92.4%. (Baseline, 2013: NCDB. National average, 2013: 91.2%)
- By 2023, increase the percentage of women with 4 or more positive regional lymph nodes who are recommended or receive radiation therapy following any mastectomy within 1 year of a breast cancer diagnosis from 83.0% to 87.2%. (Baseline, 2013: NCDB. National average, 2013: 87.6%)
- By 2023, increase the percentage of men and women under the age of 80 with AJCC Stage III (lymph node positive) colon cancer who are recommended or receive adjuvant chemotherapy within 4 months of diagnosis from 86.1% to 90.4%. (Baseline, 2013: NCDB. National average, 2013: 89.3%)



For More Information

American Cancer Society – Common Types of Cancer Treatment:

www.cancer.org/treatment/treatments-and-side-effects/treatment-types.html

American College of Surgeons - Overview of Cancer Programs, Care Measures and Site Locations:

www.facs.org/quality-programs/cancer

www.facs.org/quality%20programs/cancer/ncdb/qualitymeasures

www.facs.org/search/cancer-programs

Centers for Medicare and Medicaid Services – Oncology Care Model:

<https://innovation.cms.gov/initiatives/oncology-care>

National Cancer Institute - Clinical Trials Information for Patients and Caregivers:

www.cancer.gov/about-cancer/treatment/clinical-trials

National Cancer Institute - Designated Cancer Centers:

www.cancer.gov/research/nci-role/cancer-centers

National Cancer Institute - Questions to Ask Your Doctor about your Treatment:

www.cancer.gov/about-cancer/treatment/questions

National Comprehensive Cancer Network – Guidelines for Physicians and Patients:

www.nccn.org/professionals/physician_gls/f_guidelines.asp

www.nccn.org/patients/default.aspx

National Quality Forum - Consensus Standards for Quality of Cancer Care:

www.qualityforum.org/Publications/2009/05/National_Voluntary_Consensus_Standards_for_Quality_of_Cancer_Care.aspx

NYS Department of Health – Cancer Treatment Resources:

www.health.ny.gov/diseases/cancer/treatment

II-5: Palliative Care

All New Yorkers will have access to evidence-based, evidence-informed and guideline-driven patient and family-centered palliative care services.



Palliative care focuses on the pain and symptoms associated with serious illness, including cancer. Palliative care can be provided over the continuum of care from diagnosis to death. Hospice is the Medicare-defined benefit that provides palliative care at the end of life.

The American Cancer Society reported that patients who had hospital-based palliative care visits spent less time in intensive care units and were less likely to be re-admitted to the hospital, and people who receive palliative care have better quality of life and may even experience increased survival.⁸⁶ NYS recognizes the importance of palliative care and hospice through legislation such as the Palliative Care Education and Training Act (2007), the Palliative Care Information Act (2010), the Palliative Care Access Act (2011), and the Hospice Modernization Act (2011). Pediatric palliative care services were added to NYS Care at Home I/II Medicaid waivers and the Concurrent Care for Children provisions included in the federal Patient Protection and Affordable Care Act (2010), allowing children to receive life-prolonging treatment and hospice concurrently.

Palliative care is a fast-growing field in response to the number of individuals living with serious illness, as well as the expressed need from patients and families to have more choice and control over their care.⁸⁷

Statewide efforts are needed to achieve the vision for better and more accessible palliative care, including provider training, research to document the benefits of palliative care, and strategies to incorporate high-quality palliative care in measurement, payment, and accreditation standards in the healthcare system.

The Center to Advance Palliative Care estimates that nationally up to 8% of people being admitted to hospitals need palliative care, yet on average, only 3.4% receive it.⁸⁸ Concerted statewide efforts are needed to achieve the vision for better and more accessible palliative care, including provider training, research to document the benefits of palliative care, and strategies to incorporate high-quality palliative care in measurement, payment, and accreditation standards in the healthcare system.

Measurable Objectives

1. By 2023, increase the number of healthcare professionals either board-certified or certified in hospice and palliative care:
 - a. By 2023, increase the number of New York licensed physicians and nurse practitioners with a sub-certification in palliative care from 328 to 450. (Baseline, 2017: New York State Physician Directory & New York State Education Department Nursing License Statistics)
 - b. By 2023, increase the number of registered nurses in New York who have a certification in Hospice and Palliative Care from 489 to 530. (Baseline, 2017: Hospice & Palliative Credentialing Center)
2. By 2023, improve New York State's grade on the Center to Advance Palliative Care's (CAPC) Report Card from a B to an A. (Baseline: 2015, CAPC Report: America's Care of Serious Illness, A State by State Report Card on Access to Palliative Care in Our Nation's Hospitals)



Suggested Strategies

- Promote efforts to fund palliative care-certified medical schools and residency programs under the Palliative Care Education and Training Act.
- Promote palliative care certification among physicians and nurses.
- Document patient and caregiver opinions and suggestions about the value of palliative care.
- Support the availability and incorporation of palliative care programs in appropriate healthcare settings.
- Provide education and information on palliative care and hospice to patients diagnosed with cancer and their families.
- Encourage all palliative care programs across the continuum of care to voluntarily register and participate with the National Palliative Care Registry, a free service to measure program progress and track operational capacity and reach.
- Support research to strengthen the evidence base for palliative care.
- Promote accreditation standards and quality measures for high-quality palliative care.



