

Contributing Causes of Health Challenges

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Prevention Agenda Toward the Healthiest State Progress Report 2012

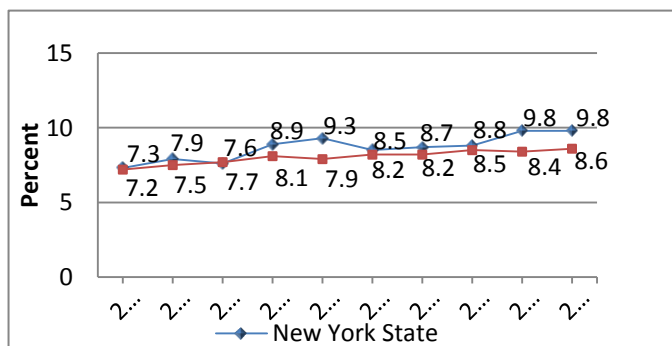
Asthma

BACKGROUND

Asthma is a chronic disease of the lungs that causes wheezing, breathlessness, chest tightness, and coughing. Asthma can greatly limit a person's quality of life. The exact cause of asthma is not known, and although asthma cannot be cured, its symptoms can be controlled. The four components of asthma care are: 1) assessment and monitoring of asthma severity and control by the primary care provider; 2) self-management education and support; 3) control of environmental factors and co-morbid conditions that affect asthma; and 4) medication management.

The number of people with asthma continues to grow in the United States (US) and in New York State (NYS). Asthma is measured by assessing the number of people who have ever been told they have asthma (prevalence of lifetime asthma) and the number who still have asthma (prevalence of current asthma). Among adult New Yorkers, the prevalence of current asthma increased from 7.3 percent in 2001 to 9.8 percent in 2010. Current asthma prevalence rates have been higher than the national average since 2004 (Figure 1). In 2010, one in every ten adults (approximately 1.5 million) and one in 14 children (315,000 children, or 7.4 percent) currently had asthma in NYS.¹

Figure 1: Prevalence of Current Asthma Among Adults (18+ Years), NYS, 2001-2010



SOURCE: Behavioral Risk Factor Surveillance System (BRFSS)

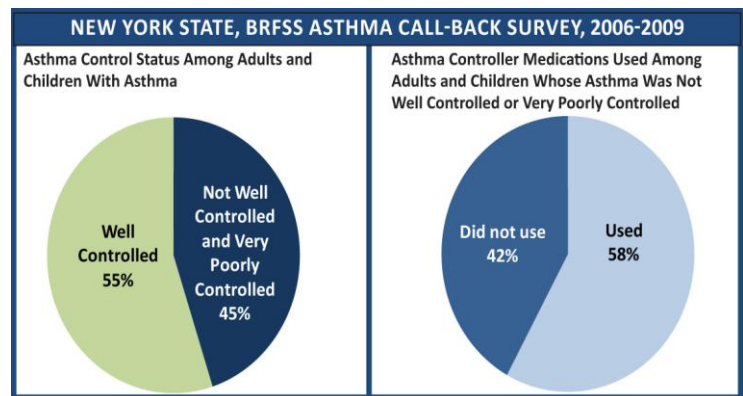
The economic costs of asthma are significant. In 2009, the total annual cost of asthma

hospitalizations in NYS was estimated to be \$652 million.² Asthma morbidity, health care costs, lost productivity and mortality continue to pose a high burden in NYS.

BURDEN and DATA TRENDS

Forty-five percent of New Yorkers with asthma had asthma classified as not well controlled or very poorly controlled. Among these New Yorkers, 42 percent did not use asthma controller medications (Figure 2).

