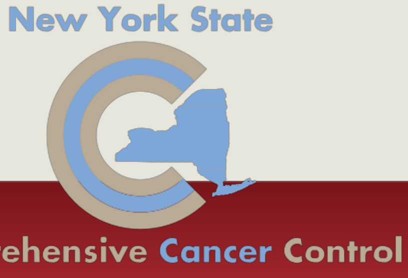
# 2012-2017
# New York State Comprehensive Cancer Control Plan



## The burden of cancer in New York State is high.

- Cancer is the second leading cause of death in New York State.
- Approximately 288 New Yorkers are diagnosed with cancer each day and more than 96 New Yorkers die each day from cancer.

## Some cancers can be prevented.

- About one-third of cancers can be attributed to tobacco use, while another one-third can be attributed to poor nutrition, physical inactivity and obesity. Despite these facts, in 2011:
  - Eighteen percent of adult New Yorkers were cigarette smokers.
  - Obesity rates continued to rise, and almost one-quarter of New York adults were obese.
  - Only 27 percent of adults in New York consumed five or more fruits and vegetables a day.
  - Nearly 80 percent of New York adults did not meet recommended physical activity guidelines, and over one quarter did not exercise at all.
- Virtually all cervical cancers are caused by Human papillomavirus (HPV). In 2011, only 34 percent of females aged 13 to 17 in New York had received all three recommended doses of the HPV vaccination.
- A majority of melanoma cases, the deadliest form of skin cancer, are attributed to excessive, unprotected ultraviolet (UV) exposure.

## Some screening tests can help find cancer at early stages when treatment is more effective and, in some cases, can detect growths before they become cancerous.

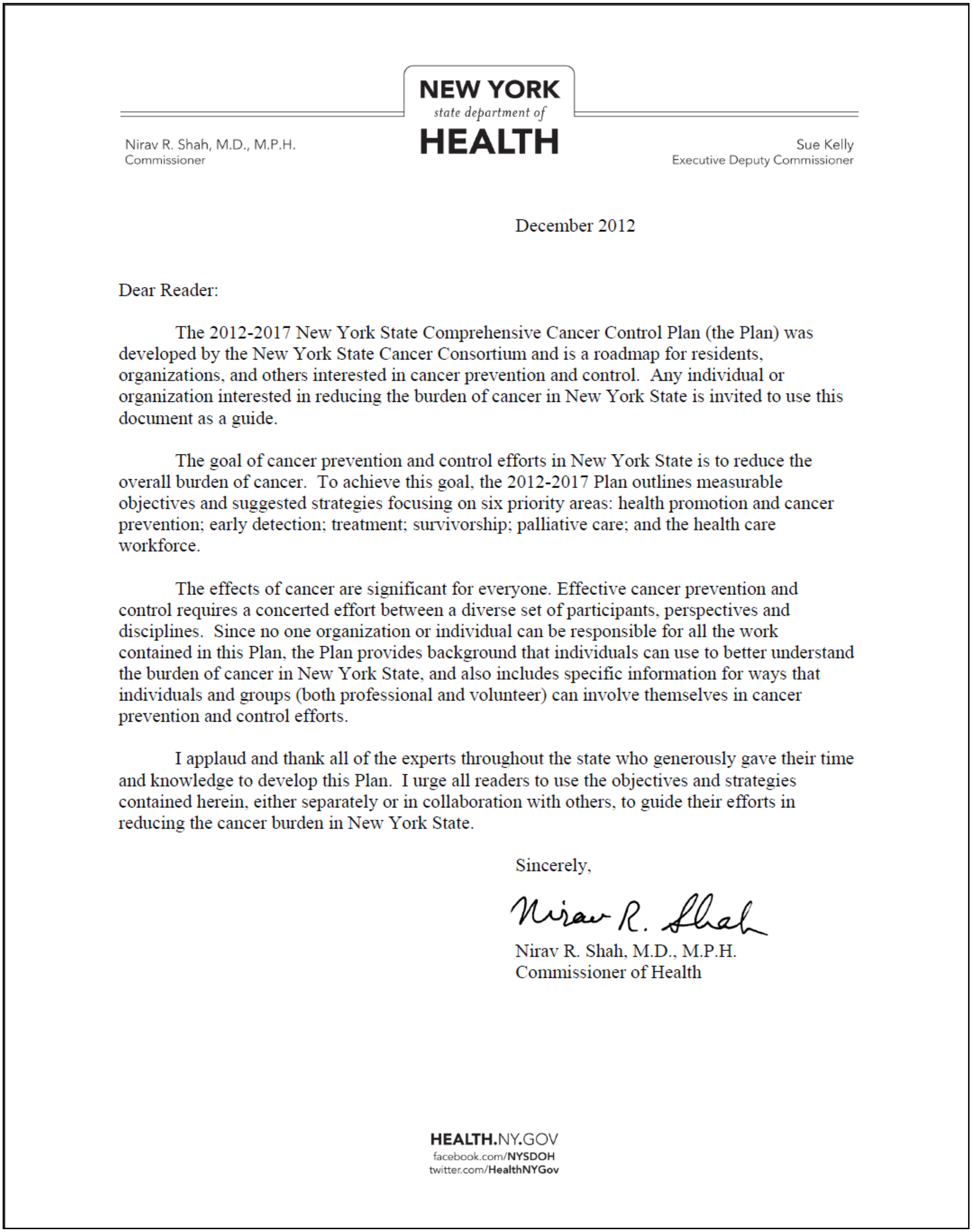
- Screening is effective in identifying breast, cervical and colorectal cancers. In New York during 2010:
  - 77 percent of women 40 and older were screened for breast cancer.
  - 84 percent of women 18 and older were screened for cervical cancer.
  - 70 percent of adults ages 50 and older were screened for colorectal cancer.
- Lack of health insurance coverage is a barrier preventing adults from obtaining recommended cancer screening exams.

## The effects of cancer do not end with the last treatment, and the number of cancer survivors continues to rise.

- There are nearly 1 million cancer survivors in New York State, representing about 4 percent of the population.
- As the number of older New Yorkers increases, so likely will the number of cancer survivors.

## The New York State Comprehensive Cancer Control Plan seeks to reduce cancer's burden on New Yorkers by outlining a comprehensive approach to:

- Prevent cancer by encouraging healthy behaviors and fostering communities that support and reinforce healthy lifestyles.
- Increase early detection of cancer by raising awareness of and access to evidence-based cancer screenings.
- Increase access to quality cancer treatment.
- Improve the integration of palliative care in cancer treatment and care.
- Improve the quality of life for cancer survivors.
- Sustain an adequate health care workforce to meet the need for all cancer services.



NEW YORK
state department of
HEALTH

Nirav R. Shah, M.D., M.P.H.
Commissioner

Sue Kelly
Executive Deputy Commissioner

December 2012

Dear Reader:

The 2012-2017 New York State Comprehensive Cancer Control Plan (the Plan) was developed by the New York State Cancer Consortium and is a roadmap for residents, organizations, and others interested in cancer prevention and control. Any individual or organization interested in reducing the burden of cancer in New York State is invited to use this document as a guide.

The goal of cancer prevention and control efforts in New York State is to reduce the overall burden of cancer. To achieve this goal, the 2012-2017 Plan outlines measurable objectives and suggested strategies focusing on six priority areas: health promotion and cancer prevention; early detection; treatment; survivorship; palliative care; and the health care workforce.

The effects of cancer are significant for everyone. Effective cancer prevention and control requires a concerted effort between a diverse set of participants, perspectives and disciplines. Since no one organization or individual can be responsible for all the work contained in this Plan, the Plan provides background that individuals can use to better understand the burden of cancer in New York State, and also includes specific information for ways that individuals and groups (both professional and volunteer) can involve themselves in cancer prevention and control efforts.

I applaud and thank all of the experts throughout the state who generously gave their time and knowledge to develop this Plan. I urge all readers to use the objectives and strategies contained herein, either separately or in collaboration with others, to guide their efforts in reducing the cancer burden in New York State.

Sincerely,

Nirav R. Shah

Nirav R. Shah, M.D., M.P.H.
Commissioner of Health

HEALTH.NY.GOV
facebook.com/NYSDOH
twitter.com/HealthNYGov

# Foreword

The first version of the New York State (NYS) Comprehensive Cancer Control Plan (the Plan) covered the period from 2003 to 2010, providing a strategic plan for cancer control across NYS. In those eight years, NYS and the nation saw tremendous changes in health care through innovations in technology and medicine, health care reform and changing state demographics. Between 2005 and 2009, the rate of new cancer cases for all cancer types remained relatively stable. In comparison, the rate of cancer-related deaths for all cancer types decreased by an average of 2 percent across each of these years.[1]

The last decade has shown great strides in cancer prevention and control. Thanks to tobacco control efforts such as implementation of high excise taxes and aggressive health communication campaigns, cigarette use among adolescents and adults in New York has continually declined over the last decade, with New Yorkers smoking at rates below national averages. While rates of breast and cervical cancer screening have remained relatively stable in the last decade, rates of colorectal cancer screening in men and women ages 50 years and older increased significantly. Advances in early detection and treatment are improving cancer outcomes, and today more individuals are living many years after cancer diagnoses. Since the release of the first Plan, palliative care has become better understood as an adjunct to treatment and supportive services, as opposed to the signaling of treatment failure or imminent death.

Despite progress made in these areas, cancer continues to be the second leading cause of death in NYS and, although decreases were seen in the number of new cases of lung, female breast, colorectal and prostate cancer, these cancer types remain the most common cancers diagnosed in NYS men and women and still account for approximately half of all cancer cases and deaths in NYS. In addition, cancer data show that certain groups in New York continue to suffer disproportionately from cancer and its effects. The risk of developing or dying from cancer varies across populations and disparities are more pronounced with specific cancers.

This updated Plan for 2012-2017 was created over an 18-month period by the NYS Cancer Consortium (Appendix A), a statewide network of individuals and organizations dedicated to addressing the cancer burden in NYS (www.nyscancerconsortium.org). Upon review of the cancer burden and evidence-based activities and promising practices, the Consortium, under the guidance of a competitively selected consultant, identified six priority areas for action: Health Promotion and Cancer Prevention, Early Detection, Treatment, Survivorship, Palliative Care, and Health Care Workforce. The Consortium will use the Plan to develop annual action plans that prioritize the efforts and activities of its membership and will track progress on an annual basis to adjust or reprioritize activities as appropriate.

While the Plan is developed by the Consortium, no one organization or individual can be responsible for all the work contained within this document. Effective strategies for cancer prevention and control require a concerted effort across disciplines. The Plan is a guide for community members, policy makers, advocates and health care professionals to use as they engage in actions and initiatives to ease the burden of cancer in local communities and across the state.

# Executive Summary

The overarching goal of cancer prevention and control efforts in NYS is to reduce the overall burden of cancer. This can be achieved by:

- Decreasing the number of new cancer cases;
- Decreasing the number of cancers diagnosed at late stage;
- Improving the quality of life of those diagnosed with cancer and their families; and
- Decreasing the number of deaths caused by cancer.

The 2012-2017 Plan provides background and data to identify the burden of cancer among New Yorkers. These data provide the basis for identification of six priority areas that, when addressed, aim to reduce the burden of cancer through prevention efforts, early detection programs, effective treatment for those diagnosed with cancer, programming to address the quality of life of cancer survivors, and strategies to build a competent, caring health care workforce to address the continuum of cancer care. Each priority area section in the Plan contains background information about the current status of work in the area, objectives to measure improvements, and suggested evidence-based or promising practices to make improvements.

## Priority Areas for Action

**Health Promotion & Cancer Prevention -** All New Yorkers will have current, evidence-based information, resources and opportunities to adopt and maintain health-promoting behaviors and to reduce the 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 will have access to high quality, comprehensive cancer care at an affordable cost.

**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.

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

**Health Care Workforce -** All New Yorkers will have access to an adequate supply of health care providers with demonstrated competencies in cancer prevention, detection, treatment, supportive services and palliative care.

## Measurable Objectives

Measurable objectives are identified to monitor progress in each priority area. The objectives are expected to change or to be affected through implementation of the suggested strategies contained within each section.

## Suggested Strategies

Evidence-based and evidence-informed strategies are listed in each priority area section of the Plan. The lists are not exhaustive; rather, they provide suggested approaches for Plan users to consider. Other suggestions may be found in the resources listed at the end of each section.

The following definitions were used to delineate between the varying levels of evidence available to support the suggested strategies included in the Plan.

> **Evidence-based interventions:** population-based interventions which are supported by the best available peer-reviewed evidence and have been proven effective in community settings.
>
> **Evidence-informed interventions:** interventions which have been proven effective by peer-reviewed evidence in experimental settings but have not yet been proven in community settings.
>
> **Best practices:** population-based interventions, programs or policies that have been evaluated and shown to be effective.
>
> **Promising practices:** interventions, programs or policies for which efficacy has not been formally evaluated but for which some evidence of effectiveness exists and is supported by expert opinion.

The NYS Cancer Consortium membership, with leadership from its Steering Committee (Appendix B), facilitates implementation of priority strategies primarily through committee membership (Appendix C). Individuals and organizations interested in addressing the burden of cancer in NYS are encouraged and welcomed to join the Cancer Consortium and participate in critical committee work to address the priority areas outlined in this Plan. Visit the Consortium website (www.nyscancerconsortium.org) to learn more about committee work and examples of how Consortium members put the Plan into action.

# Table of Contents

Cancer Prevention and Control Guiding Principles ........ 1
- I. The Burden of Cancer in New York State ........ 2
  - Cancer in NYS ........ 3
  - Cancer-Related Health Disparities in NYS ........ 5
  - NYS Demographics ........ 7
- II. Priority Areas ........ 8
  - II-1: Health Promotion and Cancer Prevention ........ 8
    - II-1.1: Tobacco Use ........ 9
    - II-1.2: Physical Activity and Nutrition ........ 11
    - II-1.3: Environmental Exposure ........ 13
    - II-1.4: Ultraviolet Radiation ........ 15
    - II-1.5: Genetics ........ 16
    - II-1.6: Vaccines ........ 17
  - II-2: Early Detection ........ 19
  - II-3: Treatment ........ 22
  - II-4: Survivorship ........ 24
  - http://www.oncrehab.com/II-5: Palliative Care ........ 25
  - II-5: Palliative Care ........ 26
  - II-6: Healthcare Workforce ........ 29

Putting Cancer Prevention and Control in Context: What New Yorkers Can Do ........ 31
- Appendix A: NYS Cancer Consortium General Membership 2012 ........ 35
- Appendix B: NYS Cancer Consortium Steering Committee - 2012 ........ 40
- Appendix C: NYS Cancer Consortium Committees - 2012 ........ 41

# Cancer Prevention and Control Guiding Principles

The NYS Cancer Consortium (Consortium) determined that the following principles must guide efforts to reach the proposed objectives. Strategies implemented in each priority area must take into account these guiding principles.