For More Information

American Cancer Society – Guide to Palliative or Supportive Care:

www.cancer.org/treatment/treatmentsandsideeffects/palliativecare/supportive-care

Center to Advance Palliative Care:

www.capc.org

<https://getpalliativecare.org>

<https://reportcard.capc.org>

Hospice and Palliative Care Association of NYS:

www.hpcanys.org

National Hospice and Palliative Care Organization:

www.nhpco.org

National Palliative Care Registry:

<https://registry.capc.org/>

NYS Department of Health – Palliative Care Access Act:

www.health.ny.gov/professionals/patients/patient_rights/palliative_care/phl_2997_d_memo.htm

NYS Department of Health – Palliative Care Information Act:

www.health.ny.gov/professionals/patients/patient_rights/palliative_care/information_act.htm

II-6: Survivorship

All New Yorkers will have equal access to evidence-based, evidence-informed and guideline-driven services and appropriate, high-quality follow-up care that supports cancer survivors, families and caregivers.



Advances in early detection and treatment are improving cancer outcomes, and today more individuals are living many years after a cancer diagnosis. An individual is considered a cancer survivor from the time of diagnosis until the end of their life. Over one million individuals with histories of cancer live in NYS.⁸⁹

Cancer can influence every facet of a survivor's life, presenting challenges that may impact their physical, psychological and spiritual well-being, relationships, and financial and legal matters. Survivors have a significantly higher risk of developing second cancers and may be at an increased risk of other chronic diseases.⁹⁰ Survivors typically report higher levels of depression and anxiety than non-survivors.⁹¹ They might also experience problems with employment, housing, access to benefits, and keeping track of medical records.⁹² Finally, disparities in post-treatment cancer survivorship care often exist among specific groups such as racial and ethnic minorities, people who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ), people who live in rural areas, individuals with low English proficiency, and adolescents and young adults.

A healthy lifestyle improves survival and quality of life. Therefore, cancer survivors should be encouraged to stay physically active; eat a diet of fruits, vegetables, and whole grains; avoid tobacco; and limit alcohol use.⁹³ Survivors should be monitored for recurrence of the first cancer, screened for second cancers, and be educated about possible opportunities to undergo genetic testing and counseling, when appropriate. Survivors should have access to psychosocial support; and they may also need assistance with legal matters such as will drafting, divorce, and custody, benefits or insurance coverage, housing, and employment discrimination or termination. Finally, systems-level approaches to survivor services and support are necessary within all types of health settings and not only accredited cancer centers. Such approaches include the development and use of Survivorship Care Plans as well as cancer survivorship guidelines for healthcare providers. Tools for addressing cancer survivor needs should be available to providers.⁹⁴

An individual is considered a cancer survivor from the time of diagnosis until the end of their life. An estimated 988,000 individuals with histories of cancer live in New York State.

Measurable Objectives

1. By 2023, increase the percentage of adult cancer survivors (excluding skin cancer) who report receipt of a written survivorship care plan (both a written treatment summary and instructions about routine follow-up) from 43.3% to 45.5%. (Baseline, 2012 & 2014: BRFSS)
2. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who report their physical health was not good on 14 or more of the past 30 days from 23.1% to 21.9%. (Baseline, 2016: BRFSS)
3. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who are overweight or obese from 63.4% to 60.2%. (Baseline, 2016: BRFSS)
4. By 2023, increase the percentage of adult cancer survivors (excluding skin cancer) engaging in leisure-time physical activity from 67.4% to 70.8%. (Baseline, 2016: BRFSS)
5. By 2023, decrease the percentage of cancer survivors (excluding skin cancer) who report their general health is fair or poor from 31.2% to 29.6%. (Baseline, 2016: BRFSS)
6. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who report their mental health was not good on 14 or more of the past 30 days from 13.4% to 12.7%. (Baseline, 2016: BRFSS)



Suggested Strategies

- Promote the use of standardized survivorship care plans (a written summary of cancer treatment, future care needs and available resources) by cancer survivors and their oncology and primary care providers.
- Conduct research and education about cancer survivors' needs, including adequacy of follow-up and support services, barriers encountered during the diagnostic, treatment and post-treatment phases of care and awareness and availability of support services for caregivers.
- Promote evidence-based, cancer survivorship self-management programs to help survivors address their physical and social-emotional health needs.
- Increase oncology and primary care awareness and use of existing cancer survivorship care guidelines such as those published by the American Cancer Society, American Society of Clinical Oncology, and the National Comprehensive Cancer Network.
- Share best practices related to the benefits of survivorship coordinators and navigators located in pediatric and adult oncology centers.
- Promote cancer-specific trainings and certifications to community health workers and patient coordinators and navigators focused on survivorship care.