Figure 2:



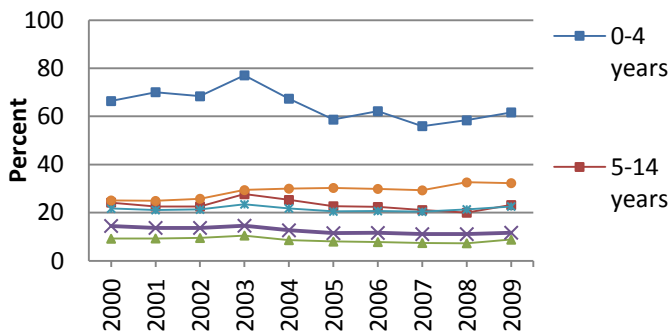
SOURCE: BRFSS Asthma Call-Back Survey

Fifty-five percent of New Yorkers with asthma had never been advised by a health professional to modify their home, school or work environment to improve their asthma. Additionally, only 29 percent of New Yorkers with asthma reported having an asthma self-management plan to help control their asthma.³

Poor asthma control greatly affects overall quality of life and productivity, which leads to increased health care utilization.⁴⁻⁶ For instance, during 2006-2009, NYS children missed more than 1.9 million days of day care, pre-school or school due to asthma each year. Adults with asthma reported approximately 7.6 million days within the past year when they were unable to work or carry out usual activities because of asthma.³

In addition, during 2007-2009, there were more than 162,000 emergency department (ED) visits and greater than 42,000 hospitalizations annually in NYS due to asthma.² In 2009, the asthma ED visit rate was 83.4 per 10,000 and has remained relatively stable since 2005. For 2007-2009, the annual asthma hospital discharge rate was 20.3 per 10,000 residents. For 2000-2009, the 0-4 year age group had the highest asthma hospital discharge rate compared to all other age groups in NYS. Each age group showed a downward trend over time in asthma hospitalizations with the exception of the age 65 and older age group (Figure 3).

Figure 3: Asthma Hospital Discharge Rate per 10,000 Residents by Age Group and Year, NYS, 2000-2009



SOURCE: NYS Statewide Planning and Research Cooperative System

During 2007-2009, there was an annual average of 236 deaths due to asthma in NYS, which is an age-adjusted asthma mortality rate of 11.2 deaths per million residents.⁷ During the past ten years, the NYS asthma mortality rate decreased 33 percent from 17.9 per million residents in 2000 to 12.0 per million residents in 2009. Approximately 40 percent of all asthma-related deaths in NYS occur in individuals 65 years and older.

Contaminants in indoor or outdoor air related to asthma include environmental tobacco smoke; allergens produced by pets, dust mites, rodents and cockroaches; irritant chemicals; pollen and mold allergens; damp indoor environments; nitrogen dioxide emissions from unvented natural-gas appliances; and ambient air pollutants, including ozone, sulfur dioxide and fine particles. Exposure to these contaminants can trigger allergic reactions or

cause respiratory irritation that exacerbates symptoms in those with asthma. Some of these factors, including indoor environmental tobacco smoke and allergens from house dust mites, cats, dogs and cockroaches, have also been associated with development or onset of asthma.⁸

More than 400 substances have been reported in medical literature to cause work-related asthma.⁹ Development of work-related asthma is associated with antigens (e.g., latex), sensitizing chemicals (e.g., gluteraldehyde, isocyanates) and chemicals that are respiratory irritants. The most common exposures reported to the NYS Work-related Asthma Surveillance Program were dust, poor indoor air quality and solvents.¹⁰

The NYSDOH collects information about asthma triggers, reservoirs for asthma triggers, and behaviors or practices that may promote or reduce common asthma triggers. From 2006-2008, most people with active asthma in NYS (65.1 percent), reported using gas for cooking; seeing pests such as cockroaches, mice or rats inside their homes (19.5 percent); having had indoor pets with fur or feathers (55.4 percent), seeing or smelling mold in their homes (13.3 percent), and smoking in their homes in the past week (20.7 percent).³

Table 1: Asthma Emergency Department Visit Rate per 10,000 Residents by Age Group, NYS (2005-2009), US (2005-2007), and Healthy People 2020 Objectives

Age Group	New York		United States	Healthy People
	2005-2007	2007-2009	2005-2007	2020
0-4	215.5	218.3	132.7	95.5
5-64	80.1	81.6	56.4	49.1
65+	31.4	31.4	21.0	13.2