- Utilize **evidence-based and evidence-informed** information and education.
- Increase **access** to information, services, and ongoing support.
- Make available **culturally and linguistically appropriate** materials about cancer prevention, screening, treatment, clinical trials, survivorship, and palliative care.
- Increase **collaboration** among those working along the entire cancer care continuum.
- Develop and/or endorse efforts to attain **health equity** and the highest level of health for all residents, across all populations.
- **Ensure quality health care services** for all New Yorkers, across all populations.
- Emphasize **policy, systems and environmental change** strategies to make healthful choices, improved quality of life, and quality clinical services a reality for all New Yorkers, across all populations.

# I. The Burden of Cancer in New York State

New Yorkers continue to face the fears and realities of cancer 40 years after the United States launched its War on Cancer in 1971. Cancer is the second leading overall cause of death in NYS. On average, 105,000 New Yorkers are diagnosed with cancer annually and approximately 35,000 New Yorkers die from cancer each year.[1]

Often a diagnosis of cancer brings anxiety, stress, and struggles that strain affected individuals and their families and caregivers. The realities of a cancer diagnosis include facing treatment side effects and other quality of life issues, managing financial hardships, especially if the diagnosed individuals do not have health insurance and, in the presence of cultural, ethnic, geographic or socioeconomic disparities, confronting issues related to access to quality, timely health care.

Medical care for many cancers is improving, and early diagnosis and screening procedures, as well as prevention approaches, have given cancer patients better chances of survival. Currently, the five-year relative survival rate in the U.S. for all cancer types is 65 percent.[2] Children diagnosed with cancer have shown even greater survival advances since the 1970s. Nationally, deaths from cancers diagnosed in children declined by more than 50 percent between 1975 and 2006.[3]

The cancer burden weighs heavily on individuals and their families and on community, public health and health care organizations that work to reduce that burden. The burden is not evenly distributed because certain populations and/or socioeconomic groups face greater risks for certain cancers, lack local access to specialists and cancer treatment centers, or lack money or health insurance to pay for treatment and follow-up care.

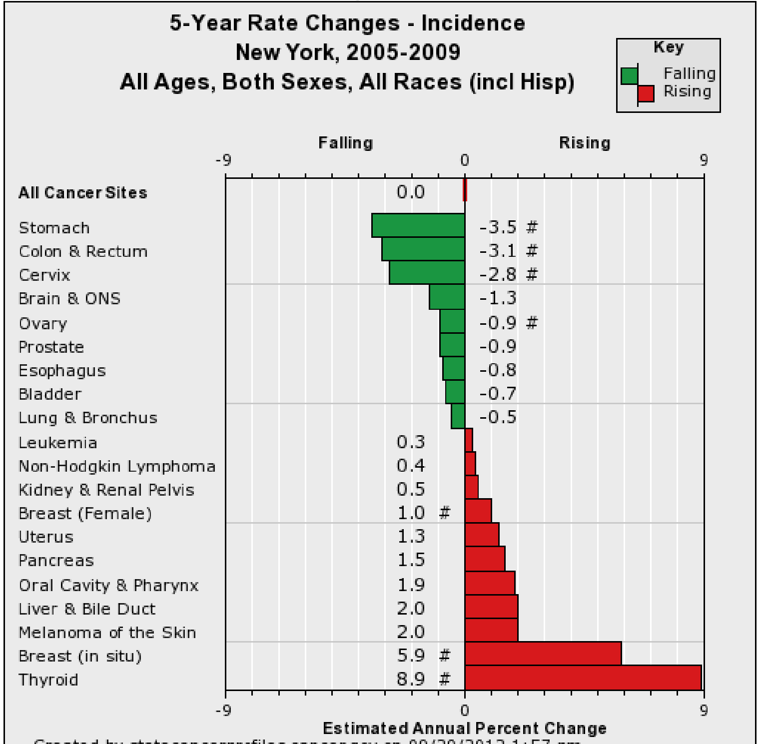
Information presented in this section describes the burden of cancer and its associated risk factors that are unique to NYS.

## Cancer in NYS

Data reported through the New York State Department of Health Cancer Registry (NYSCR) illustrate the burden of cancer in NYS. The NYSCR reports on the incidence, mortality and prevalence of cancer in the state. Cancer incidence is the number of new cases occurring in a population in a given time period. Cancer mortality is the number of cancer-related deaths in a time period. Both measures are typically reported as rates per 100,000 population. Cancer prevalence is the number of people living with cancer, including those diagnosed in the past and those recently diagnosed.[1]

In 2009, approximately 104,635 New Yorkers were diagnosed with cancer. The age-adjusted cancer incidence rate was 484.2 cases per 100,000 New Yorkers – the 9th highest in the United States. Between 2005 and 2009, the average cancer incidence rate for all cancer types in NYS remained relatively stable. Statistically significant decreases in cancer-specific incidence rates were recorded for stomach, colorectal, cervical and ovarian cancers. Statistically significant increases were seen in female and in-situ breast cancers and thyroid cancers (Figure 1).[2]

**Figure 1**



Created by statecancerprofiles.cancer.gov on 09/20/2012 1:57 pm.

Source: Incidence data provided by the National Program of Cancer Registries (NPCR). EAPCs calculated by the National Cancer Institute using SEER*Stat. Rates are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ... , 80-84,85+). Rates are for invasive cancer only (except for bladder cancer which is invasive and in situ) or unless otherwise specified. Population counts for denominators are based on Census populations as modified by NCI. The US populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas. The 1969-2009 US Population Data File is used with NPCR January 2012 data.

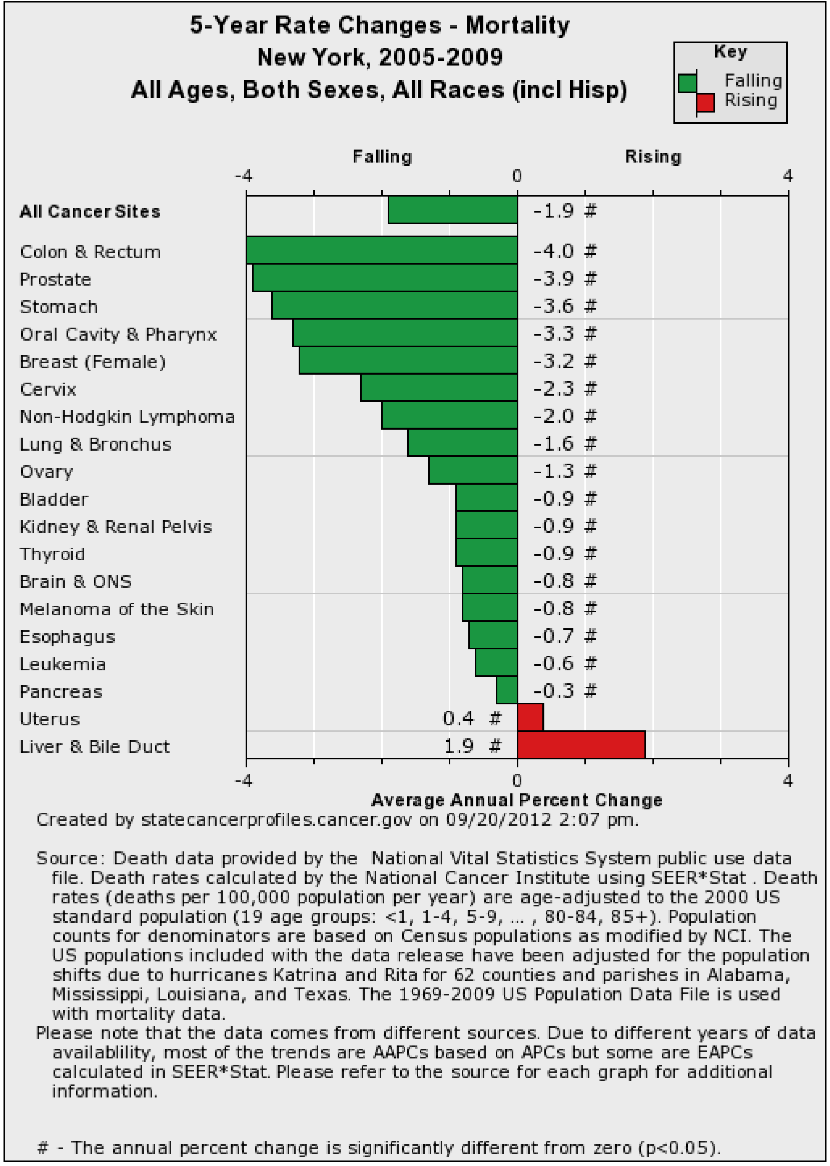
Please note that the data comes from different sources. Due to different years of data availablility, most of the trends are AAPCs based on APCs but some are EAPCs calculated in SEER*Stat. Please refer to the source for each graph for additional information.

# - The annual percent change is significantly different from zero ($p<0.05$).

For cancer mortality, the national Healthy People 2010 goal was to reduce the overall cancer death rate to 159.9 per 100,000 people. Although New York did not meet this national goal, the state's overall cancer mortality rate for all cancer types decreased by an average of 2 percent each year across all ages and races between 2005-2009. Only cancers of the uterus and of the liver/bile duct had increases in annual mortality rates (Figure 2).[2] In

2009, the age-adjusted cancer mortality rate was 161.9 cases per 100,000 New Yorkers. The overall cancer mortality rate target for Healthy People 2020 is 160.6 per 100,000 population.

**Figure 2**



Created by statecancerprofiles.cancer.gov on 09/20/2012 2:07 pm.

Source: Death data provided by the National Vital Statistics System public use data file. Death rates calculated by the National Cancer Institute using SEER*Stat . Death rates (deaths per 100,000 population per year) are age-adjusted to the 2000 US standard population (19 age groups: <1, 1-4, 5-9, ... , 80-84, 85+). Population counts for denominators are based on Census populations as modified by NCI. The US populations included with the data release have been adjusted for the population shifts due to hurricanes Katrina and Rita for 62 counties and parishes in Alabama, Mississippi, Louisiana, and Texas. The 1969-2009 US Population Data File is used with mortality data.

Please note that the data comes from different sources. Due to different years of data availablility, most of the trends are AAPCs based on APCs but some are EAPCs calculated in SEER*Stat. Please refer to the source for each graph for additional information.

# - The annual percent change is significantly different from zero ($p<0.05$).

Lung, colorectal, prostate and female breast cancers account for approximately half of all cancer cases and deaths in NYS. Prostate, lung and colorectal cancers are the most commonly diagnosed and the leading causes of cancer death among New York men. Among New York females, breast, lung and colorectal cancers are the most commonly diagnosed and the leading causes of cancer death. Table 1 shows the five leading causes of cancer and cancer-related death among males and females in NYS.[3]

**Table 1. Leading Causes of Cancer (Cancer Incidence) and Cancer-Related Death (Cancer Mortality) for NYS Males and Females, 2005-2009**

*Cancer Incidence, NYS Males*

| Site | Rate | Average Annual Cases | % of all Male Cancers |
|---|---|---|---|
| Prostate | 167.2 | 15,652.4 | 29.4% |
| Lung | 77.1 | 6,881.0 | 12.9% |
| Colorectal | 54.6 | 4,901.6 | 9.2% |
| Bladder | 42.5 | 3,701.0 | 6.9% |
| Non-Hodgkin Lymphomas | 25.9 | 2,364.4 | 3.8% |

*Cancer Incidence, NYS Females*

| Site | Rate | Average Annual Cases | % of all Female Cancers |
|---|---|---|---|
| Female Breast | 125.8 | 14,468.4 | 27.9% |
| Lung | 55.1 | 6,586.2 | 12.7% |
| Colorectal | 41.5 | 5,068.6 | 9.8% |
| Corpus & Uterus | 29.2 | 3,442.4 | 6.6% |
| Thyroid | 21.8 | 2,296.4 | 4.4% |

*Cancer Mortality, NYS Males*

| Site | Rate | Average Annual Cases | % of all Male Cancers |
|---|---|---|---|
| Lung | 55.1 | 4,849.2 | 27.9% |
| Prostate | 21.9 | 1,746.4 | 10.0% |
| Colorectal | 19.3 | 1,658.2 | 9.5% |
| Pancreas | 12.5 | 1,109.8 | 6.4% |
| Leukemias | 9 | 777.8 | 4.5% |

*Cancer Mortality, NYS Females*

| Site | Rate | Average Annual Cases | % of all Female Cancers |
|---|---|---|---|
| Lung | 35.6 | 4,324.8 | 24.4% |
| Female Breast | 22.3 | 2,713.2 | 15.3% |
| Colorectal | 13.9 | 1,771.4 | 10.0% |
| Pancreas | 9.6 | 1,210.8 | 6.8% |
| Ovary | 8.1 | 988.2 | 5.6% |

Rates are per 100,000 persons, age-adjusted to the 2000 U.S. standard population, with 95% confidence intervals.
Source: New York State Cancer Registry, 2005-2009

In New York, it is estimated that more than 850,000 people with histories of cancer were alive in January 2009, the most recent year for which data are available.[4]

## Cancer-Related Health Disparities in NYS

The National Cancer Institute (NCI) defines cancer-related health disparities as "adverse differences in new and existing cancer cases, cancer death, survivorship, and burden of cancer or related health conditions among specific population groups in the United States."[1] Cancer data show that certain groups in New York suffer disproportionately from cancer and its effects, including premature death. The risk of developing or dying from cancer varies by race/ethnicity, and disparities are more pronounced with specific cancers.[2, 3] For example, in New York:

- Overall incidence and mortality rates for all cancer sites are highest among Black men (Figure 3).

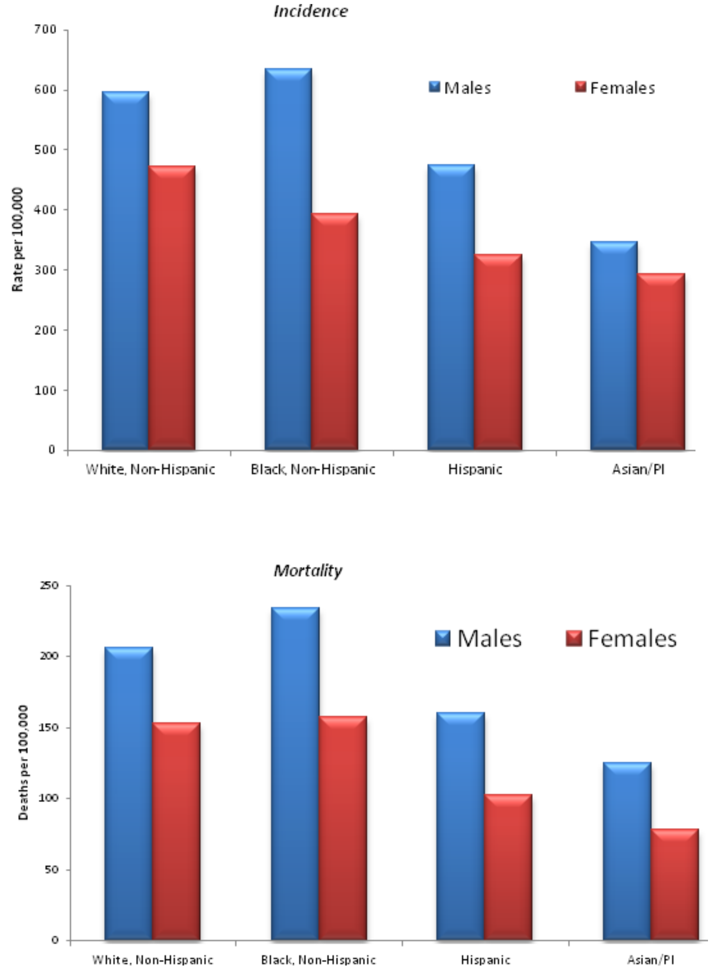
- The incidence of breast cancer is higher in White women, but the breast cancer mortality rate is higher in Black women.
- Cervical cancer incidence and mortality rates are higher for non-Hispanic Black women and for Hispanic women than for non-Hispanic White women.
- The overall colorectal cancer mortality rate is decreasing, but Black men and women are still dying at higher rates than White men and women.