For More Information

American Cancer Society - National Cancer Survivorship Resource Center:

www.cancer.org/survivorshipcenter

American Cancer Society - Tools for Health Care Professionals:

www.cancer.org/treatment/survivorshipduringandaftertreatment/nationalcancersurvivorshipresourcecenter/toolsforhealthcareprofessionals/index

American Childhood Cancer Organization:

www.acco.org

American College of Surgeons – Commission on Cancer:

www.facs.org/quality%20programs/cancer/coc

American Society of Clinical Oncology – Patient and Survivor Care Guidelines:

www.asco.org/practice-guidelines/quality-guidelines/guidelines/patient-and-survivor-care

CancerCare – Resources for Survivors, Caregivers, and Healthcare Professionals:

www.cancercares.org

Cancer Support Community – Resources for Survivors:

www.cancersupportcommunity.org

Centers for Disease Control and Prevention – About Cancer Survivorship:

www.cdc.gov/cancer/survivorship/?s_cid=govD_CancerSurvivorship2016_1

George Washington School Medicine & Health Science - National Cancer Survivorship Resource Center:

<https://smhs.gwu.edu/gwci/survivorship/ncsrc>

National Cancer Institute – About Cancer Survivorship:

<http://cancercontrol.cancer.gov/ocs>

National Coalition for Cancer Survivorship:

www.canceradvocacy.org

National Comprehensive Cancer Network – Clinical Practice Guidelines in Oncology:

www.nccn.org/professionals/physician_gls/f_guidelines.asp

NYS Department of Health – List of Community-Based Support Programs:

www.health.ny.gov/diseases/cancer/services/partnerships

II-7: Healthcare Workforce

All New Yorkers will have access to adequate numbers of primary care and specialty providers with demonstrated competencies in cancer prevention and control.



The cancer care workforce is an increasingly broad category of healthcare professionals, involving specialties across the continuum of care—from prevention and screening, to treatment, survivorship and palliative care. A quality, diverse, and accessible workforce is essential to meet the needs of New Yorkers and respond to cancer in New York.

Primary care providers are critical to the provision of cancer prevention strategies and early detection, and play a key role in survivorship care. Maldistribution of primary care providers, particularly in rural areas of the state, can have a negative impact on cancer outcomes. Oncologists, nurses, pharmacists, genetic counselors, mental and behavioral health clinicians, palliative care specialists, and nutritionists must stay up-to-date on the most current recommendations and evidence-based cancer treatments. Professional networks and participation in continuing education opportunities enhance knowledge around best practices and available resources. In addition, improved coordination and communication among all involved (in consultation with the patient, caregivers, and family members) is needed. Multidisciplinary teams providing specific services can positively affect treatment decisions, reduce time to treatment, and improve outcomes in patients.⁹⁵

Recruitment of oncology professionals ensures access to and support for a robust workforce. While the number of oncologists has risen over the past 10 years nationwide, there is still a significant shortage of medical and gynecologic oncologists projected in the U.S. by 2020.⁹⁶ Even though NYS has one of the highest ratios of oncologists per residents ages 55 years and older,⁹⁷ the current workforce is nearing

retirement age (the median age for oncologists in NYS is 51 years). A workforce shortage could hinder access to certified professionals and high-quality care. Shortage conditions may force individuals with cancer to travel out of their local areas or make treatment decisions based upon locally available services rather than recommended standards of care.

A quality, diverse, and accessible workforce is essential to meet the needs of New Yorkers and respond to cancer in New York.



Suggested Strategies

- Work toward equitable distribution of the primary care workforce across NYS, particularly in rural regions.
- Increase the diversity of the oncology health workforce to better match the composition of the NYS population.
- Partner with professional organizations which represent non-white and female professionals and provide information on the need for oncology specialists and certification and training opportunities.
- Build awareness and support for cancer-related fields as a career option, including subspecialties that relate to specific needs in the oncology field (e.g., palliative care).

- Collaborate with Area Health Education Centers on training and recruitment projects in rural and underserved areas.
- Support on-going competency in cancer care for primary care and oncology practitioners.
 - Provide continuing education and specialty certification with up-to-date information and evidence-based resources related to cancer care.
 - Expand professional networks amongst practitioners to bolster peer support and capacity.
 - Increase emphasis on use of multi-professional teams from a variety of backgrounds and specialties such as primary care physicians, nurses, mental and behavioral health clinicians, genetic counselors, pain and palliative care specialists, and caregivers for their contributions to and delivery of care.
 - Support new curriculum and training programs specifically around cancer care coordination for nurses, social workers, patient navigators, and community health workers.
- Provide ongoing cultural competence education to the entire healthcare work force, especially for those who interact with patients who are LGBTQ, have a disability, are immigrants, and are from other disparate communities; as well as their families and the people they have chosen to provide support.
- Reduce barriers to the supply of, and access to, cancer care providers in NYS:
 - Implement Patient Protection and Affordable Care Act (PPACA) provisions for loan forgiveness and other activities aimed at building the healthcare workforce.
 - Encourage additional use of telemedicine, particularly in medical shortage areas.
 - Ensure health profession education programs use up-to-date resources and evidence-based information in curriculum and training protocols.



For More Information

Board of Oncology Social Work Certification:

www.oswcert.org

Boards of Cooperative Education Services of NYS:

www.boces.org

National Area Health Education Center System:

www.nationalahec.org

NYS Area Health Education Center System:

<http://nysahec.org>

University at Albany, Center for Health Workforce Studies:

www.albany.edu/sph/chws.php

Appendix A: What New Yorkers Can Do to Reduce the Burden of Cancer

A Call to Action: This appendix contains ideas and activities for individuals and organizations of all kinds to help reduce the burden of cancer in New York State. No matter how small these activities may seem, all New Yorkers can make a difference at home, at work, and in their communities. Use these suggested activities and pledge to take action today.

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which all New Yorkers can make a difference at home, at work, and in their communities.