SOURCE: NYS Statewide Planning and Research Cooperative System

Table 2: Asthma Hospital Discharge Rate per 10,000 Residents by Age Group, NYS (2001-2009), US(2007), and Healthy People 2020 Objectives

Age Group	New York				United States	Healthy People
	2001-2003	2003-2005	2005-2007	2007-2009	2007	2020
0-4	71.5	67.2	59.1	58.8	41.4	18.1
0-17	34.8	34.4	29.7	29.4	24.8*	n/a
5-64	17.3	17.0	15.5	15.5	11.1	8.6
65+	26.7	30.0	31.2	31.2	25.3	20.3

*This rate is for children under 15 years of age.

SOURCE: NYS Statewide Planning and Research Cooperative System

DISPARITIES

Age

Among children, asthma is the most prevalent and fastest-growing disease. Specifically, infants and children up to four years of age have the highest asthma ED visits (218.4 per 10,000 for 2007-2009) and hospital discharge (58.8 per 10,000 for 2007-2009) rates in NYS. Also, asthma is one of the leading causes of hospitalizations in the State, especially for ages of infancy to 14 years.²

Gender

The prevalence of current asthma is higher for females than males. In 2010, the prevalence of current asthma in NYS women (11.7 percent) was significantly higher than in men (6.6 percent).

Current asthma prevalence was 11.4 percent for males and 10.2 percent for females in 2010.¹

Education

In 2010, current asthma prevalence among adults who had not graduated from high school (13.8 percent), or had some college education (10.3 percent), was significantly higher than adults who had graduated from college (7.4 percent). The difference in current asthma prevalence between adults who graduated from high school (9.2 percent) and those who did not (13.8 percent) was also statistically significant.¹

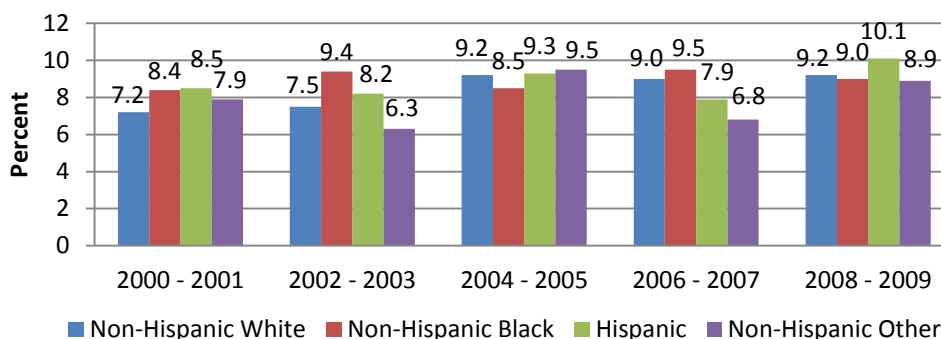
Income

For the past ten years, current asthma prevalence was inversely proportional to annual household income. In 2008-2009, current asthma prevalence was highest for adults with annual household income levels less than \$15,000 (16.9 percent). Adults in households with incomes of \$75,000 or more had the lowest prevalence (6.8 percent).¹² Similarly, for 2006-2009, NYS children from households with annual incomes less than \$25,000 had higher prevalence of current asthma compared to children from families with annual household incomes of \$25,000 or more.³

Race and Ethnicity

For 2000-2009, the prevalence rates for asthma varied by race and ethnicity. Current asthma prevalence increased slightly over the past decade for White non-Hispanics, but fluctuated for Black non-Hispanics and Hispanic adults (Figure 4).¹¹

Figure 4: Prevalence of Current Asthma Among Adults (18+ Years) by Race and Ethnicity, NYS, 2000-2009



SOURCE: Behavioral Risk Factor Surveillance System (BRFSS)