Health disparities are not limited to non-White populations. According to Healthy People 2020, race or ethnicity, gender, sexual identity, age, disability, socioeconomic status, and geographic location all contribute to an individual's ability to achieve good health.[4]

Other factors that can add to the burden of cancer include:

- Lack of healthy food choices;
- Low rates of exercise;
- Higher smoking rates;
- Lack of consistent health care providers;
- Inadequate access to care (including preventive services, such as cancer screening);
- Language barriers; and
- Lack of health insurance.

**Figure 3. NYS Cancer Incidence & Mortality Rates by Race/Ethnicity**



Source: NYS Cancer Registry, 2005-2009

In addition, New York's Medicaid Redesign Team Health Disparities Workgroup identified the following populations that may experience greater health disparities: persons with limited English proficiency (LEP), immigrants, persons with disabilities, Lesbian, Gay, Bisexual and Transgender (LGBT) persons and American Indian/Alaska Natives. Persons with LEP face communication barriers that can impede their understanding and compliance with cancer treatment regimens. Immigrants face both access issues as well as cultural challenges with health care approaches and decisions. Lack of availability of the right equipment to support cancer screening amongst persons with disabilities is a significant issue, as is the need for disability competency training among the health care workforce. LGBT individuals face issues related to stigma as well as lack of awareness and insensitivity to their unique needs. Finally, American Indian/Alaska Native groups face greater socioeconomic barriers than many other racial/ethnic groups. Such groups should receive priority consideration when intervention strategies are being developed and implemented. The Medicaid Redesign Team's recommendations address several of these issues including reimbursing for interpretation services and mandating cultural competency training for health care providers.

Ultimately, the goal is to minimize health disparities and promote health equity. Healthy People 2020 defines health equity as the attainment of the highest level of health for all people.[4] Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and eliminate health and health care disparities.[4]

## NYS Demographics

The size and diversity of NYS are two significant challenges to preventing and treating cancer. NYS is the third most populous state in the nation behind California and Texas; NYS has more than 19 million people spread across large urban, suburban and rural areas and the state's socio-demographic data show broad racial and ethnic diversity.[1]

Cancer prevention and control efforts should meet the needs of all New Yorkers. While Whites represent 65 percent of the state's population, two of every five New Yorkers are Black, Hispanic or Latino (of any race), or Asian/Pacific Islander.[2] African Americans and Hispanic or Latino New Yorkers have higher rates of poverty than their White counterparts, often leading to health disparities for these groups.[2]

According to the U.S. Census Bureau, the NYS median age in 2010 was 38 years, up from 35.9 a decade before. Additionally, the number of 55- to 64-year-olds – an age group comprised of baby boomers – has grown nationwide over the last decade; in NYS, this population has grown by 36 percent over the decade.[3] Age is an important factor in cancer risk because as people age, their chance of getting cancer increases.

Approximately 13.5 percent of New Yorkers did not have health insurance in 2010, down from 15.5 percent in 1999.[4] While the trend is promising, lack of health insurance or a regular health care provider is associated with a higher risk of cancer-related morbidity and mortality. The distribution of health insurance coverage varies across the state. Access to a regular health care provider also varies; the factors most commonly associated with increased access are being female, White, having higher educational achievement and having a higher income.[4]

Other state demographic characteristics are likely to affect cancer burden due to issues related to either lack of access or health literacy:

- 21 percent of New Yorkers have incomes below the poverty level;
- 21 percent of New Yorkers are enrolled in Medicaid;
- 68 percent of New Yorkers are without a bachelor's degree; and
- 33 percent of New Yorkers report poor mental health.[5]

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

# II. Priority Areas

## II-1: Health Promotion and Cancer Prevention

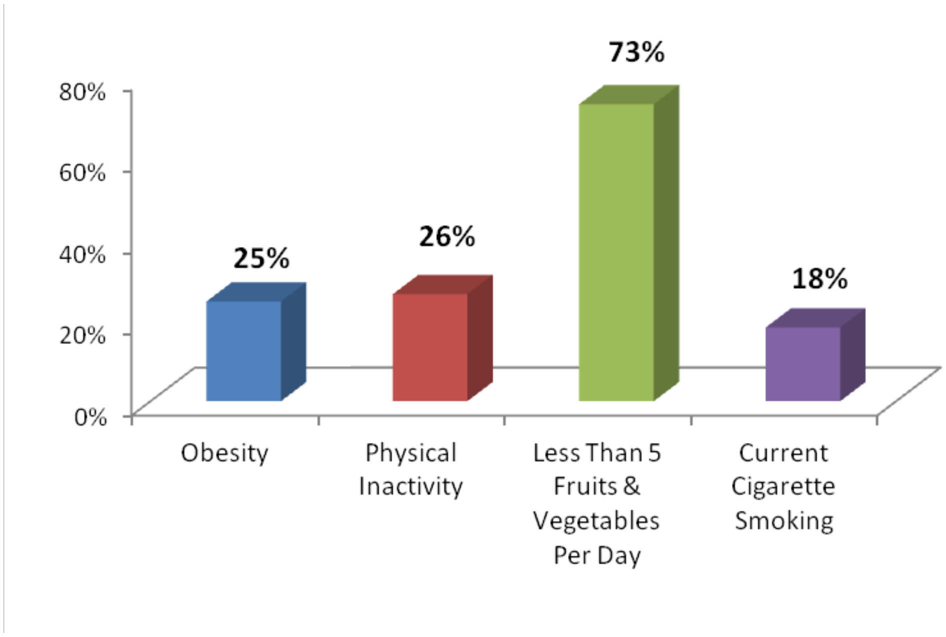
All New Yorkers will have current and evidence-based information, resources and opportunities necessary to adopt and maintain health-promoting behaviors to reduce the risk of cancer.

Health promotion and cancer prevention efforts are needed to help New Yorkers make well-informed choices to decrease the risk of cancer and also to provide access to health-promoting opportunities. This chapter addresses risk factors associated with the highest burden cancers and those that can be reduced through prevention strategies, such as tobacco use, physical activity, nutrition and ultraviolet (UV) light exposure.

This chapter is broken out into specific health promotion and cancer prevention topic areas that, when addressed through implementation of population- and evidence-based strategies and promising practices, could decrease the cancer burden in New York. The topic areas are:

- Tobacco use
- Physical activity and nutrition
- Environmental exposure
- UV radiation
- Genetics
- Vaccines

**Figure 4. Prevalence of Selected Cancer Risk Factors among NYS Adults**

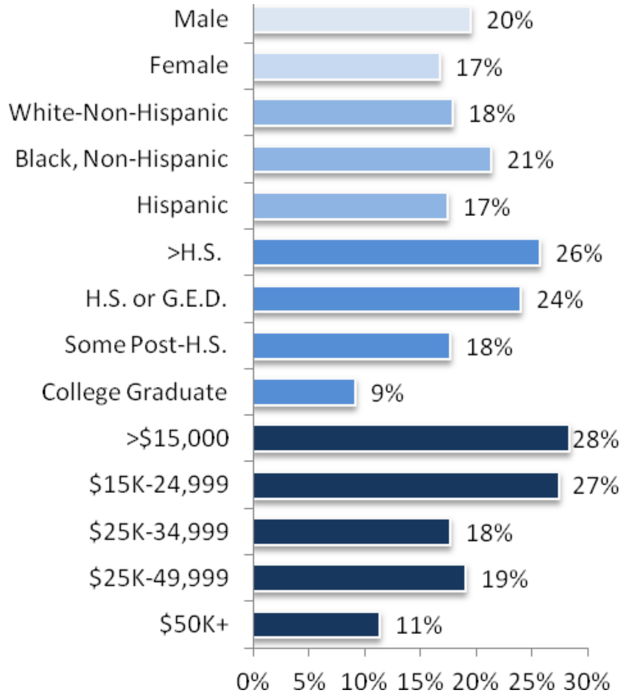


Source: NYS BRFSS, 2009 & 2011

## II-1.1: Tobacco Use

Tobacco use is the leading preventable cause of death in the United States. The American Cancer Society (ACS) estimates that 60 percent of cancers could be avoided if people stopped using tobacco. Figure 5 displays current cigarette use among different groups of NYS adults. Smoking kills 25,500 New Yorkers every year, and exposure to other peoples' tobacco smoke (secondhand smoke) kills another 2,500. At any time, approximately 570,000 New Yorkers are afflicted with serious diseases caused by smoking. The ACS projects that 389,000 New Yorkers under 18 will eventually die from smoking.

**Figure 5. Prevalence of Cigarette Use among NYS Adults by Demographic Group, 2011**
**(by Gender, Race/Ethnicity, Education & Income Level)**



Source: NYS BRFSS, 2011

Each year, about 13,500 New Yorkers are diagnosed with lung cancer and about 9,200 men and women die from it.[1] Lung cancer is the number one cancer killer for both men and women in NYS. Smoking is the most common cause of lung cancer. Research shows that exposure to secondhand smoke, radon gas and asbestos also increase the risk for lung cancer. A 2011 report by the U.S. Centers for Disease Control and Prevention (CDC) found that between 1999 and 2008, lung cancer incidence decreased in men, including those in New York. This decrease correlates with a decline in smoking prevalence among men in the state.[2] Although smoking prevalence among New York women also declined, no decrease in female lung cancer incidence rates were observed. [3]

Cigarette use among adolescents and adults in New York has continually declined over the last decade, with New Yorkers smoking at rates below national averages.[3] Smoking rates of high school students are monitored using the New York Youth Tobacco Survey. Youth who respond as "having smoked on one or more of the past 30 days" are defined as current smokers. The latest survey shows that smoking rates among high school students dropped sharply between 2000 and 2010. These significant reductions support the state's approach of tobacco-free environments, high excise taxes, and health communication campaigns that include strong graphic and emotionally evocative messages and images.

## Measurable Objectives

1. By 2017, reduce the percentage of adolescents in grades 9-12 who are current cigarette smokers by at least 5 percent. (Baseline, 2010: 12.6 percent, NYS Youth Tobacco Survey)

2. By 2017, reduce the percentage of adults who are current cigarette smokers by at least 5 percent. (Baseline, 2011: 18.1 percent, Behavioral Risk Factor Surveillance System [BRFSS])

3. By 2017, increase the percentage of smokers reporting that their health care providers assisted them with smoking cessation by at least 5 percent (Baseline, 2010: 51.8 percent, NYS Adult Tobacco Survey)

4. By 2017, increase the percentage of smokers who made a quit attempt during the past 12 months by at least 5 percent (Baseline, 2010: 59.0 percent, NYS Adult Tobacco Survey)

## Suggested Strategies (This is not an exhaustive list)

- Support policy-driven, population-based approaches to prevent youth from smoking and to motivate adult smokers to quit. These policies include:
    - Keeping tobacco products out of consumer view in non-adult-only retail environments.
    - Promote efforts to limit the sale of tobacco products in pharmacies.
    - Addressing the sale of tobacco products in pharmacies.
    - Tobacco-free college and university campus policies.
    - Tobacco-free parks, playgrounds and beaches.
    - Voluntary adoption of tobacco-free policies in multi-unit housing, including apartment complexes, condominiums and co-ops.
    - Expanding health plan coverage of tobacco dependence treatment, counseling and medications, including Medicaid coverage of medications and reimbursement for counseling.

- Promote the recommended strategies of the Community Prevention Task Force and the CDC Best Practices for Tobacco Control Programs.

## For More Information

NYS Smokers Quitline:
www.nysmokefree.com

New York State Department of Health Tobacco Control Program:
www.health.state.ny.us/prevention/tobacco_control

U.S. Centers for Disease Control and Prevention:
www.cdc.gov/tobacco/

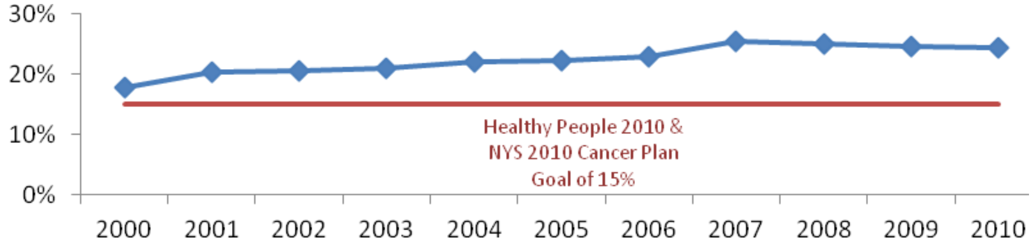
The Center for Public Health and Tobacco Policy:
http://www.tobaccopolicycenter.org/

## II-1.2: Physical Activity and Nutrition

Obesity has reached epidemic proportions in New York and across the nation. One in four New Yorkers is obese and one in three New York children are overweight or obese. Several major cancers, including colon, breast, endometrial, kidney and esophageal, are associated with overweight and obesity.[1] Adopting a physically active lifestyle, eating a healthy diet and maintaining a healthy weight can help prevent cancer and improve cancer mortality rates.[2] Some studies have also reported links between obesity and cancers of the gallbladder, ovaries and pancreas.[3]

In 2010, 24.5 percent of NYS adults were categorized as obese (BMI ≥30), much higher than the 15 percent goal set in Healthy People 2010 and the 2003-2010 Plan (Figure 6). While all populations are affected by obesity, those at higher risk include children, especially Hispanic children, adults with low income or low education, and Black women.[4] Obesity among children and adolescents has tripled over the past three decades. Currently, one-third of New York's children are obese or overweight, with higher rates in lower-income areas downstate and more geographically isolated areas.[4] The prevalence of obesity is significantly higher among black women (38.9 percent) than among Hispanic (26.1 percent), white (21.0 percent) and other non-Hispanic women (13.7 percent). The prevalence of obesity among men does not differ significantly by race/ethnicity, but black men have the highest rate of obesity among males at 31.0 percent.[4,5]

**Figure 6. Trends in the Prevalence of NYS Adult Obesity, 2000-2010**



Source: NYS BRFSS, 2000-2010

The 2001 *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* notes that "individual behavior change can occur only in a supportive environment with accessible and affordable healthy food choices and opportunities for regular physical activity."[5]

Nutrition plays an important role across the lifespan, including breastfeeding with short- and long-term health benefits. The health benefits of breastfeeding babies include a reduced risk of childhood obesity. The 2011 *Surgeon General's Call to Action to Support Breastfeeding* highlights findings from several observational studies noting an increased risk of both breast and ovarian cancer among women who had never breastfed.[6] A 2011 study investigated the higher incidence of hormone receptor negative breast cancer in African American women and found this cancer was more common in those women who had two or more live births. However, this type of breast cancer was seen less frequently in those women who had breastfed their infants.[7] Implementing policies to promote breastfeeding is widely supported to improve the health of infants and mothers.