- If you use tobacco, quit. If you don't use tobacco, don't start.
- Eat nutritious meals that include fruits, vegetables and whole grains.
- Get moving for at least 30 minutes a day on five or more days each week.
- Use sunscreen, monitor sun exposure and avoid tanning salons.
- Limit alcohol use.
- Get cancer-preventive vaccines such as hepatitis B and HPV.
- Learn your family health history (if possible) and discuss with your healthcare provider whether genetic counseling might be right for you.
- Discuss what cancer screening tests might be right for you with your healthcare provider.
- Test your home for radon.
- Volunteer your time and donate money to cancer organizations and events.
- For women of child-bearing age, know the benefits of breastfeeding and, if possible, breast-feed infants exclusively for at least the first six months of life.

As a New Yorker, I pledge to do the following to reduce the burden of cancer:

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which healthcare providers or healthcare organizations can make a difference in their communities.



- Routinely ask patients about lifestyle factors, including alcohol and tobacco use, physical activity, diet, vaccinations, and in-home radon testing.
- Provide culturally relevant counseling, information, and referrals for cancer screening tests.
- Ensure patients are screened for cancer in accordance with the most current guidelines and implement a cancer screening reminder system.
- Adhere to guidelines and best practices for cancer prevention, treatment, and supportive care.
- Refer and encourage patients to enroll in cancer clinical trials.
- Incorporate palliative care into your practice and make referrals to hospice.
- Provide cancer patients with a written summary of their care plan.
- Submit complete cancer case reports in a timely manner to the NYS Cancer Registry.
- Provide ongoing resources to the entire healthcare workforce about considerations working with disparate populations.

-
- Implement tobacco-free grounds and campus policies.
 - Implement office-based reminders that identify patients due for cancer prevention and screening services.
 - Sponsor patient navigation and survivorship programs.
 - Offer clinical cancer research opportunities to patients.
 - Provide ongoing resources to the entire healthcare workforce about considerations working with disparate populations.
 - Distribute culturally and linguistically appropriate cancer prevention, screening, treatment, survivorship and palliative care services information.
 - Provide meeting space for cancer support and survivorship groups.
 - Help develop and expand educational options for new and potential healthcare oncology workers.
 - Submit complete cancer case reports in a timely manner to the NYS Cancer Registry.
 - Seek or maintain accreditation through American College of Surgeons and The Joint Commission on Cancer.
 - Ensure that all New Yorkers have access to healthcare screening, early detection services, and treatment.

As healthcare provider or organization, I pledge to do the following to reduce the burden of cancer:

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which local health departments can make a difference in their communities.



- Support policy, environmental, and systems changes for cancer prevention and control.
- Provide information about cancer prevention and screening programs in the community.
- Partner with local healthcare systems to provide patient navigation services for clients and access to low-cost cancer screening.
- Provide access to low-cost radon test kits.
- Collaborate on community wellness activities and awareness events.
- Provide meeting space for cancer support and survivorship groups.



- Promote healthy practices among community members by promoting tobacco cessation and providing healthy foods at activities and events.
- Provide cancer prevention information to members and clients.
- Partner with local healthcare partners to provide programs in the community on cancer prevention and screening, especially among local populations facing health disparities.
- Sponsor a health fair, cancer awareness campaign, or community forum in collaboration with community partners.
- Promote or provide activities specifically for cancer survivors and their families.
- Encourage participation in clinical trials.

As a local health department, I pledge to do the following to reduce the burden of cancer:

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which employers can make a difference in their communities.



- Institute and promote healthy policies: make your organization a tobacco-free campus; provide healthy foods at meetings and in vending machines; provide space for breastfeeding moms; offer paid time off for cancer screening and encourage employees to increase physical activity.
- If you provide employees with insurance coverage, select products that cover cancer prevention and screening services with no cost sharing.
- Collaborate with healthcare institutions to host screening events.
- Establish a worksite wellness committee.
- Provide protective clothing, equipment, and sun safety to employees to reduce exposure to carcinogens.
- Provide information to cancer survivors and their co-workers about issues faced as survivors return to work.
- Seek or maintain **CEO Cancer Gold Standard™** accreditation.

As an employer, I pledge to do the following to reduce the burden of cancer:

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which policy makers or elected officials can make a difference in their communities.



- Raise constituents’ awareness about cancer prevention and control programs in your district and help establish new programs where needed.
- Sponsor or support policies and funding that promotes cancer research, prevention, and control.
- Ensure that all New Yorkers have access to healthcare screening, early detection services, and treatment.

As a policy maker or an elected official, I pledge to do the following to reduce the burden of cancer:

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

A Call to Action: What New Yorkers Can Do to Reduce the Burden of Cancer

The New York State Cancer Consortium believes that preventing and controlling cancer requires individuals and organizations of all kinds to get involved and make contributions— however small they may seem. The following activities list some of the many ways in which educational institutions can make a difference in their communities.



- Make your campus a tobacco-free environment.
- Provide healthy foods in vending machines, cafeterias, and dining halls.
- Meet or exceed physical education requirements.
- Encourage sun-safe behaviors and discourage indoor tanning usage.
- Include cancer prevention messages in health classes.
- Open select facilities to the community for walking and other physical activity during off hours.
- Sponsor a health fair, cancer awareness campaign, or educational seminar in collaboration with community partners.
- Institute policies that promote health and wellness among employees and students, such as employee benefit packages which include comprehensive cancer coverage.
- Support research studies to reduce health disparities due to factors such as socioeconomic status, ethnicity, race, age, disability, sexual orientation, and health literacy.