The prevalence of current asthma was slightly lower in both Black non-Hispanic and White non-Hispanic adult New Yorkers in 2008-2009 at 9.0 percent and 9.2 percent, respectively, compared to Hispanic residents (10.1 percent). The 2006-2009 prevalence of current asthma was higher in Black non-Hispanic children (15.4 percent) compared to White non-Hispanic (8.8 percent) and Hispanic (11.1 percent) children.³

For 2007-2009, crude and age-adjusted asthma ED visit rates for Black non-Hispanic (207.2 per 10,000; 204.8 per 10,000) and Hispanic (121.0 per 10,000; 116.8 per 10,000) NYS residents were higher than the rates for White non-Hispanic residents (30.3 per 10,000; 32.9 per 10,000)² (Table 3).

Table 3: Crude and Age-Adjusted* Asthma Emergency Department Visit Rate per 10,000 Residents by Race and Ethnicity, NYS, 2007-2009

		Crude	Age-adjusted*
Race and Ethnicity	Non-Hispanic White	30.3	32.9
	Non-Hispanic Black	207.2	204.8
	Non-Hispanic Other	64.2	66.8
	Hispanic	121.0	116.8
Total	New York State	83.4	86.7

*Adjusted rates are age-adjusted to the 2000 US population.
 SOURCE: NYS Statewide Planning and Research Cooperative System

For 2007-2009, crude and age-adjusted asthma hospital discharge rates for Black non-Hispanic (42.3 per 10,000; 43.2 per 10,000) and Hispanic (38.9 per 10,000; 42.8 per 10,000) NY residents were almost five times higher than White non-Hispanic residents (9.2 per 10,000; 8.9 per 10,000)² (Table 4).

Additionally, during 2007-2009, Black non-Hispanic (25.4 per million) and Hispanic (22.5 per million) New Yorkers had much higher age-adjusted asthma mortality rates compared to White non-Hispanic residents (6.5 per million).⁷

Table 4: Crude and Age-Adjusted* Asthma Hospital Discharge Rate per 10,000 Residents by Race and Ethnicity, NYS, 2007-2009

		Crude	Age-adjusted*
Race and Ethnicity	Non-Hispanic White	9.2	8.9
	Non-Hispanic Black	42.3	43.2
	Non-Hispanic Other	17.5	19.5
	Hispanic	38.9	42.8
Total	New York State	20.3	20.4

*Adjusted rates are age-adjusted to the 2000 US population.
 SOURCE: NYS Statewide Planning and Research Cooperative System