## Measurable Objectives

1. By 2017, increase the percentage of adults who consume fruits and vegetables five or more times per day by at least 5 percent. (Baseline, 2009: 26.8 percent, BRFSS)

2. By 2017, increase the percentage of adults who participate in enough Aerobic and Muscle Strengthening exercises to meet current guidelines by at least 5 percent. (Baseline, 2011: 21.5 percent, BRFSS)

3. By 2017, decrease the percentage of adults who do not participate in any leisure-time physical activity by at least 5 percent. (Baseline, 2011: 26.3 percent, BRFSS)

4. By 2017, decrease the percentage of adults who are obese (BMI >30) by at least 5 percent. (Baseline, 2011: 24.5 percent, BRFSS)

5. By 2017, decrease the percentage of high school students who are obese by at least 5 percent. (Baseline, 2011: 11.0 percent, Youth Risk Behavior Survey [YRBS])

6. By 2017, increase by at least 5 percent the proportion of mothers who:
    a. Breastfeed their babies at 6 months (Baseline, 2012: 53.7 percent, CDC National Immunization Survey)
    b. Exclusively breastfeed their babies at 6 months (Baseline, 2012: 15.3 percent, CDC National Immunization Survey)

## Suggested Strategies (This is not an exhaustive list)

- Endorse policies and initiatives that support health-promoting behaviors, including access to nutritious foods and increasing opportunities for physical activity, especially among populations most at risk or affected by overweight and obesity.

- Promote voluntary adoption of food procurement and vending guidelines by state agencies, local governments and community-based agencies and their vendors.

- Support policies to increase the duration and exclusivity of breastfeeding including those policies recommended by New York's Medicaid Redesign Team.

- Work with local school districts to ensure compliance with state requirements for physical activity for students and reporting on Body Mass Index.

- Encourage hospitals that provide labor and delivery services to achieve "Baby-Friendly Hospital" designation.

## For More Information

New York State Department of Health:
    http://www.nyhealth.gov/prevention/obesity/

U.S. Centers for Disease Control and Prevention:
    www.cdc.gov/nutrition/
    www.cdc.gov/obesity/index.html

## II-1.3: Environmental 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. In the broadest sense, environmental risk factors for cancer could include all non-genetic factors, such as diet, lifestyle, environmental and occupational chemicals, and infectious agents.

Many people do not consider or are unaware of their potential exposure to environmental risk factors that may contribute to the development of cancer. One environmental risk factor – exposure to UV radiation from the sun or indoor tanning – is discussed in another chapter, as is exposure to secondhand smoke. In this chapter, however, environmental risk factors are defined as exposures to toxins in food, consumer products, water, soil, air or in the workplace. Examples of environmental risk factors are exposures to radon, pesticides, chemical solvents, the combustion products of burning wood, diesel or other fuels, asbestos, and some environmentally persistent chemical contaminants that can be present in fatty tissues of meat and fish.

The NYSDOH Centers for Environmental and Community Health, community organizations, and Consortium members work together to reduce the risk of exposure to substances that could cause cancer. This is accomplished through the formation of partnerships, the development and dissemination of educational materials and messages, research, and access to environmental data for informed decision-making about interventions.

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. Partnerships with medical specialty groups lead to initiatives such as the “Image Gently” campaign that educates about potential radiation exposure risks from computed tomography (CT) scans and X-rays.[1] This campaign aims to encourage parents to be aware of the number of procedures their children receive and physicians to use low radiation doses when imaging children.

Partnerships with environmental organizations have resulted in educational materials that are sensitive to cultural differences, accessible to varied literacy levels and action-oriented in their steps to reduce exposure to environmental hazards. Examples include healthy gardening practices that support the benefits of eating fresh vegetables while minimizing exposures to chemicals in the soil/on produce and advice that lowers exposure to chemical contaminants in sport fish.

### Measurable Objectives

1. By 2017, add eight more cancer types to the Environmental Public Health Tracking (EPHT) portal for tracking purposes. (Baseline, 2010: Data by county on total childhood cancer and seven age-adjusted cancer types is available on the EPHT public portal)

2. By 2017, increase the percentage of New York homes tested for radon to 12 percent. (Baseline, 2010: 7.9 percent, NYSDOH radon database and biennial reports from radon testers)

### Suggested Strategies (This is not an exhaustive list)

- Improve citizens’ awareness and understanding of the risks of exposure to cancer-causing substances in the environment and ways to reduce exposure to those substances through collaborative educational efforts with environmental health entities. Include in these efforts:
    - Information about the role of diet in cancer prevention, including the identification of dietary risk factors for common cancers and ways to reduce exposures;

  - The potential risks from products used in and around the home (e.g., some pesticides, solvents and other chemicals); and
  - The need to recognize the potential 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.

- Increase the availability of data about cancer incidence and unusual patterns of cancer for small geographic areas across the state.

- Partner with federal, state and local governments, businesses and communities to reduce elevated exposures to known or suspected environmental risk factors for cancer (e.g., elevated levels of known or suspected human carcinogens at hazardous waste sites, in the workplace, in personal care and consumer products, in drinking water supplies, and in indoor or outside air).

- Increase the number of environmental risk factors for cancer addressed by programs, policies or initiatives (e.g., carcinogens in soil, water, air, food, consumer products; occupational carcinogens; radon in existing and new homes).

## For More Information

National Cancer Institute - 2008-2009 President's Cancer Panel Annual Report – Reducing Environmental Cancer Risk, What We Can Do Now:
http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf

National Cancer Institute – Cancer and the Environment:
http://www.cancer.gov/newscenter/Cancer-and-the-Environment

New York State Department of Health Environmental Public Health Tracking public portal:
http://www.health.state.ny.us/statistics/environmental/public_health_tracking/

Agency for Toxic Substances and Disease Registry – Cancer and the Environment:
http://www.atsdr.cdc.gov/risk/cancer/cancer-contents.html

Environmental Health – A 2011 Issue of this Journal on the Topic of Environment and Cancer:
http://www.ncbi.nlm.nih.gov/pmc/issues/195729/

National Institute of Environmental Health Sciences:
http://www.niehs.nih.gov/health/topics/conditions/cancer/index.cfm

National Institute for Occupational Safety and Health – Occupational Cancer:
http://www.cdc.gov/niosh/topics/cancer/

World Health Organization:
http://www.who.int/cancer/prevention/en/
http://www.who.int/ceh/publications/persistent_organic_pollutant/en/index.html

## II-1.4: Ultraviolet Radiation

Unprotected and/or extended exposure to UV radiation – from the sun, tanning beds or tanning lamps – can lead to skin cancer, the most common cancer in the United States. Fortunately, all forms of skin cancer – basal cell, squamous cell and melanoma – are curable if detected early. Between 65 percent and 90 percent of all melanomas, the most deadly form of skin cancer, are caused by UV radiation.[1] This can include direct exposure to the sun, as well as artificial forms of UV light, such as tanning beds and lamps. Nationwide, tanning bed use among adolescents is widespread.[2]

Approximately 1,800 men and 1,400 women in New York are diagnosed with melanoma each year. Melanoma is among the top ten cancer diagnoses for NYS residents as a whole and among the top five diagnoses for young adults, 20 to 34 years of age. Over the last 30 years, the melanoma incidence rate has also been increasing. About 560 New Yorkers die from skin cancer each year and over 75 percent of these deaths are related to melanoma.[3] If diagnosed in an early stage, melanoma can be treated successfully.[3] It is important to prevent new cases of melanoma through appropriate prevention measures and to detect cases of melanoma at an early stage when treatment is more successful.

### Measurable Objectives

1. By 2017, reduce the melanoma cancer death rate to 2.0 deaths per 100,000 (Baseline, 2005-2009: 2.2 cases per 100,000. Source: NYSCR)

2. By 2017, establish a means by which to assess sun exposure and sun-protective behaviors among New Yorkers (Potential data sources: BRFSS or YRBS)

### Suggested Strategies (This is not an exhaustive list)

- Support and promote educational initiatives that stress sun safety messages and decrease exposure to UV light for all ages, including initiatives that target schoolchildren, adolescents, parents, health care providers and summer camps.

- Support existing tanning facility' regulations (Subpart 72-1) to promote safety and appropriate use.

- Support implementation of legislation banning the use of tanning beds by minors ages 16 and under.

### For More Information

U.S. Centers for Disease Control and Prevention:
www.cdc.gov/cancer/skin/basic_info/prevention.htm

New York State Department of Health:
www.health.state.ny.us/diseases/cancer/skin/
www.nyhealth.gov/environmental/indoors/tanning

World Health Organization:
http://www.who.int/mediacentre/factsheets/fs287/en/

## II-1.5: Genetics

Cancer genetics considers how individuals' personal and family histories may increase their risks for certain cancers. Cancer genetics is becoming an important part of understanding the complexity of cancer.

Inherited genes can carry mutations that might put a person at a higher risk for cancer. For example, mutations in the genes called BRCA1 and BRCA2 put a person at a higher risk for breast and ovarian cancer, as well as other cancers such as pancreatic, gallbladder and stomach.[1] Identifying individuals and families at increased risk for cancer is an important task for health care professionals, as is appropriately referring such groups to genetic counseling, risk assessment, consideration of genetic testing or chemoprevention, and development of management plans.[2] Management plans are for use with individuals determined to carry a genetic mutation and help guide clinical decisions.

### Measurable Objectives

1. By 2017, assess available measures related to the utilization of genetic services (Data Source: To be determined) such as those that track:
   a. Data on genetic counseling visits sought by, and genetic tests ordered for, New Yorkers at risk for BRCA 1 or 2 mutations, and
   b. The proportion of New York residents with a family history of breast and/or ovarian cancer who receive genetic counseling.

### Suggested Strategies (This is not an exhaustive list)

- Educate health care providers about the importance of asking patients about their personal and family histories of cancer to identify those likely to benefit from genetic counseling, consideration of genetic testing and chemoprevention.

- Provide accurate information to the public and health care providers about genetic tests and resources available to aid with risk assessment and development of management plans.

- Distribute up-to-date information about the availability of genetic counselors in the state, including those that provide services at low or no cost.

- Assess the availability of reimbursement for genetic counseling and genetic testing, when appropriate and supported by evidence.

### For More Information

New York State Department of Health:
http://www.health.ny.gov/diseases/cancer/genetics/genetic_counselors.htm
http://www.nyhealth.gov/diseases/cancer/genetics/index.htm

U.S. Centers for Disease Control and Prevention:
www.cdc.gov/genomics/gtesting/index.htm

## II-1.6: Vaccines

Vaccines help prevent certain infectious diseases. Cervical cancer is caused by one of the most common sexually transmitted infectious diseases, human papillomavirus (HPV). It is estimated that 20 million people in the United States are infected with HPV and more than 6 million new HPV infections are diagnosed each year.[1] Based on national estimates, 80 percent of sexually active men and women will acquire HPV infection 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 cancers.[2]

Since 2006, two Food and Drug Administration (FDA)-approved vaccines have been licensed for use in females ages 9 to 26 years to prevent infection with HPV. The Advisory Committee on Immunization Practices (ACIP) recommends the vaccine routinely for females between the ages of 11 and 12 and for females between the ages of 13 and 26 years who did not get any or all the shots when they were younger.[2] Cervical cancer screening with appropriate interval Pap testing continues to be recommended for all women, regardless of their vaccination status. HPV vaccine use in female adolescents has been on the rise in the last few years, but vaccination rates remain low and efforts to promote its use are needed. This is especially true among populations for whom data shows low utilization, including Blacks, Hispanics and those living below the poverty level.[3]

The quadrivalent HPV vaccine (HPV4, also known as Gardasil®) has also been licensed for use in males ages 9 to 26 years. In October 2011, the ACIP voted to recommend routine use of HPV4 vaccine for males aged 11 to 12 years and for catch-up vaccination of males between the ages of 13 to 21 years who did not get any or all the shots when they were younger. Males ages 22 to 26 years who have HIV infection or men who have sex with men are recommended to receive HPV4 vaccine; the ACIP does not recommend the vaccine for routine use in other males in this age group, but does note that the vaccine may be given to them to reduce their risk of acquiring genital warts, another disease caused by HPV.[4]

Hepatitis B is an infectious disease caused by a virus that attacks the liver. The hepatitis B virus (HBV) can cause lifelong infection, cirrhosis (scarring) of the liver, hepatocellular carcinoma (HCC), liver failure and death. The CDC estimates that 800,000 to 1.4 million persons nationwide have chronic HBV infection, and approximately 3,000 people die each year from HCC or chronic liver disease caused by HBV infection.[5] Prevention of HBV can reduce the incidence of liver cancer.

HBV vaccination is the most effective measure to prevent HBV infection.[6] The HBV vaccine has been promoted as one of the first cancer prevention vaccines in humans.[7] It is recommended that all infants, children, and adolescents up to the age of 18 receive the HBV vaccine. The vaccine is also recommended for adults who may be at risk for infection, including health care workers, heterosexuals with multiple sex partners, injection-drug users, and men who have sex with men.[6]

## Measurable Objectives

1. By 2017, increase by at least 5 percent the proportion of females and males ages 13 to 17 years who have:
    a. Received at least one dose of the HPV vaccine (Baseline for females, 2011: 46.6 percent, Baseline for males, 2011: 6.4%, National Immunization Survey (NIS)– Teen)
    b. Received all three recommended doses of the HPV vaccine (Baseline for females, 2011: 34.2 percent, Baseline for males: N/A, NIS – Teen)

2. By 2017, increase by at least 5 percent the proportion of children ages 19 to 35 months who have:
    a. Received one or more doses of the HBV vaccine administered between birth and 3 days of age (Baseline, 2011: 53.7 percent, NIS)
    b. Received all three recommended doses of the HBV vaccine (Baseline, 2011: 89.1 percent, NIS)

3. By 2017, increase the proportion of at-risk adults (i.e., heterosexuals with multiple sex partners, injection-drug users, and men who have sex with men) who have received all three recommended doses of the HBV vaccine by at least 5 percent (National baseline, 2010: 42 percent, National Health Interview Survey)

## Suggested Strategies (This is not an exhaustive list)

- Institute reminder-recall systems in health care settings to increase the use of the HPV and HBV vaccines, according to evidence-based guidelines.

- Educate health care providers about the benefits of providers recommending the HPV and HBV vaccinations to their patients.

- Support educational campaigns targeted to at-risk adolescents and adults regarding the benefits and risks of HPV and HBV vaccines.

- Ensure access to HPV and HBV vaccines for persons and communities at-risk.

- Promote the use of HBV vaccine in venues where persons at risk for HBV access services, such as sexually transmitted disease (STD) clinics and needle exchange programs.