As an educational institution, I pledge to do the following to reduce the burden of cancer:

Appendix B: New York State Cancer Consortium General Membership

Action to Cure Kidney Cancer
Adelphi NY Statewide Breast Cancer Hotline
Affinity Health Plan
Albany Law School
Albany Medical Center
Albert Einstein College of Medicine
American Cancer Society
American Congress of OB/GYNs
American Italian Cancer Foundation
American Lung Association of the Northeast
Association of Pediatric Oncology Social Workers
Bassett Medical Center
Bellevue Hospital Center
Bikur Cholim Partners in Health
Brooklyn Hospital Center
The Brooklyn Minority Based Community Clinical Oncology Program
Broome County Health Department
Cancer Resource Center of the Finger Lakes
Cancer Services Program of Albany & Rensselaer Counties
Cancer Services Program of Chautauqua County
Cancer Services Program of Fulton, Montgomery, & Schenectady Counties
Cancer Services Program of Genesee & Orleans Counties
Cancer Services Program of Manhattan-NewYork-Presbyterian Hospital
Cancer Support Team
CancerCare
Canton-Potsdam Hospital
Capital Region BOCES
Capital Region Urological Surgeons
Catholic Health c/o Mercy Hospital
Catie Hoch Foundation
Childhood Cancer Coalition
Cattaraugus County Health Department
CGK Consulting
Champlain Valley Physicians Hospital Medical Center
Chenango County Department of Health
Children's Brain Tumor Foundation
City Bar Justice Center of the NYC Bar Association
Colon Cancer Challenge Foundation
Columbia County Community Healthcare Consortium
Columbia University
Columbia University Medical Center
Coney Island Hospital
Continuum Cancer Center/Beth Israel Medical Center
Cornell Cooperative Extension of Delaware County
Cornell University
Cortland County Health Department
Champlain Valley Physicians Hospital Medical Center
Dutchess County Health Department
Ellis Medicine
Emblem Health
Erie County Department of Health
Excellus Blue Cross/Blue Shield
The Family Center
Ferre Institute, Inc.
Franklin County Public Health
Genesee Valley BOCES
Gilda's Club-Westchester
Gilda's Club-Rochester
Glens Falls Hospital
Grassroots Environmental Education
Health Quest
Healthy Community Alliance, Inc.
Hospice & Palliative Care Association of New York State
Hudson River Health Care
Icahn School of Medicine at Mount Sinai
Institute for Family Health
IPRO
Islip Breast Cancer Coalition
Jefferson County Public Health Service
Jewish Family Services
LESS CANCER
Leukemia & Lymphoma Society
Maimonides Infants & Children's Hospital

Memorial Sloan Kettering Cancer Center
Montefiore Medical Center
Mount Sinai School of Medicine
Nassau/Suffolk Law Services Committee
New York Academy of Medicine
New York City Administration for Children's Services
New York City Department of Health and Mental Hygiene
New York Health Plan Association Council
New York Legal Assistance Group
New York Oncology, LLC
NewYork-Presbyterian Columbia Cancer Network
NewYork-Presbyterian Lawrence Hospital
NewYork-Presbyterian Queens
New York State Council of Health-systems Pharmacists
New York State Dental Foundation
New York State Department of Health
New York State Prostate Cancer Coalition
New York University Langone Medical Center-
Laura and Isaac Perlmutter Cancer Center
Northeast Health-Albany Memorial & Samaritan Hospitals
Northern Appalachia Cancer Network
Northern Westchester Hospital
Northwell Health
O'Connor Hospital
Oswego County Opportunities, Inc.
Rensselaer County Health Department
Rockland County Health Department

Roswell Park Cancer Institute
S2AY Rural Health Network
The Sage Colleges
Samaritan Hospital
SCD Consulting, Cullari Communications Global
Seneca Nation of Indians
Sharsheret
Sid Jacobson JCC
South Nassau Hospital
Southern Tier Healthy Living Partnership
St. Barnabas Hospital
St. Peter's Health Partners
Stony Brook University
Suffolk County Health Department
Support Connection, Inc.
Susan G. Komen for the Cure, NENY Affiliate To Life!
Ulster County Health Department
University at Albany, SUNY
University at Buffalo, SUNY
University of Rochester
Upstate Medical Center, SUNY
VA New York Harbor Healthcare System
Vassar Brothers Medical Center
Warren County Health Services
Wellcard Health Plans
Westchester County Health Department
Western New York Public Health Alliance
WestMed Medical Group
Winthrop University Hospital

Appendix C: New York State Cancer Consortium Steering Committee

Linda Bily, MA, CSA, OPN-CG

Stony Brook Cancer Center/Stony Brook University

Alvaro Carrascal, MD, MPH

American Cancer Society

Heather Dacus, DO, MPH

NYS Department of Health

Deborah O. Erwin, PhD

Roswell Park Cancer Institute

Shaun Flynn

New York State Council of Health-system Pharmacists

Cheryl Gelder-Kogan

Co-Chair, Steering Committee
CGK Consulting

Larisa Geskin, MD, FAAD

Columbia University and Columbia University Medical Center

Lina Jandorf

Icahn School of Medicine at Mount Sinai

Stephen Jennings, MS

Jefferson County Public Health Services

Maureen Killackey, MD, FACS, FACOG

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Leslie J. Kohman, MD

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Melissa Lang, DrPH, MPH, MPA, MA