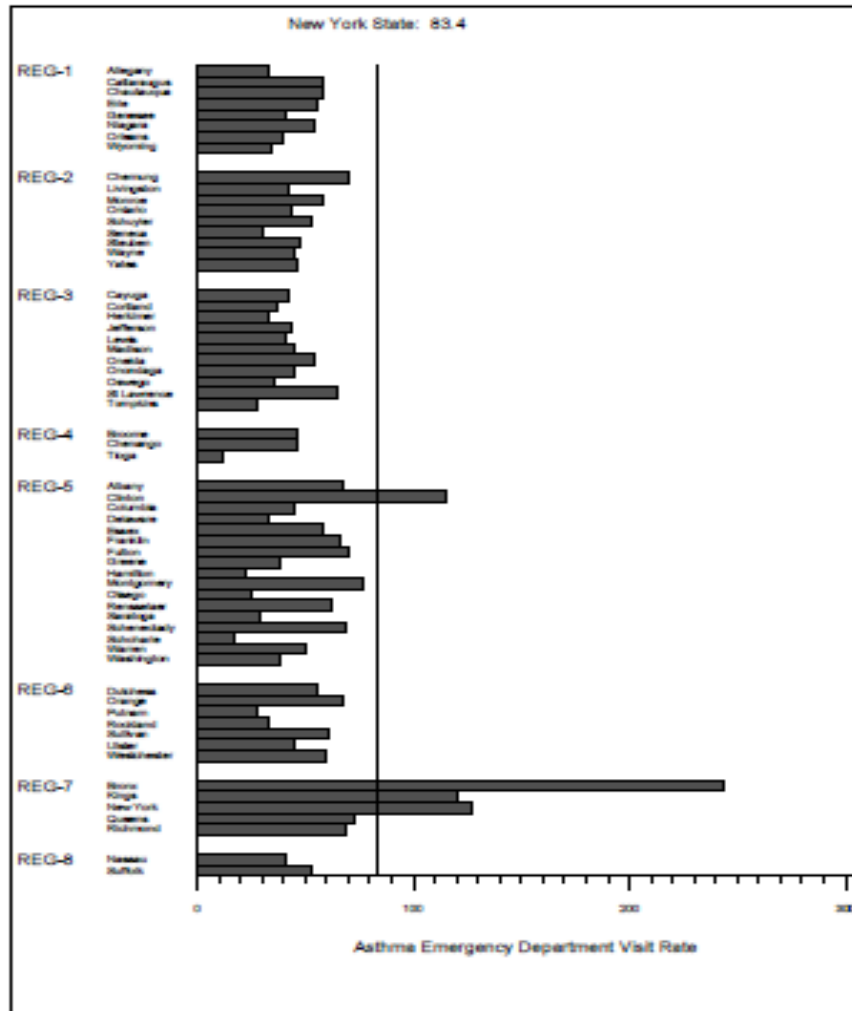
Region

While current asthma prevalence for NYS children is not available at the county level, adult asthma prevalence rates at the local level were generated from the 2008-2009 Expanded Behavioral Risk Factor Surveillance System (EBRFSS).¹³ The prevalence of current asthma in NYS adults (aged 18 years and older) was 9.6 percent. However, prevalence ranged from seven percent in Dutchess and Rockland counties, to about 16 percent in Livingston, Niagara and Clinton counties.

Adults who lived outside New York City (NYC) had a higher current asthma prevalence rate (9.7 percent) compared to adult NYC residents (8.4 percent) in 2008-2009.⁹ However, the reverse was true for children – those in NYC had higher current asthma prevalence (11.3 percent) in 2006-2009 compared to children in the rest of the State (10.6 percent).³

NYC residents had crude and age-adjusted asthma ED visit rates (126.4 per 10,000; 129.3 per 10,000) in 2007-2009 that were approximately 2.5 times higher than residents in the rest of the State (51.1 per 10,000; 54.1 per 10,000). Bronx, New York and Kings counties had the highest ED visit rates² (Figure 5).

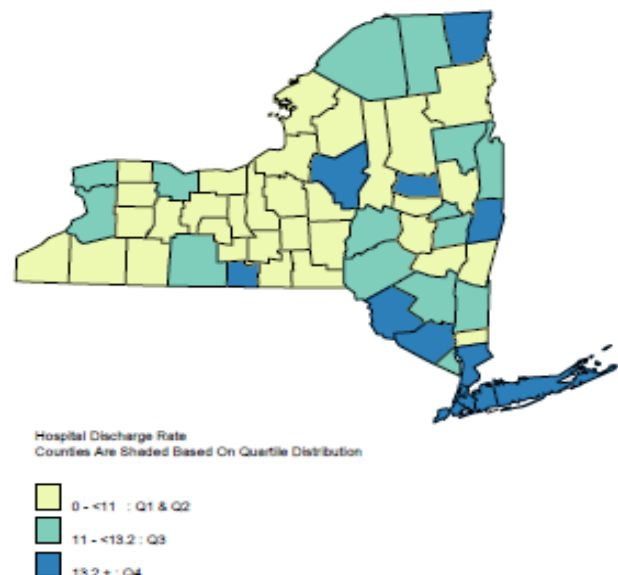
Figure 5: Asthma Emergency Department Visit Rate per 10,000 by County, NYS, 2007-2009