## For More Information

U.S. Centers for Disease Control and Prevention:
www.cdc.gov/vaccines/recs/schedules/default.htm#top

The Community Guide to Clinical Preventive Services:
http://www.thecommunityguide.org/vaccines/universally/index.html

New York State Department of Health Hepatitis Strategic Plan:
http://www.nyhealth.gov/diseases/communicable/hepatitis/strategic/index.htm

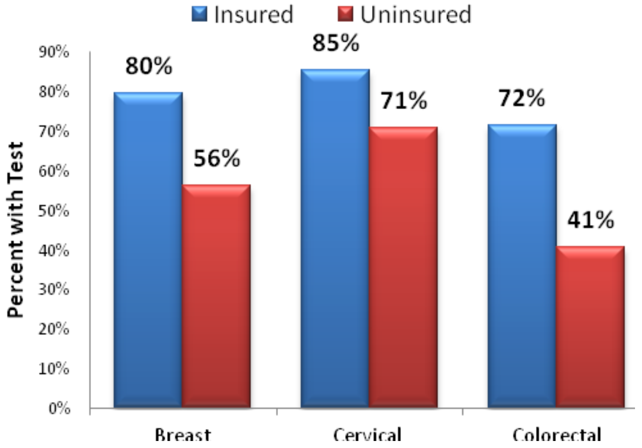
# II-2: Early Detection

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

Cancer screening tests can find disease in people who have no signs of illness. It is important to get screened for breast, cervical and colorectal cancers for early detection and treatment. Cervical and colorectal cancer screening tests can find pre-cancerous cells which can be removed before they become cancerous. The percentage of adults ages 50 years or older who have been screened for colorectal cancer has increased in the last decade.[1] However, screening rates for breast and cervical cancer have remained stable. It is critical that the public continues to receive information about these important preventive measures and that health care providers remain vigilant in their counseling and referral practices.

Rates of cancer screening are not equal across populations in NYS. People without health insurance (Figure 8), people with low incomes and people with less than a high school education are least likely to be screened for breast, cervical and colorectal cancer. In the case of colorectal cancer screening, Hispanic men and women are least likely to be screened.[1]

**Figure 8. Screening for Breast, Cervical and Colorectal Cancers among Adults in NYS by Insurance Status**



Source: NYS BRFSS, 2010

Screening guidelines vary, depending on the type of cancer, and change often as a result of new and emerging technology and research. Current evidence suggests that screening for breast, cervical and colorectal cancers reduces the number of cancer-related deaths.[2] According to the CDC, general population screening for certain cancers (e.g., prostate, skin, or ovarian cancers) has not been proven successful in lowering cancer-related deaths.[2] Individuals should understand their personal risk factors and family histories and speak with health care providers about screening options. Symptom recognition and prompt follow-up can also be of benefit in detecting cancer in earlier stages (e.g. ovarian cancer). Given the uncertain benefits of population-based screening for certain cancers in average-risk individuals, individuals should make informed decisions about screening with their health care providers.

In 2011, the National Comprehensive Cancer Network (NCCN) released a new clinical practice guideline for lung cancer screening, recommending helical low-dose computed tomography screening for select, high-risk individuals. The recommendation is based on outcomes of the National Lung Screening Trial as well as non-randomized studies and observational data.[3] As noted by the NCCN, cost-effectiveness and true benefit-to-risk ratio for lung cancer screening still need to be determined. Surveillance data on lung cancer screening uptake is not available in New York. Providers and health care institutions interested and equipped to offer quality lung cancer screening and appropriate follow-up to high-risk individuals should be familiar with the definition of high-risk and follow the NCCN-established screening and follow-up standards. The Consortium will stay abreast of emerging information on this and other topics and establish appropriate goals and measurable objectives as appropriate.

The Consortium supports the most current, evidence-based, guideline-driven screening services, such as those recommended by the U.S. Preventive Services Task Force and endorsed by the CDC, NCI, the NCCN, the ACS and other professional organizations and societies.

## Measurable Objectives

Breast Cancer:

1. By 2017, increase the proportion of women who receive breast cancer screening based on the most recent guidelines by at least 5 percent. (Baseline, 2010: 77.7 percent women aged 40 to 74 years who have received a mammogram in the past two years. Source: BRFSS)

2. By 2017, reduce the rate of female breast cancer identified at late stages to 41.7 cases per 100,000 females (Baseline, 2005-2009: 44.4 cases per 100,000. Source: NYSCR)

Cervical Cancer:

1. By 2017, increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines by at least 5 percent (Baseline, 2010: 88.6 percent women aged 21-65 years with a Pap test within the past three years. Source: BRFSS)

2. By 2017, reduce the rate of invasive uterine cervical cancer to 8.1 cases per 100,000 females. (Baseline, 2005-2009: 8.5 cases per 100,000. Source: NYSCR)

Colorectal Cancer:

1. By 2017, increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines by at least 5 percent. (Baseline, 2010: 68.0 percent of adults aged 50 to 75 years who received either a blood stool test in the past year, or a sigmoidoscopy in the past 5 years and a blood stool test in the past 3 years, or a colonoscopy in the past 10 years. Source: BRFSS)

2. By 2017, reduce the rate of invasive colorectal cancer to 46.4 cases per 100,000 population. (NYS Baseline, 2005-2009: 47.8 cases per 100,000 population. Source: NYSCR)

Disparities:

- By 2017, reduce barriers to screenings 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. (Data Sources: BRFSS and NYSCR)

## Suggested Strategies (This is not an exhaustive list)

- Assure the successful implementation of the Patient Protection and Affordable Care Act (PPACA) to reduce economic barriers to cancer screening.

- Implement the recommended strategies outlined in the Guide to Community Preventive Services to improve cancer screening rates:
  - Patient and provider reminders (e.g. letters, postcards, emails, recorded phone messages, interactive voice response systems).
  - Educate patients about the benefits of cancer screening and ways to overcome barriers to screening.

  - Evaluate and give providers feedback on provider performance in providing screening services.
  - Use 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) to build public awareness and demand for cancer screening.
  - Remove structural barriers (e.g. provide transportation, adjust appointment hours, offer screening in varied settings, eliminate/simplify administrative processes) to cancer screening.
  - Integrate cancer screening into routine clinical preventive services wherever possible (e.g., provide opportunities for cancer screening along with immunization, blood pressure screening, etc.).
  - Eliminate out-of-pocket costs for cancer screening (e.g., eliminate or decrease co-payments, provide vouchers).
  - Encourage and help providers and health insurance companies include reminders for cancer screening in electronic health records systems.

- Provide accessible cancer screening to all New Yorkers regardless of insurance status or geographic location.
  - Support a reassessment of the federal National Breast and Cervical Cancer Early Detection and Colorectal Cancer Prevention Programs in light of PPACA implementation.
  - Implement reciprocal referral systems to ensure that persons who need health insurance coverage for screening are appropriately referred to and enrolled in public health insurance programs.

- Develop systems to assess and monitor disparities and barriers related to cancer screening and diagnostic services.

## For More Information

New York State Department of Health:
http://www.health.ny.gov/diseases/cancer/
http://www.health.ny.gov/diseases/cancer/services/

U.S. Preventive Services Task Force:
www.uspreventiveservicestaskforce.org/recommendations.htm

U.S. Centers for Disease Control and Prevention:
www.cdc.gov/cancer/dcpc/prevention/screening.htm

Guide to Community Preventive Services:
www.thecommunityguide.org/cancer/index.html

Cancer Control P.L.A.N.E.T.:
http://cancercontrolplanet.cancer.gov/

# II-3: Treatment

All New Yorkers will have access to high quality, comprehensive cancer care at an affordable cost.

Cancer treatment varies by type of cancer, stage at diagnosis, the age of the person undergoing treatment as well as general health status. Treatment outcomes are the result of multiple factors including equitable and timely access to safe and effective cancer therapies, coordination of care among health care and allied health care professionals, and involvement of patients in cancer clinical trials to inform the future of cancer treatment.

For individuals diagnosed with cancer, access to evidence-based treatment is critical. Barriers to treatment include lack of or inadequate health insurance coverage or limited availability of specialists or treatment centers, especially in rural areas of New York. The NYS Medicaid Cancer Treatment Program (MCTP) is designed to improve access to treatment for breast, cervical, colorectal and prostate cancer.[1]

Just as there are guidelines for cancer screening, cancer treatment guidelines are developed to inform standardized, quality cancer care for all individuals undergoing treatment. Recommendations are intended to produce the best health outcomes and to eliminate the use of ineffective therapies. The NCCN develops cancer treatment guidelines annually for each type of cancer.[2] The Quality Forum develops consensus standards for quality of cancer care.[3] Health care providers who treat individuals with cancer, or who monitor such patients after active treatment is complete, are urged to use these nationally accepted guidelines to produce the best possible outcomes for their patients.

The NCI creates standards of excellence in cancer care and selects NCI-designated cancer centers, six of which are in NYS.[4] Similarly, the American College of Surgeons' Commission on Cancer (CoC) Accreditation Program encourages hospitals, treatment centers and other facilities to improve their quality of cancer care.[5] There are 72 CoC-accredited facilities in the state, providing cancer treatment and follow-up care according to established standards.

Clinical trials are research studies that involve people who agree to partake in the study of new approaches to prevention, diagnosis and treatment of a disease or to assess the quality of life associated with various interventions. Clinical trials are available for various aspects of cancer care, from screening to treatment to supportive care. Treatment trials test the effectiveness of new treatments or new ways of using current treatments in people who have cancer, including new drugs, surgical techniques and other therapies. People who participate in clinical trials contribute to the scientific evidence and the advancement of medicine by helping medical professionals to develop and improve cancer treatment methods. Clinical trial participants also receive state-of-the-art care from cancer experts. [6]

Underserved populations are underrepresented in cancer clinical trials. Indirectly, a lack of representation in clinical trials can lead to results without clear indications for the populations not represented.[7] Partners interested in increasing access to cancer clinical trials are encouraged to review the NCI *Resource Guide for Outreach, Education and Advocacy*.[8]

## Measurable Objectives

1. By 2017, increase the number of eligible men and women enrolled annually in the NYS MCTP by at least 5% (Baseline, 2010: 568, NYSDOH Cancer Services Program data).

2. By 2017, monitor trends in the number of American College of Surgeons CoC-accredited facilities in the state as well as the number of such programs that receive special commendations (e.g. "outstanding achievement" awards). (Developmental measure - Potential data source: National Cancer Data Base).

3. By 2017, establish a means by which to assess the number of cancer patients enrolled in cancer treatment clinical trials (Developmental measure - Potential data source: National Cancer Data Base).

## Suggested Strategies (This is not an exhaustive list)

- Promote availability of the state's MCTP, and ensure that treatment facilities train or have access to Designated Qualified Entities, who are responsible for enrolling clients in the program.

- Implement reciprocal referral systems to ensure that persons who need health insurance coverage for treatment are appropriately referred to and enrolled in public health insurance programs.

- Support implementation and evaluation of patient navigation programs to help patients and families navigate the health care system (and support care coordination efforts).

- Educate the public and the medical community regarding recommended guidelines for effective treatment and quality of cancer care, such as those released annually by the NCCN.

- Promote adherence to National Quality Forum consensus standards for quality cancer care.

- Reduce barriers to and increase treatment-related clinical trial enrollment across all populations through education and awareness.

- Promote efforts to include coverage for the cost of patient care received during participation in clinical trials.

## For More Information

New York State Medicaid Cancer Treatment Program
www.health.state.ny.us/nysdoh/bcctp/bcctp.htm

National Comprehensive Cancer Network
www.nccn.org

National Quality Forum: Consensus Standards for Quality of Cancer Care
http://www.qualityforum.org/Publications/2009/05/National_Voluntary_Consensus_Standards_for_Quality_of_Cancer_Care.aspx

American College of Surgeons Commission on Cancer
http://www.facs.org/cancer/

National Cancer Institute – Clinical Trials Information
www.cancer.gov/clinicaltrials

U.S. National Institutes of Health, Clinical Trials Website
www.clinicaltrials.gov/

# II-4: Survivorship

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

Advances in early detection and treatment are improving cancer outcomes, and today more individuals are living many years after cancer diagnoses. A cancer survivor is someone who has been diagnosed with cancer, from the time of diagnosis, through treatment and beyond. The number of cancer survivors in the United States increased from 3 million in 1971 to 11.7 million in 2007.[1] In New York, it is estimated that more than 850,000 people with histories of cancer were alive in January 2009.[2]

Cancer survivors may face challenges during treatment and after, including those related to their physical and emotional health, as well as those related to legal and financial matters. Survivorship encompasses more than just the need for services to address the psychosocial and spiritual impact of a cancer diagnosis. Health promotion after cancer treatment can improve survival and quality of life. Cancer survivors should be encouraged to avoid tobacco use and to stay physically active. They also need high-quality follow-up care after completion of active cancer treatment. This includes monitoring for second cancers and recurrence of the first cancer, as well as prevention, detection and treatment of late effects of the cancer therapies they received. Cancer survivors should be provided with a written summary of their treatment (written care plan) from their oncology team which they can share and use with their primary care provider to inform their follow-up needs.

## Measurable Objectives

1. By 2017, establish a means by which to assess cancer survivor' health outcomes (Developmental measures - Potential data sources: BRFSS, American College of Surgeons), including those that track:
   a. The proportion of cancer survivors across all populations receiving a written care plan.
   b. The mental and physical health-related quality of life of cancer survivors.
   c. The proportion of cancer survivors engaging in regular physical activity.
   d. The number of health care facilities adhering to National Quality Forum consensus standards for symptom management and end-of-life care.

## Suggested Strategies (This is not an exhaustive list)

- Develop new, or enhance and leverage existing, regional resource directories to increase cancer survivors' awareness of the availability of community supportive services, including transportation, housing, nutrition, outpatient treatment, psychosocial support services, disability income, legal supportive services and wellness programs.

- 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 health care providers.

- Provide appropriate follow-up care (e.g., guideline-concordant cancer screening) and other appropriate post-treatment support (e.g., tobacco cessation counseling, physical activity recommendation) to cancer survivors.

- Conduct research and education about cancer survivors' needs, including adequacy of follow-up and support services, and barriers encountered during the diagnostic, treatment and post-treatment phases of care.

- Implement policies across multiple settings that deter employment and insurance discrimination.

- Promote health care facility adherence to National Quality Forum consensus standards for symptom management and end-of-life care.

- Track the number of New York cancer treatment facilities with STAR certification as comprehensive cancer rehabilitation programs.