Gilda's Club Westchester

James Leonardo, MD, PhD, FACP

Health Quest, Dyson Center for Cancer Care

Jean LePere, MPH, MS

NewYork-Presbyterian/Lawrence Hospital

Justin List, MD, MAR, MSc

New York City Department of Health and Mental Hygiene

Mary McFadden

Broome County Department of Health

Anita McFarlane

Co-Chair, Steering Committee
NYU Langone Health/Laura and Isaac Perlmutter Cancer Center

Leslie Moran

New York Health Plan Association

Laura Ortiz, MA

Montefiore Einstein Center for Cancer Care

George Raptis, MD

Northwell Health

Karen Schmitt MA, RN

NewYork-Presbyterian/Columbia University Medical Center

Maria J. Schymura, PhD

New York State Department of Health

Bill Sherman

American Cancer Society, Cancer Action Network

Darryl Somayaji, PhD, RN

University at Buffalo

Brian Tomlinson, MPA, BSW

CancerCare

Appendix D: About the 2018-2023 Comprehensive Cancer Control Objectives

The New York State Comprehensive Cancer Control Plan 2018-2023 (Plan) includes over 50 objectives to guide policies, programs, and other actions to reduce the cancer burden in New York State. There are two types of objectives: measurable and developmental. Measurable objectives have a baseline measure derived from a currently established, reliable data source. These measures provide a basis for tracking and monitoring changes in priority areas in cancer prevention and control and for evaluating the collective impact of statewide cancer prevention and control efforts. Developmental objectives indicate topics important to cancer prevention and control but which lack a baseline data source. Potential data sources that could provide baseline data are identified for developmental objectives and efforts should focus on data collection in these areas.

In late 2016, draft objectives were prepared in collaboration with the New York State Cancer Consortium Steering Committee. The proposed objectives included both objectives from previous versions of the Plan that have been updated based on new data, knowledge and guidelines, and new objectives based on emerging priority areas for cancer prevention and control. Proposed objectives were made available for review by content area experts and for public comment from the larger New York State Cancer Consortium membership.

Target Setting for Measurable Objectives:

Measurable objectives in the Plan were developed using the SMART (Specific, Measurable, Attainable, Realistic, Timely) approach. Each includes a measure, or tracking indicator, and specific target for improvement to be achieved by year 2023. Baseline data provide the point from which the 2023 target is set. The methods below served as guidance for determining appropriate targets.

1. Past performance of measure and knowledge of current state and national priorities and interventions was reviewed to determine reasonable 2023 targets. The progress of a measure was assessed by comparing the 2012-2017 Plan baseline estimate to data from the most recent period, using the following approaches:
 - a. To determine whether the change in a measure was statistically significant, confidence intervals of the estimates for the most recent period and baseline were compared for indicators where confidence intervals could be calculated. The difference between estimates was considered statistically significant at the 95% confidence level if the estimates did not have overlapping confidence intervals.
 - b. A simple comparison of the two estimates based on their magnitude was conducted when there was an insufficient amount of data to conduct significance testing or if confidence intervals could not be calculated.
2. Objectives and targets were aligned with national (Healthy People 2020) or state (Prevention Agenda 2013-2018) objectives and target-setting methodology, when available and appropriate.

3. Targets for objectives lacking trend data or sufficient information to inform a target (such as a new priority area) were determined using the Healthy People 2020 target-setting method of increasing or decreasing the baseline by 5% to 10% of the baseline percentage.

II-1 - CANCER-RELATED HEALTH DISPARITIES IN NEW YORK

- Select cancer-related health disparity measurable objectives are included in topic-specific sections of the plan.

II-2 - HEALTH PROMOTION & CANCER PREVENTION

II-2.1: Alcohol Use

1. By 2023, decrease the percentage of adults who report binge drinking within the past 30 days from 17.5% to 15.8%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
2. By 2023, decrease the percentage of adults who report heavy drinking within the past 30 days from 5.9% to 5.3%. (Baseline, 2016: BRFSS)
3. By 2023, decrease the percentage of youth in grades 9 to 12 reporting the use of alcohol on at least one day within the past 30 days from 29.7% to 26.7%. (Baseline, 2015: Youth Risk Behavior Survey [YRBS])

II-2.2: Environmental & Occupational Exposure

- No measurable or developmental objectives relevant to this focus area's goals and suggested strategies were identified during the Plan development process.

II-2.3: Genetics & Family Health History

1. By 2023, assess available data sources to measure items such as (Developmental measures):
 - a. The number of moderate- and high-risk individuals who receive appropriate screening and referral to cancer genetic services.
 - b. The use of hereditary cancer risk assessment, including genetic counseling and appropriate genetic testing.
 - c. The percentage of colorectal tumors tested for inherited gene mutations.