## For More Information

Association of Cancer Online Resources:
www.acor.org

American Childhood Cancer Organization:
www.acco.org

LiveStrong (the Lance Armstrong Foundation):
www.livestrong.org

National Coalition for Cancer Survivorship:
www.canceradvocacy.org

National Cancer Institute Office of Cancer Survivorship:
www.survivorship.cancer.gov

New York State Department of Health – List of Community Programs:
www.health.ny.gov/diseases/cancer/services/partnerships/

National Quality Forum: Consensus Standards for Quality of Cancer Care:
http://www.qualityforum.org/Publications/2009/05/National_Voluntary_Consensus_Standards_for_Quality_of_Cancer_Care.aspx

Oncology rehabilitation STAR certification:
http://www.oncrehab.com/

## II-5: Palliative Care

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

According to the Center to Advance Palliative Care (CAPC), palliative care encompasses a continuum of support, including pain and symptom management, from the time of diagnosis throughout the course of illness. Hospice, one type of palliative care, may be offered in the late stages of a serious or life-threatening disease, such as cancer, Palliative care uses an interdisciplinary approach to prevent or treat, as early as possible, the symptoms and side effects of the disease and its treatment, in addition to the related psychological, social and spiritual concerns experienced by cancer survivors.

Palliative care is better understood as an adjunct to treatment and supportive services. No longer does the inclusion of palliative care signal a failure in treatment or imminent death. Rather, a focus on pain control, symptom management and caregiver support means caregivers, physicians and the family more often view palliative care as a vital service available to cancer care patients to improve their quality of life. NYS has recognized the importance of palliative care and hospice through groundbreaking legislation enacted in recent years:

1) The Palliative Care Education and Training Act (2007) established a Palliative Care Education and Training Council charged with making recommendations relative to grants for palliative care-certified medical schools and residency programs, criteria for designation of Centers for Palliative Excellence, and criteria for designating Palliative Care Resource Centers.

2) The Palliative Care Information Act (PCIA) (2010) – Requires that palliative care information and counseling be offered to patients diagnosed with a terminal illness.

3) Palliative Care Access Act (2011) – Expands upon the PCIA and implements the NYS Medicaid Redesign Team's recommendation to facilitate access to appropriate palliative care consultations and services for patients with advanced, life-limiting illnesses or conditions.

4) The Hospice Modernization Act (2011) – Supports the NYS Medicaid Redesign Team's recommendation to expand hospice and changes the definition of terminal prognosis from six months to 12 months.

In addition, pediatric palliative care has been recognized by the addition of pediatric palliative care services to NYS Care at Home I/II Medicaid Waivers and the Concurrent Care for Children provision included in the 2010 federal PPACA, which allows children to receive life-prolonging treatment and hospice concurrently.

More palliative care-certified professionals will be needed to increase the breadth of palliative care services in the state. A concerted, statewide effort is needed to achieve the vision for better and more accessible palliative care.

## Measurable Objectives

1. By 2017, increase the number of health care professionals either board-certified or certified in hospice and palliative care, including:
    a. Increase the number of New York board-certified physicians with a sub-certification in hospice and palliative medicine to 149. (Baseline, 2010: 102, The Official ABMS Directory of Board Certified Medical Specialties, 43rd Edition, 2011)

b. Increase the number of nurses in New York who have a certification in Hospice and Palliative Care to:
    i. 75 Advance Practice Nurses (Baseline, 2012: 68),
    ii. 650 Registered Nurses (Baseline, 2012: 599),
    iii. 75 Licensed Practical and Vocational Nurses (Baseline, 2012: 50),
    iv. 200 Nurses Assistants (Baseline, 2012: 93), and
    v. 20 Administrators (Baseline, 2012: 3, The National Board for Certification of Hospital and Palliative Nurses).

c. Increase the number of Hospice and Palliative Care Certified Social Workers, certified through the National Association of Social Workers (NASW) and the National Hospice and Palliative Care Organization (NHPCO) to:
    i. 50 Advanced Certified Hospice and Palliative Care Social Workers (NYS Baseline, 30), and
    ii. 10 Certified Hospice and Palliative Care Social Workers (NYS Baseline, 0. Source, NASW).

2. By 2017, increase to 15 the number of providers approved to provide pediatric palliative care services available under the Care at Home Medicaid Waiver Program I/II for children with special needs (Baseline, 2011 = 7, NYSDOH Office of Health Insurance Programs).

3. By 2017, improve the state’s grade on the Center to Advance Palliative Care’s Report Card to an A (Baseline: B, 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 (This is not an exhaustive list)

- Work with associations representing health care professionals to promote hospice and palliative care certification and credentialing.

- Promote oncology-related careers for physicians and nurses, especially those certified in palliative care.

- Promote efforts to fund palliative care-certified medical schools and residency programs under the Palliative Care Education and Training Act.

- Support implementation of palliative care programs for children (e.g. Concurrent Care for Children under the PPACA and Pediatric Palliative Care Services under the Care at Home I/II Medicaid Waiver).

- Encourage oncology and inpatient programs to incorporate components of palliative care.

- Encourage health care providers, institutions, voluntary organizations, government agencies and others to provide education and information on palliative care and hospice care, including scope of services, locations, access to care and reimbursement.

- Document and promote the availability of palliative care in inpatient and outpatient settings in NCI-designated cancer centers, tertiary hospitals, children’s hospitals and community cancer centers in NYS.

- Monitor changes in State and Federal legislation and funding regarding palliative care, and serve as a source of this information for health care providers, institutions, voluntary organizations and others.

## For More Information

Hospice and Palliative Care Association of New York State:
www.hpcanys.org

Center to Advance Palliative Care:
www.capc.org

National Hospice and Palliative Care Organization:
www.nhpco.org

Information about the Palliative Care Information Act:
http://www.health.ny.gov/professionals/patients/patient_rights/palliative_care/information_act.htm

Information about the Palliative Care Access Act:
http://www.health.ny.gov/professionals/patients/patient_rights/palliative_care/phl_2997_d_memo.htm

## II-6: Healthcare Workforce

All New Yorkers will have equal access to an adequate supply of primary care and oncology-related providers with demonstrated competencies in cancer prevention, detection, treatment, supportive services, and palliative care.

The cancer care workforce is an increasingly broad category of health care professionals, involving specialties across the continuum of care—from prevention and screening, to treatment, survivorship and palliative care. A 2007 study commissioned by the American Society of Clinical Oncology (ASCO) projects a significant shortage of medical and gynecologic oncologists in the United States by 2020. The study found that an aging and growing population, increasing numbers of cancer survivors, and slower growth in the supply of oncologists will result in a shortage of 2,550 to 4,080 oncologists by 2020. The report also estimated that the demand for oncology services in the nation is expected to increase 48 percent between 2005 and 2020.[1]

In June 2011, the Center for Health Workforce Studies at the University of Albany, School of Public Health (CHWS), created *The Cancer Care Workforce in New York*.[2] Rich with information about the disciplines within the cancer workforce, the practice settings in which cancer care is rendered, and geographic distributions of cancer care providers across the state, the report underscored the same shortage estimates as the ASCO study. In New York, for instance, the ratio of oncologists to new cases of cancer was less than 1.0 oncologist per 100 cases in most parts of the state. The Southern Tier, Mohawk Valley and North Country reported the lowest ratios at 0.67 per 100, 0.45 per 100, and 0.51 per 100 new cancer incidents, respectively. The highest ratios are in downstate, population-rich areas, including New York City and Long Island (2.02 and 1.28 oncologists per 100 new cancer cases, respectively).[2]

For cancer patients and their families, a primary care and/or oncology-related workforce shortage could hinder access to certified professionals and high quality services. Shortage conditions may force individuals with cancer to travel out of their local areas to regional cancer centers or urban communities where services are present, or to make treatment decisions based upon locally available services rather than recommended standards of care.

The NYS Area Health Education Centers (AHECs) create pipelines for students pursuing health careers, identify areas of need where there are shortages or migration of providers, and develop education and training for professionals already in the health care field. Recruitment, retention and training of the cancer care workforce is vital to meeting the demands of cancer services in NYS.

### Measurable Objectives

1. By 2017, establish ongoing assessments of the specialties and geographic locations of the cancer care workforce in NYS (Developmental measure - Potential data source: CHWS).

### Suggested Strategies (This is not an exhaustive list)

- Reduce barriers to the supply of cancer care providers in NYS.
    - Support public policy changes which would remove U.S. permanent residency requirements for professional licensure among oncology-related professions.

    - Implement PPACA provisions for loan forgiveness and other activities aimed at building the health care workforce.

  - Promote efforts to increase the number of physicians who provide primary and cancer-specific care in geographic areas where they are needed.

- Increase awareness of cancer-related fields as a career option.
  - Urge federal policy change to increase the cap on Graduate Medical Education residency programs to allow for more physicians to be trained in primary care and cancer-related fields.

  - Identify at least one set of cancer-specific educational modules to encourage persons of all ages to pursue careers in cancer, in collaboration with educational partners such as the AHECs.

  - Collaborate with AHECs on training and recruitment projects in rural and underserved areas.

  - Partner with post-secondary educational systems (e.g. the State University of New York [SUNY] system, the City University of New York [CUNY] System and the Boards of Cooperative Educational Services [BOCES]) to develop and/or share cancer career specific information for students.

  - Partner with medical schools, schools of nursing/social work/allied health professionals, foundations and corporations to advocate for private funding support for cancer-related professional education such as internships, fellowships and student participation at conferences.

  - Encourage cancer care training within collaborative care models such as patient-centered medical homes.

- Ensure access to oncology professionals with demonstrated competency in cancer care.
  - Increase the number of physicians, nurses and social workers with subspecialties that relate to specific needs in the oncology field (i.e., hospice and palliative care).

  - Encourage and support continuing education and specialty certification for all professionals working in cancer care.

  - Encourage additional use of telemedicine, particularly in medical shortage areas.

  - Develop linkages to integrate behavioral health care providers in cancer care.

- Increase the diversity of the oncology health workforce to better match the composition of the New York population by partnering with medical/allied health professional organizations which serve non-White professionals to develop and/or distribute materials regarding the need for oncology specialists, certification processes and training opportunities.

## For More Information

Center for Health Workforce Studies:
http://chws.albany.edu/
NYS Area Health Education Center System:
www.ahec.buffalo.edu/
Boards of Cooperative Education Services (BOCES):
www.boces.org
Board of Oncology Social Work Certification:
www.oswcert.org

# Putting Cancer Prevention and Control in Context: What New Yorkers Can Do

Controlling cancer requires citizens and organizations of all kinds to get involved and make contributions—however small they may seem. Participation in the Consortium and its many committees is one way to become involved to address the cancer burden through implementation of strategies in this Plan. However, individual contributions are just as important as those made by companies, community organizations, health care providers and policy makers. Any of these entities, regardless of involvement in the Consortium, can implement suggested strategies listed in this Plan or can engage in activities of their own to address the state's cancer burden. The following activities illustrate the many ways to make a difference at home, at work and in communities.

| | |
|---|---|
| **Actions Individuals Can Take** | • Know your family health history and discuss with your doctor whether genetic counseling might be right for you. |
| | • Discuss with your health care provider what screening tests might be right for you. |
| | • If you use tobacco, quit. If you don't use tobacco, don't start. |
| | • Eat nutritious meals that include fruits, vegetables and whole grains. |
| | • Exercise at least 30 minutes a day on five or more days each week. |
| | • For women of child-bearing age, talk to your health care provider about the benefits of breastfeeding. Breast-feed infants exclusively for at least the first 6 months after birth. |
| | • If you use alcohol, drink only in moderation. |
| | • Install radon detectors to help reduce your family's potential exposure. |
| | • Use proper sunscreen; avoid tanning salons and monitor sun exposure. |
| | • Volunteer your services or donate to local cancer care organizations and events. |
| | • Teach your children healthy behaviors and lead by example. |
| | • Work with groups in your community to promote healthy community initiatives (e.g. tobacco, physical activity, breastfeeding, healthy foods in schools coalitions). |
| | • Write letters to the editor or meet with local decision makers to inform them of how they can help reduce the cancer burden in their communities. |
| | |
| **Actions Hospitals and Health Care Organizations Can Take** | • Make available culturally and linguistically appropriate information and materials about cancer prevention, screening, treatment, clinical trials, survivorship and palliative care. |
| | • Institute policies that promote health and wellness among patients and employees (e.g. tobacco-free campuses, baby-friendly hospital policies, healthy cafeteria foods and vending policies). |
| | • Develop systems that ensure all individuals are:<br>• Appropriately screened for cancer,<br>• Asked about tobacco use and provided with options for quitting,<br>• Educated about the importance of physical activity and eating well,<br>• Receiving evidence-based treatment and a written follow-up care plan, and<br>• Given access to a cancer rehabilitation program |
| | • Adhere to National Comprehensive Cancer Network guidelines. |
| | • Facilitate access to palliative care when needed. |
| | • Provide continuing medical education courses for clinical staff on clinical trials, patient-centered care, survivorship and palliative care in a framework of cultural sensitivity. |

| | |
|---|---|
| | • Distribute cancer prevention and screening information to staff and visitors. |
| | • Develop or participate in community-based partnerships to expand cancer care awareness, outreach and support services to local populations facing health disparities. |
| | • Develop secondary education and college-level programs to expand educational options for new/potential health care workers. |
| | • Provide cancer registry data in a timely manner to the NYS Cancer Registry. |
| | • Seek accreditation by the Commission on Cancer. |
| | • Provide meeting space for relevant community organizations efforts. |
| | |
| **Actions Local Health Departments Can Take** | • Help individuals and families establish regular health care providers and, if applicable, to apply for public health insurance. |
| | • Collaborate with national, state and/or regional programs to address the local cancer burden through cancer prevention and control efforts (such as those outlined in this Plan). |
| | • Institute tobacco-free campus policies, healthy vending/cafeteria policies and other wellness policies for the organization. |
| | • Develop and maintain a list of available community-health services and post, if available, via local listings such as the United Way 2-1-1 directory. |
| | • Sponsor screening events and work with local practitioners to access affordable treatment and follow-up care. |
| | • Distribute culturally and linguistically appropriate cancer prevention, screening, treatment, clinical trial and palliative care information. |
| | • Provide meeting space for relevant community organizations' efforts. |
| | |
| **Actions Community, Faith-Based and Professional Organizations Can Take** | • Support initiatives to encourage exercise, tobacco cessation and nutritional eating across the life span. |
| | • Support private funding of cancer research and educating tomorrow's health care workers. |
| | • Develop partnerships with local health care systems/providers to expand cancer care awareness, outreach and support services to local populations facing health disparities. |
| | • Collaborate with other organizations to address the local cancer burden through cancer prevention and control efforts (such as those outlined in this Plan). |
| | • Institute tobacco-free campus policies, healthy vending/cafeteria policies and other wellness policies for the organization. |
| | • Increase interest in and awareness of the need to train and certify cancer care professionals (e.g. palliative care nursing, oncology certified nursing, oncology social work and hospice medicine). |
| | • Distribute culturally and linguistically appropriate cancer prevention, screening, treatment, survivorship and palliative care services information. |
| | • Promote evidence-based, guideline-driven cancer screening for the organization's clients, employees, members and volunteers. |
| | • Sponsor a cancer awareness campaign in collaboration with community partners. |
| | • Sponsor cancer-related support groups at your facilities. |
| | • Provide supportive care services such as transportation to treatment, meals to home-bound individuals, and companionship visits to survivors and their caregivers. |
| | • Support legislation and/or policies that promote cancer prevention and control efforts. |
| | • Provide education about and support clinical research participation. |

| | |
|---|---|
| | • Write letters to the editor or meet with local decision makers to inform them how they can help reduce the cancer burden in their communities. |
| | |
| **Actions Employers Can Take** | • Institute policies that promote health and wellness among employees, such as:<br>• Adopt tobacco-free campus policies,<br>• Provide healthy food options and nutritional information in cafeterias, vending machines and break rooms,<br>• Ensure employee benefit packages include comprehensive cancer coverage, and<br>• Support breastfeeding mothers returning to the workplace by providing space and time to utilize breast pumps. |
| | • Consistently monitor Environmental Protection Agency (EPA) and Occupational Health and Safety Administration (OSHA) compliance related to employee's exposure to workplace carcinogens. |
| | • Partner with local community organizations and health care settings to increase cancer awareness, prevention and screening efforts. |
| | • Provide employees with paid leave for clinical preventive service appointments, such as breast, cervical and colorectal cancer screening. |
| | • Sponsor wellness programs for employees and their families, addressing topics such as promotion of physical activity and nutrition, tobacco cessation and cancer screening. |
| | |
| **Actions Schools and Universities Can Take** | • Institute policies that promote health and wellness among students and employees, such as:<br>• Adopt tobacco-free campus policies,<br>• Provide healthy food options and nutritional information in cafeterias and vending machines ,<br>• Ensure that health benefit packages include comprehensive cancer coverage, and<br>• Support breastfeeding mothers returning to school by providing space on campus to utilize breast pumps. |
| | • Adopt, adapt or create curricula that encourage students to enter cancer-related professions and encourage volunteerism in cancer-related activities. |
| | • Include cancer-related information in all health classes. |
| | • Support research studies to reduce health disparities due to factors such as socioeconomic status, ethnicity, race, age and low health literacy. |
| | • Support public policy initiatives to decrease exposure to known environmental carcinogens. |
| | • Host or sponsor support groups and cancer-related events. |
| | • Provide educational seminars on topics related to cancer prevention and control. |
| | |
| **Actions Physicians and Other Healthcare Providers Can Take** | • Ensure waiting rooms include culturally and linguistically appropriate information and support resource literature about cancer prevention, screening, treatment, clinical trials, survivorship and palliative care. |
| | • Encourage patients to have appropriate cancer screenings, eat a healthy diet, maintain a healthy weight and exercise regularly. |
| | • Assist patients to quit smoking by providing the "5 A's" of treating tobacco dependence (Ask, Advise, Assess, Assist, and Arrange follow-up). |
| | • Implement consistent, practice-wide guideline-concordant cancer screening for all age-appropriate patients. |
| | • Participate in quality-improvement collaboratives that enable screened patients to |

| | |
|---|---|
| | receive comprehensive cancer treatment, across all modalities, regardless of their current health care insurance status. |
| | • Write letters to the editor or meet with local decision makers to inform them how they can help reduce the cancer burden in their communities. |
| | • Participate in and promote patient access to cancer clinical trials. |
| | • Refer patients to community survivorship resources and palliative care, as appropriate. |
| | • Assure that all patients are evaluated by a multidisciplinary tumor board. |
| | • Report all cancer data in a timely manner and actively participate in NYS Cancer Registry data collection and reporting. |
| | |
| **Actions Private and Public Insurers Can Take** | • Distribute culturally and linguistically appropriate cancer prevention, screening, treatment, survivorship and palliative care services information. |
| | • Develop systems that ensure all clients are appropriately screened for cancer, asked about tobacco use and provided with options for quitting, educated about the importance of physical activity and eating well, and receive evidence-based treatment and a written follow-up care plan after treatment is completed. |
| | • Monitor health care quality metrics (e.g., HEDIS measures) related to cancer screening and prevention and work with health care providers to improve as needed. |
| | • Join/support/fund quality improvement collaboratives to ensure that providers recommend evidence-based, guideline-driven cancer screening, diagnostic and treatment services. |
| | • Collaborate with national, state and regional programs to address the local cancer burden through cancer prevention and control efforts, as outlined in this Plan. |
| | • Sponsor wellness programs, support initiatives and provide incentives to members who engage in health-promoting behaviors. |
| | • Institute tobacco-free campus policies, health vending/cafeteria policies, and other wellness policies. |
| | • Encourage participation in cancer clinical trials. |
| | • Support legislation and policies that support cancer prevention and control efforts. |

# Appendix A: NYS Cancer Consortium General Membership 2012

| NYS Cancer Consortium General Membership – 2012 | |
|---|---|
| Mary Applegate, MD, MPH<br>University at Albany<br>School of Public Health | Ronda Rosman<br>Rockland County Department of Health<br>Public Health Education Program |
| Marcy Bencivenga<br>Northern Appalachia Cancer Network | Erasmus Schneider, PhD<br>NYS Department of Health<br>Wadsworth Center |
| Nina Bickell, MD, MPH<br>Mount Sinai School of Medicine<br>Dept. of Health Evidence & Policy | Maria J. Schymura, PhD<br>NYS Department of Health<br>Bureau of Cancer Epidemiology |
| Clare B. Bradley, MD, MPH<br>IPRO | Judy Smith, MD, MS, CPE, FACS<br>Roswell Park Cancer Institute<br>Surgical Oncology |
| Neil Calman, MD<br>Institute for Family Health | Darryl Somayaji, PhD, MSN, RN, CCRC<br>Roswell Park Cancer Institute |
| David O. Carpenter, MD<br>University at Albany Institute for Health and Environment | Clarice Spica Curry, MA, LCSW<br>Good Shepherd Hospice |
| Sandra Cassese, RN, MSN, CNS<br>The Hospitals of Health Quest | Lynette Stark<br>Northeastern NY Affiliate of Susan G. Komen for the Cure |
| Eva Chalas, MD, FACOG, FACS<br>Winthrop University Hospital<br>Clinical Cancer Services | Sabina Steiner, RN, MSN, MPH<br>Long Island Ovarian Cancer Education Advocacy Network (LI OCEANS) |
| Jan Chytilo<br>American Cancer Society-Eastern Division | Marion R. Thompson, RN, MSN, MPA, CPHQ<br>Montefiore Medical Center |
| Eileen Clinton, MS<br>Medical Society of the State of NY | Laurene Tumiel Berhalter, PhD<br>SUNY Buffalo<br>Primary Care Research Institute |
| Peggy Cottrell, MS, CGC<br>White Plains Hospital Center<br>Dickstein Cancer Treatment Center | Linda Veit, BS, CCRP<br>SUNY Upstate Medical Center |
| Joan E. Dacher, PhD, RN, GNP<br>The Sage Colleges | Jennifer Warner<br>Twin Tiers Region Affiliate of Susan G. Komen for the Cure |
| Avi Barbasch, MD<br>New York Oncology LLC | Kameron Wells, ND, RN<br>Community Health Care Association of NYS<br>Clinical Quality Initiatives |
| Audrey Benenati, MHA, CASAC<br>Tully Hill Chemical Dependency Treatment Center | Kristina M. Young<br>Western NY Public Health Alliance, Inc. |

## NYS Cancer Consortium General Membership – 2012

| | |
|---|---|
| Francis P. Boscoe, PhD<br>New York State Cancer Registry | Carol Greif<br>Metro. NY Cancer Registrar's Association |
| Toni Cabat, DSW, LCSW, OSW-C<br>Association of Pediatric Oncology Social Workers | Ludovico Guarini, MD<br>Maimonides Infants and Children's Hospital, Pediatric Hematology/Oncology |
| Rosalie Canosa, LCSW- R, MPA<br>CancerCare | Sasha Harry<br>The Leukemia & Lymphoma Society<br>NYC Chapter |
| Sue Casanova<br>BRiDGES to Prevent Tobacco Program | Kristina Hawes<br>American Cancer Society-Eastern Division<br>NYS Comprehensive Cancer Control |
| Alice C. Ceacareanu, PharmD, PhD<br>SUNY Buffalo, School of Pharmacy & Pharmaceutical Sciences | Theresa Hinman, MPH<br>New York State Department of Health<br>Cancer Registry |
| Mitchell Chorost, MD<br>NY Hospital Queens Cancer Center<br>Surgical Oncology | David C. Hohn, MD<br>Roswell Park Cancer Institute |
| Peter Cittadino<br>American Cancer Society- Eastern Division | Cathy Ives, RN, OCN, CBCN<br>St. Mary's Cancer Medicine Center |
| Anna D. Colello<br>NYS Department of Health | Vijay Jayaprakash, MBBS, PhD<br>Roswell Park Cancer Institute<br>Oral Cancer Screening |
| Mark Cronin<br>American Cancer Society, Eastern Division<br>Corporate & Systems Initiatives | Kathie- Ann Joseph, MD, MPH<br>NYU- Langone Medical Center<br>Breast Services |
| Heather Dacus, DO, MPH<br>NYS Department of Health<br>Bureau of Chronic Disease Control | Richard J. Kilburg<br>SUNY Upstate Cancer Center |
| Mary Catherine Daniels, LMSW<br>NYS Department of Health<br>Cancer Survivorship Initiatives | Leslie J. Kohman, MD<br>SUNY Upstate Cancer Center |
| Carol M. Devine, PhD, RD<br>Cornell University<br>Nutritional Sciences | Dorothy S. Lane, MD, MPH<br>SUNY Stony Brook School of Medicine<br>Dept. of Preventive Medicine |
| Judith Dobrof, DSW<br>Cancer Support Team | Heather LeBlanc<br>NYS Department of Health<br>Cancer Services Program |
| Elisa Einbund, CTR<br>NY Westchester Square Medical Center | Megan L. Leone, RHIA, CTR<br>NYS Cancer Registry |
| Deborah O. Erwin, PhD<br>Roswell Park Cancer Institute<br>Cancer Prevention & Population Sciences | Carol Lindhorst<br>American Cancer Society- Eastern Division, Patient and Family Services |
| Debra B. Feinberg, BSPharm, JD, FASHP<br>NYS Council of Health- System Pharmacists | Vicki Lucarini, RN, BSN |

| NYS Cancer Consortium General Membership – 2012 | |
|---|---|
| Marcas W. Flindt, CHN, MSN<br>Chenango County Health Department | Wendy Luftig, Esq.<br>City Bar Justice Center of the NYC Bar Assoc., Cancer Advocacy Project |
| Jonathan W. Friedberg, MD<br>University of Rochester<br>James P. Wilmot Cancer Center | Sarah Nicole Mahoney<br>Capital Region Special Surgery |
| Ana Garcia<br>The New York Academy of Medicine | Helen McCarthy, RN, MPA, CTR<br>SUNY/Empire State College |
| Cheryl Gelder- Kogan, MHSA<br>CGK Consulting | Kathy A. McMahon<br>Hospice & Palliative Care Association of NYS |
| To Life!, Inc. | Diane E. Meier, MD<br>Center to Advance Palliative Care |
| Raymond L. Goldsteen, Dr.PH<br>SUNY Stony Brook School of Medicine<br>Graduate Program in Public Health | Gary Mervis<br>Camp Good Days & Special Times, Inc. |
| Karen DeMairo, BA, MS<br>The Leukemia & Lymphoma Society | Carolyn Messner, DSW, MSW, LCSW- R<br>CancerCare, Education and Training |
| Luba Djurdjinovic, MS<br>Ferre Institute<br>Genetic Programs | Darryl Mitteldorf, LCSW<br>New York State Prostate Cancer Coalition and LGBT Cancer Project |
| Steven B. Edge, MD<br>Roswell Park Cancer Institute | Cheryll Moore<br>Erie County Health Department |
| Mark H. Einstein, MD, MS<br>A. Einstein College of Medicine & Cancer Center, Clin. Research for Women's Health & Gyn. Onc. | Pat Morris, RN, MS, OCN<br>St. Peter's Hospital, Albany<br>Debra J. Nichols<br>Cattaraugus County Health Department |
| Wanda E. Febus<br>Patient Advocate Foundation<br>Hispanic/Latino Outreach Program | Jamie S. Ostroff, PhD<br>Memorial Sloan Kettering Cancer Center |
| Stuart L. Fischman, DMD<br>SUNY Buffalo<br>School of Dental Medicine | Elizabeth Owens, RN, MS, OCN<br>American Cancer Society- Eastern Division, Board of Directors |
| Lisa Franclemont<br>Cancer Services Program of Genesee & Orleans | Kepal N. Patel, MD<br>NYU- Langone Medical Center<br>Otolaryngology, Endocrine Surgery |
| Jennifer L. Frustino<br>Roswell Park Cancer Institute | Bert M. Petersen, Jr., MD, FACS<br>St. Barnabas Hospital |
| Renee Gecsedi, MS, RN<br>NY State Nurses Association<br>Education, Practice & Research | Elizabeth Rausch- Phung, MD, MPH<br>NYS Department of Health<br>Bureau of Immunization |
| Jeanmarie M. Glasser, MS, RT(T)<br>Upstate University Hospital | Sheri Scavone, PT, EHSA<br>NYS Department of Health<br>Cancer Services Program |

| NYS Cancer Consortium General Membership – 2012 | |
|---|---|
| Paul Goodwyn<br>SUNY Upstate Medical University | Elinor Randi Schoenfeld, PhD<br>SUNY Stony Brook<br>Dept. of Preventive Medicine |
| Phyllis Goldstein<br>Lung Cancer Alliance-NY | Michael Seserman, MPH, RB<br>American Cancer Society- Eastern Division, Strategic Health Alliances |
| Karen Greendale, MA, CGC<br>Consultant – Centers for Disease Control and Prevention | Alison Snow, LCSW<br>Beth Israel Medical Center Cancer Center |
| Michael Grignon<br>The Leukemia & Lymphoma Society | Pat Spencer- Cisek, MS, ANP BC, AOCN<br>Mount Sinai School of Medicine<br>Tisch Cancer Institute |
| Andrea Haradon<br>S2AY Rural Health Network | Robert W. Sponzo, MD, FACP<br>Glens Falls Hospital<br>C.R. Wood Cancer Center |
| Donald L. Hassig<br>Cancer Action NY | Arthur Stein, PhD<br>American Psychiatric Association<br>NYS Psychological Association |
| Julie Herson Steele<br>NYS Department of Health<br>Cancer Services Program | Angela Swartzman, BS, MHA<br>Chautauqua County Health Department |
| David P. Hoffman, Med, CCE<br>NYS Department of Health<br>Office of Long Term Care | Kristina Thomson, LCSW<br>American Cancer Society- Eastern Division, Corporate & Systems Initiative |
| Blair Horner<br>American Cancer Society- Eastern Division, Advocacy | Tina Utley Edwards<br>Chenango Health Network |
| Lina Jandorf, MA<br>Mount Sinai School of Medicine<br>Dept. of Oncological Services | Amy Voelkl<br>American Cancer Society- Eastern Division, Quality Improvement, Data Management & Evaluation |
| Amy Jesaitis, MPH, RD, PAPHS<br>NYS Department of Health<br>Bureau of Community Chronic Disease Prevention | Nikolas Webster<br>NYS Department of Health<br>Bureau of Environmental Radiation Protection |
| Vikramjit Kanwar, MRCP(UK), MBA, FAAP<br>Melodies Center for Childhood Cancer and Blood Disorders<br>Div. of Pediatric Hematology/Oncology | Christy Widman<br>Roswell Park Cancer Institute & Western NY Cancer Coalition |
| Maureen Killackey, MD, FACOG, FACS<br>Memorial Sloan Kettering Cancer Center<br>Regional Care Network | Theodora Ziongas, MA<br>American Cancer Society- Eastern Division, Onsite Patient Navigation Sustainability |