II-2.4: Physical Activity, Nutrition, & Breastfeeding

1. By 2023, decrease the percentage of adults who:
 - a. Are obese (BMI ≥ 30) from 25.5% to 24.2%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
 - b. Are overweight (BMI 25.0-29.9) from 35.3% to 33.5%. (Baseline, 2016: BRFSS)
2. By 2023, decrease the percentage of children and adolescents who are obese:
 - a. Among public school students statewide (excluding NYC) from 17.3% to 15.6%. (Baseline, 2012-2014: Student Weight Status Category Reporting System [SWSCRS])
 - b. Among public school students in NYC from 21.4% to 19.3%. (Baseline, 2015: NYC Fitnessgram)
3. By 2023, decrease the percentage of adults who do not participate in any leisure-time physical activity from 26.3% to 23.7%. (Baseline, 2016: BRFSS)
4. By 2023, increase the percentage of adults who participate in enough Aerobic and Muscle Strengthening exercises to meet current guidelines from 20.0% to 21.0%. (Baseline, 2015: BRFSS)
5. By 2023, decrease the percentage of adults who consume fruits less than one time daily from 37.4% to 35.5%. (Baseline, 2015: BRFSS)

6. By 2023, decrease the percentage of adults who consume vegetables less than one time daily from 22.4% to 20.2%. (Baseline, 2015: BRFSS)
7. By 2023, increase the percentage of mothers who:
 - a. Breastfeed their babies at 6 months from 55.8% to 60.6%. (Baseline, 2016: CDC National Immunization Survey [CDC NIS])
 - b. Exclusively breastfeed their babies at 6 months from 19.7% to 25.5%. (Baseline, 2016: CDC NIS)

II-2.5: Tobacco Use

1. By 2023, decrease the percentage of adolescents in grades 9-12 who use any tobacco, including e-cigarettes, from 25.4% to 17.7%. (Baseline, 2016: NYS Youth Tobacco Survey [NY-YTS])
2. By 2023, decrease the percentage of adults ages 18 years and older who are current cigarette smokers from 14.2% to 9.9%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])

Reduce disparity:

 - a. By 2023, decrease the percentage of adults ages 18 years and older with a household income less than \$25,000 from 19.8% to 13.8%. (Baseline, 2016: BRFSS)
 - b. By 2023, decrease the percentage of adults ages 18 years and older who report poor mental health from 26.0% to 18.2%. (Baseline, 2016: BRFSS)
3. By 2023, increase the percentage of smokers reporting that their healthcare providers assisted them with smoking cessation from 52.5% to 62.4%. (Baseline, 2016: NYS Adult Tobacco Survey [NY-ATS])
4. By 2023, increase the percentage of smokers who made a quit attempt during the past 12 months from 64.2% to 71.3%. (Baseline, 2016: NY-ATS)
5. By 2023, decrease the percentage of adults who report being exposed to secondhand smoke during the past seven days from 16.2% to 11.3%. (Baseline, 2016: NY-ATS).

II-2.6: Ultraviolet Radiation

1. By 2023, decrease the melanoma death rate from 2.2 deaths per 100,000 population to 1.9 deaths per 100,000 population. (Baseline, 2012-2014: New York State Cancer Registry [NYSCR])
2. By 2023, decrease the rate of melanoma among adults ages 20 to 34 years from 5.5 cases per 100,000 population to 5.2 cases per 100,000 population. (Baseline, 2012-2014: NYSCR)

II-2.7: Vaccine-Preventable & Infectious Disease-Related Cancers

- a. By 2023, increase the percentage of adolescents ages 13 to 17 years who have received the HPV vaccine in accordance with the most recent ACIP recommendations:
 - a. By 2023, increase the percentage of male and female adolescents ages 13 to 17 years who have completed the recommended number of doses of the HPV vaccine from 55.7% to 80.0%. (Baseline, 2016: NIS-Teen)
- b. By 2023, maintain the percentage of children who have received the HBV vaccine in accordance with the most recent ACIP recommendations:
 - a. By 2023, maintain the percentage of children ages 19 to 35 months who have received all three recommended doses of the HBV vaccine at 90% or above. (Baseline, 2016: 93.5%, NIS)
 - b. By 2023, maintain the percentage of infants who have received at least one dose of the HBV vaccine from birth to 3 days of age at 80% or above. (Baseline, 2015: 83.8%, NY Statewide Perinatal Data System)

- c. By 2023, increase the percentage of NYS adults born between 1945 and 1965 who report having ever been tested for hepatitis C from 32.1% to 35.3%. (Baseline, 2014: Behavioral Risk Factor Surveillance System)
- d. By 2023, decrease the rate of liver cancer from 7.6 cases per 100,000 population to 7.2 cases per 100,000 population. (Baseline, 2012-2014: New York State Cancer Registry)

II-3 - EARLY DETECTION

Breast Cancer:

- 1. By 2023, increase the percentage of women who receive a breast cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of women ages 40 to 49 years who have received a mammogram within the past two years from 66.0% to 69.3%. (Baseline, 2016: Behavioral Risk Factor Surveillance System [BRFSS])
 - b. By 2023, increase the percentage of women ages 50 to 74 years who have received a mammogram within the past two years from 79.7% to 87.7%. (Baseline, 2016: BRFSS)
- 2. By 2023, decrease the rate of female breast cancer identified at late stages from 42.4 cases per 100,000 females to 38.2 cases per 100,000 females. (Baseline, 2012-2014: New York State Cancer Registry [NYSCR])

Cervical Cancer:

- 1. By 2023, increase the percentage of women who receive a cervical cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of women ages 21 to 65 years who have received a Pap test within the past three years or women ages 30 to 65 years who have received a Pap and HPV co-test within the past five years from 82.2% to 86.3%. (Baseline, 2016: BRFSS)
- 2. By 2023, decrease the rate of invasive cervical cancer from 7.7 cases per 100,000 females to 6.9 cases per 100,000 females. (Baseline, 2012-2014: NYSCR)

Colorectal Cancer:

- 1. By 2023, increase the percentage of adults who receive a colorectal cancer screening based on the most recent guidelines:
 - a. By 2023, increase the percentage of adults ages 50 to 75 years who received either a blood stool test within the past year, or a sigmoidoscopy within the past 5 years and a blood stool test within the past 3 years, or a colonoscopy within the past 10 years from 68.5% to 80.0%. (Baseline, 2016: BRFSS)

Reduce disparity:

- b. By 2023, increase the percentage of adults ages 50 to 75 years with an income <\$25,000 who received either a blood stool test within the past year, or a sigmoidoscopy within the past 5 years and a blood stool test within the past 3 years, or a colonoscopy within the past 10 years from 60.7% to 63.7%. (Baseline, 2016: BRFSS)
- 2. By 2023, decrease the rate of invasive colorectal cancer from 39.4 cases per 100,000 population to 35.5 cases per 100,000 population. (Baseline, 2012-2014: NYSCR)

Lung Cancer:

1. By 2023, establish a means by which to assess the percentage of high risk adults who are screened for lung cancer based on the most recent guidelines. (Developmental measure - potential data source: BRFSS)
2. By 2023, decrease the rate of lung cancer identified at late stages from 42.8 cases per 100,000 population to 38.5 cases per 100,000 population. (Baseline, 2012-2014: NYSCR)
3. By 2023, decrease the lung cancer death rate from 38.6 deaths per 100,000 population to 34.7 deaths per 100,000 population. (Baseline, 2012-2014: NYSCR)

All Screening Amenable Cancers:

1. By 2023, decrease barriers to screening and diagnostic services for disparate populations so that there are no significant differences in screening rates and rates of invasive or late stage diagnosis by race, ethnicity, income level, education level insurance status or geographic location. (Developmental measures- potential data sources: BRFSS and NYSCR)

II-4 - TREATMENT

1. By 2023, improve the performance of New York hospitals accredited by the American College of Surgeons Commission on Cancer on accountability measures for breast and colon cancer treatment by 5% over baseline:
 - a. By 2023, increase the percentage of women under age 70 receiving breast conserving surgery for breast cancer that receive radiation therapy within 1 year of diagnosis from 89.5% to 94%. (Baseline, 2013: National Cancer Database (NCDB). National average, 2013: 91.5%)
 - b. By 2023, increase the percentage of women under age 70 with AJCC T1cN0M0, or stage IB-III hormone receptor negative breast cancer who are recommended or receive combination chemotherapy within 4 months of diagnosis from 88.8% to 93.2%. (Baseline, 2013: NCDB. National average, 2013: 92.3%)
 - c. By 2023, increase the percentage of women with AJCC T1cN0M0, or stage iB-III hormone receptor positive breast cancer who are recommended or receive tamoxifen or third generation aromatase inhibitor within 1 year of diagnosis from 88.0% to 92.4%. (Baseline, 2013: NCDB. National average, 2013: 91.2%)
 - d. By 2023, increase the percentage of women with 4 or more positive regional lymph nodes who are recommended or receive radiation therapy following any mastectomy within 1 year of a breast cancer diagnosis from 83.0% to 87.2%. (Baseline, 2013: NCDB. National average, 2013: 87.6%)
 - e. By 2023, increase the percentage of men and women under the age of 80 with AJCC Stage III (lymph node positive) colon cancer who are recommended or receive adjuvant chemotherapy within 4 months of diagnosis from 86.1% to 90.4%. (Baseline, 2013: NCDB. National average, 2013: 89.3%)

II-5 - PALLIATIVE CARE

1. By 2023, increase the number of healthcare professionals either board-certified or certified in hospice and palliative care:
 - a. By 2023, increase the number of New York licensed physicians and nurse practitioners with a sub-certification in palliative care from 328 to 450. (Baseline, 2017: New York State Physician Directory & New York State Education Department Nursing License Statistics)
 - b. By 2023, increase the number of registered nurses in New York who have a certification in

Hospice and Palliative Care from 489 to 530. (Baseline, 2017: Hospice & Palliative Credentialing Center)

2. By 2023, improve New York State's grade on the Center to Advance Palliative Care's (CAPC) Report Card from a B to an A. (Baseline: 2015, CAPC Report: America's Care of Serious Illness, A State by State Report Card on Access to Palliative Care in Our Nation's Hospitals).

II-6 – SURVIVORSHIP

1. By 2023, increase the percentage of adult cancer survivors (excluding skin cancer) who report receipt of a written survivorship care plan (both a written treatment summary and instructions about routine follow-up) from 43.3% to 45.5%. (Baseline, 2012 & 2014: BRFSS)
2. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who report their physical health was not good on 14 or more of the past 30 days from 23.1% to 21.9%. (Baseline, 2016: BRFSS)
3. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who are overweight or obese from 63.4% to 60.2%. (Baseline, 2016: BRFSS)
4. By 2023, increase the percentage of adult cancer survivors (excluding skin cancer) engaging in leisure-time physical activity from 67.4% to 70.8%. (Baseline, 2016: BRFSS)
5. By 2023, decrease the percentage of cancer survivors (excluding skin cancer) who report their general health is fair or poor from 31.2% to 29.6%. (Baseline, 2016: BRFSS)
6. By 2023, decrease the percentage of adult cancer survivors (excluding skin cancer) who report their mental health was not good on 14 or more of the past 30 days from 13.4% to 12.7%. (Baseline, 2016: BRFSS)

II-7 - HEALTHCARE WORKFORCE

- No measurable or developmental objectives relevant to this focus area's goals and suggested strategies were identified during the Plan development process.

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