| NYS Cancer Consortium General Membership – 2012 | |
|---|---|
| Suzanne E. Kuon<br>NYS Department of Health<br>Bureau of Chronic Disease Control | Joan E. O'Brien, MSEd, RT(T) |
| Leslie Larsen, MPH | Rosemarie Slevin Perocchia RN, Med |
| Eugene J. Lengerich, VMD, MS<br>Northern Appalachia Cancer Network | Jackie Ramos- Calderon, MSW<br>Ralph Lauren Center for Cancer Care & Prevention |
| Jean C. LePere<br>Memorial Sloan Kettering Cancer Center<br>Regional Care Network | Sabrina Mosseau, BS, RN, OCN<br>Albany Memorial Hospital<br>Medical Oncology & Women's Health |
| Joseph Lowy, MD<br>NYU-Langone Medical Center<br>Palliative Care Services | Paul Goodwyn<br>SUNY Upstate Medical University |
| Candice A. Lucas, MBA<br>Center for Community Health<br>Health Part. and Cancer Services Program of Monroe County | Leslie Moran<br>NY Health Plan Association Council |
| Virginia Lyons, RN<br>Catholic Health<br>Women's Services | Anita McFarlane, MPH (Co-Chair)<br>Greater NYC Affiliate of Susan G. Komen for the Cure |
| Sharon Mathe<br>Healthy Community Alliance, Inc. | Gina M. O'Sullivan, MPH<br>NYS Department of Health<br>Bureau of Chronic Disease Eval. & Research |
| Mari Carlisimo<br>NYCDOHMH | Amy E. Mlodzianowski, MS. LMSW<br>Gilda's Club Westchester |
| Mary Eileen McPhee, MS, BSN, RN<br>Roswell Park Cancer Institute<br>Clinical Research Network | Julie Mischo<br>Winthrop University Hospital<br>Oncology Support Services |
| Jaymie R. Meliker, PhD<br>SUNY Stony Brook<br>Graduate Program in Public Health | Catherine R. Messina, PhD<br>SUNY Stony Brook School of Medicine<br>Department of Preventive Medicine |

# Appendix B: NYS Cancer Consortium Steering Committee - 2012

Toni Cabat, DSW, LCSW
Association of Pediatric Oncology Social Workers

Rosalie Canosa, LCSW-R
CancerCare

Heather Dacus, DO, MPH
NYS Department of Health
Bureau of Chronic Disease Control

Debra Feinberg, BSPharm, JD, FASHP
NYS Council of Health-System Pharmacists

Paul Goodwyn
SUNY Upstate Medical University

Maureen Killackey, MD, FACOG, FACS
Memorial Sloan Kettering Cancer Center
Regional Network

Anita McFarlane, MPH (Co-Chair)
Greater NYC Affiliate of Susan G. Komen for the Cure

Gary Mervis
Camp Good Days & Special Times

Leslie Moran
NY Health Plan Association Council

Sabina Steiner, RN, MSN, MPH
Long Island Ovarian Cancer Education Advocacy Network (LI OCEANS)

Mark Cronin, MBA
American Cancer Society- Eastern Division
Corporate & Systems Initiatives

Karen DeMairo, BA, MS
Leukemia & Lymphoma Society
Long Island Chapter

Cheryl Gelder-Kogan, MHSA (Co-chair)
CGK Consulting

Lina Jandorf, MA
Mount Sinai School of Medicine
Department of Oncological Services

Leslie Kohman, MD
SUNY Upstate Medical Center

Kathy McMahon
Hospice & Palliative Care Association of NYS

Julie Mischo
Winthrop University Hospital
Oncology Support Services

Darryl Somayaji, PhD, MS, RN, CCRC
Roswell Park Cancer Institute
Oncology Nurses Assn.- Western NY Chapter

Kameron Wells, ND, RN
Community Health Care Association of NYS
Clinical Quality Initiatives

Mari Carlisimo
New York City Department of Health and Mental Hygiene

# Appendix C: NYS Cancer Consortium Committees - 2012

**Clinical Trials Committee**

Chair: Anita McFarlane, MPH, Greater NYC Affiliate of Susan G. Koman for the Cure

**Communications Committee**

Chair: Kristina Hawes, American Cancer Society
Steering Committee Liaison: Anita McFarlane, MPH, Greater NYC Affiliate of Susan G. Koman for the Cure

**Evaluation Committee**

Chair: Gina O’Sullivan, MPH, NYS Department of Health, Bureau of Chronic Disease Evaluation and Research
Steering Committee Liaison: Lina Jandorf, MA, Mount Sinai Medical University, Dept. of Oncological Sciences

**Membership Committee**

Chair: Kristina Hawes, American Cancer Society
Steering Committee Liaison: Anita McFarlane, MPH, Greater NYC Affiliate of Susan G. Koman for the Cure

**Palliative Care Committee**

Chair: Joan Elise Dacher, PhD, RN, GNP, The Sage Colleges, Department of Nursing
Steering Committee Liaison: Kathy McMahon, Hospice and Palliative Care Association of NYS

**Policy Committee**

Chair: Suzanne Kuon, NYS Department of Health, Bureau of Chronic Disease Control
Co-chair: Blair Horner, American Cancer Society- Eastern Division, Advocacy
Steering Committee Liaison: Kathy McMahon, Hospice and Palliative Care Association of NYS

**Workforce Shortages Committee**

Chair: Renee Gescedi, MS, RN, NYS Nurses Association, Education, Practice & Research
Steering Committee Liaison: Heather Dacus, DO, MPH, NYS Department of Health, Bureau of Chronic Disease Control

References, in order of appearance

Opening Page Data Summary

1. NYS Department of Health - Bureau of Biometrics and Health Statistics Vital Statistics Data as of February, 2011
2. NYS Cancer Registry. *Cancer Incidence and Mortality for New York State, 2005-2009.* Retrieved September 2012 from http://www.health.ny.gov/statistics/cancer/registry/vol3/v3nys.htm
3. American Cancer Society. *Cancer Facts and Figures 2011*. Atlanta, GA: American Cancer Society, 2011.
4. NYS Behavioral Risk Factor Surveillance System, 2009 -2011.
5. CDC, National Immunization Survey, Teens, 2011.

Foreword

1. National Cancer Institute. *SEER Cancer Statistics Review, 1975-2008*. Retrieved April 2011 from http://seer.cancer.gov/csr/1975_2008/

Burden of Cancer in New York State:

1. NYS Cancer Registry. *Cancer Incidence and Mortality for New York State, 2005-2009.* Retrieved September 2012 from http://www.health.ny.gov/statistics/cancer/registry/vol3/v3nys.htm
2. National Cancer Institute. *SEER Cancer Statistics Review, 1975-2008*. Retrieved April 2011 from http://seer.cancer.gov/csr/1975_2008/
3. Smith MA et al (2010). Outcomes for Children and Adolescents with Cancer: Challenges for the Twenty-First Century. *Journal of Clinical Oncology*, 28:2625-2634.

Cancer in NYS:

1. National Cancer Institute. *Glossary of Statistical Terms.* Retrieved September 2011 from http://seer.cancer.gov/cgi-bin/glossary/glossary.pl
2. National Cancer Institute. *State Cancer Profiles*. Retrieved April 2011 from http://statecancerprofiles.cancer.gov/cgi-bin/quickprofiles/profile.pl?36&001
3. NYS Cancer Registry. *Cancer Incidence and Mortality, 2004-2008.* Retrieved September 2011 from http://www.nyhealth.gov/statistics/cancer/registry/vol1/v1rnys.htm
4. NYS Cancer Registry. *Cancer Prevalence by Cancer Site and Gender.* Retrieved April 2011 from http://www.nyhealth.gov/statistics/cancer/registry/table8/table8nys.htm

Cancer-Related Health Disparities in NYS:

1. National Cancer Institute. *Cancer Health Disparities.* Retrieved October 2011 from http://www.cancer.gov/cancertopics/factsheet/disparities/cancer-health-disparities
2. NYS Cancer Registry. *Cancer Statistics.* Retrieved April 2011 from http://www.nyhealth.gov/statistics/cancer/registry/
3. National Cancer Institute. *State Cancer Profiles*. Retrieved April 2011 from http://statecancerprofiles.cancer.gov/cgi-bin/quickprofiles/profile.pl?36&001
4. Healthy People 2020. *Health Disparities.* Retrieved April 2011 from http://www.healthypeople.gov/2020/about/DisparitiesAbout.aspx

NYS Demographics:

1. U.S. Census Bureau. *Profile of General Population and Housing Characteristics, 2010, NYS*. Retrieved April 2011 from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table
2. U.S. Census Bureau. State Quick Facts: New York State. Retrieved January 2012 from http://quickfacts.census.gov/qfd/states/36000.html
3. U.S. Census 2010. *Profile of General Population and Housing Characteristics: 2010*. Retrieved April 2011 from http://2010.census.gov/news/releases/operations/cb11-cn137.html
4. Behavioral Risk Factor Surveillance System, 2010. Available at http://www.cdc.gov/brfss/index.htm
5. Agency for Health Research and Quality. *State Dashboard.* Retrieved April 2011 from http://statesnapshots.ahrq.gov/snaps10/factor_metrics.jsp?menuId=62&state=NY&region=0

Tobacco:

1. http://www.health.state.ny.us/statistics/cancer/registry/abouts/lung.htm
2. Centers for Disease Control and Prevention (2011). State-specific Trends in Lung Cancer Incidence and Smoking – United States, 1999-2008. MMWR 60(36); 1243-1247
3. http://www.health.state.ny.us/prevention/tobacco_control/

Physical Activity and Nutrition

1. National Cancer Institute. *Obesity and Cancer Risk*. Retrieved 2012 from http://www.cancer.gov/cancertopics/factsheet/Risk/obesity
2. Kushi LH et al (2012). American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention. CA Cancer J Clin 2012;62:30–67.
3. Vainio H, Bianchini F. *IARC handbooks of cancer prevention. Volume 6: Weight control and physical activity*. Lyon, France: IARC Press, 2002.
4. New York State Department of Health http://www.health.ny.gov/prevention/obesity/
5. http://www.surgeongeneral.gov/topics/obesity/
6. http://www.surgeongeneral.gov/topics/breastfeeding/index.html
7. Palmer JR et al (2011). Parity and Lactation in Relation to Estrogen Receptor Negative Breast Cancer in African American Women. *Cancer Epidemiol Biomarkers Prev,* 20:1883-1891.

Environmental exposure

1. New York State Department of Health http://www.health.state.ny.us/press/releases/2010/2010-09-03_image_gently_campaign.htm

UV light exposure

1. Centers for Disease Control and Prevention http://www.cdc.gov/cancer/skin/basic_info /
2. Guy GP Jr, Tai E, Richardson LC. Use of indoor tanning devices by high school students in the United States, 2009. Prev Chronic Dis 2011;8(5):A116. http://www.cdc.gov/pcd/issues/2011/sep/10_0261.htm. Accessed October 6, 2011.
3. New York State Department of Health http://www.health.ny.gov/statistics/diseases/cancer/skin/report/2010/

Genetics

1. New York State Department of Health. *Cancer Genetics*. Retrieved October 2011 at http://www.nyhealth.gov/diseases/cancer/genetics/
2. National Cancer Institute. *Cancer Genetics Overview*. Retrieved December 2011 at http://www.cancer.gov/cancertopics/pdq/genetics/overview/healthprofessional

Vaccines

1. New York State Department of Health http://www.nyhealth.gov/prevention/immunization/human_papillomavirus/index.htm
2. Centers for Disease Control and Prevention http://www.cdc.gov/std/HPV/STDFact-HPV.htm
3. Centers for Disease Control and Prevention (2011). National and State Vaccination Coverage among Adolescents Aged 13 through 17 Years – United States, 2010. MMWR 60(33); 1117-1123.
4. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5920a5.htm?s_cid=mm5920a5_e
5. 2008a. Disease burden from hepatitis A, B, and C in the United States. http://www.cdc.gov/hepatitis/statistics.htm (accessed October 11, 2011)
6. Centers for Disease Control and Prevention (2006). A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part II: Immunization of Adults. MMWR 55(16).
7. Chang MH. Hepatitis B virus and cancer prevention. Recent Results in Cancer Research. 2011;188::75-84.

Early Detection

1. Centers for Disease Control and Prevention http://www.cdc.gov/brfss/
2. Centers for Disease Control and Prevention http://www.cdc.gov/cancer/dcpc/prevention/screening.htm
3. National Comprehensive Cancer Network. *Clinical Practice Guidelines in Oncology: Lung Cancer Screening*. Retrieved October 2011 at http://www.nccn.org/clinical.asp

Treatment

1. New York State Department of Health. *Medicaid Cancer Treatment Program*. Retrieved September 2011 at http://www.health.ny.gov/nysdoh/bcctp/bcctp.htm
2. National Comprehensive Cancer Network. *Guidelines and Clinical Resources*. Retrieved September 2011 at http://www.nccn.org/clinical.asp
3. National Quality Forum. *Voluntary Consensus Standards for Quality of Cancer Care*. Retrieved November 2011 at http://www.qualityforum.org/Publications/2009/05/National_Voluntary_Consensus_Standards_for_Quality_of_Cancer_Care.aspx
4. National Cancer Institute. *Office of Cancer Centers*. Retrieved August 2011 at http://cancercenters.cancer.gov/cancer_centers/index.html
5. American College of Surgeons. *Commission on Cancer Program Accreditation*. Retrieved August 2011 at http://www.facs.org/cancerprogram/index.html

6. National Cancer Institute. *Cancer Clinical Trials.* Retrieved August 2011 at http://www.cancer.gov/cancertopics/factsheet/Information/clinical-trials
7. Bolen S et al (2006). Defining "Success" in Recruitment of Underrepresented Populations to Cancer Clinical Trials. *Cancer*, 106(6);1197-1204.
8. National Cancer Institute. *Resource Guide for Outreach, Education and Advocacy.* Retrieved August 2011 at http://www.cancer.gov/clinicaltrials/learningabout/outreach-education-advocacy/page2

Survivorship

1. Centers for Disease Control and Prevention http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6009a1.htm
2. New York State Department of Health http://www.nyhealth.gov/statistics/cancer/registry/table8.htm

Health Workforce

1. *Forecasting the Supply of and Demand for Oncologists: A Report to the American Society of Clinical Oncology (ASCO) from the AAMC Center for Workforce Studies*, March 2007. Retrieved August 2011 at http://www.asco.org/ASCOv2/Practice+%26+Guidelines/Workforce+Initiatives
2. *The Cancer Care Workforce in New York*, prepared for the New York State Comprehensive Cancer Control Program.