SOURCE: NYS Statewide Planning and Research Cooperative System

NYC residents, with crude and age-adjusted asthma, had hospital discharge rates of 31.0 per 10,000 and 31.2 per 10,000, in 2007 and 2009, respectively. They were more than 2.5 times higher than residents in the rest of the State (12.3 per 10,000; 12.3 per 10,000) (Figure 6).² In addition, NYC’s age-adjusted asthma mortality rate of 16.7 per million for 2007-2009, was more than double the rate for the rest of the State (7.4 per million).⁷

Figure 6: Asthma Hospital Discharge Rate per 10,000 by County, NYS, 2007 and 2009



SOURCE: NYS Statewide Planning and Research Cooperative System

CHALLENGES

Improvements in asthma care processes and health outcomes have been documented in performance monitoring and evaluation of system change interventions implemented in areas across the State. While general progress has occurred, disparities in asthma care and outcomes persist by race, ethnicity and income. Low-income minority populations have poorer asthma control. NYS Medicaid recipients share a disproportionate

asthma burden. Black non-Hispanics and Hispanics enrolled in Medicaid managed care plans are hospitalized for asthma at rates more than two times higher than White non-Hispanic enrollees and are less likely to have follow-up outpatient visits within 30 days of discharge. More efforts, resources, and evidence are needed to reach high-risk groups and to close the gaps in care and outcomes.

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Breastfeeding

BACKGROUND

The benefits of breastfeeding for infants, mothers, employers and society have been well documented. Infants who breastfeed are less likely to develop ear, respiratory and gastrointestinal infections, and are at lower risk for childhood cancers, asthma and Sudden Infant Death Syndrome (SIDS).¹ Breastfeeding benefits mothers by decreasing risks of breast and ovarian cancers, osteoporosis, and postpartum depression, while increasing the likelihood of returning to pre-pregnancy weight.¹ Employers who invest in breastfeeding support programs for their employees see increased productivity and employee loyalty reduced absenteeism, and decreased health care costs. The economic benefits of breastfeeding accrue to society as a whole. If 90 percent of infants were exclusively breastfed for six months, the US health care system would save an estimated \$13 billion annually.²

Breastfeeding, especially exclusive breastfeeding, protects against childhood obesity. With each month an infant is breastfed, the risk of becoming an obese child is reduced.³

Nationally, 75 percent of women initiate breastfeeding of their newborn infants. However, by two days of life, 25 percent of breastfed infants are receiving formula.⁴ In NYS's approximately 260,000 annual births, 78 percent of women initiate breastfeeding, but far too many New York infants receive formula supplementation. NYS ranks among the highest of states for formula supplementation within the first two days of life (Figure 2).⁵ Providing in-hospital formula supplementation negatively impacts breastfeeding exclusivity and duration by changing the infant's suck-reflex and the acidity of the infant's stomach, and diminishes mothers' milk production.⁶ NYS's exclusive breastfeeding rates at three and six months are below the national average.⁷

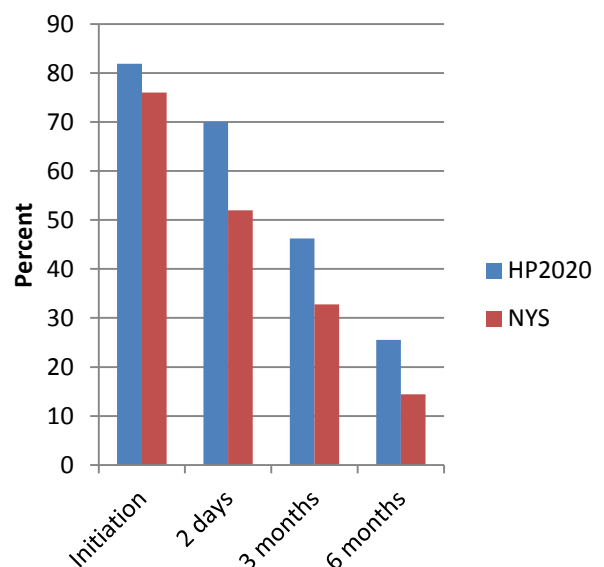
Although NYS exceeded the Healthy People 2010 goal for breastfeeding initiation, a significant proportion of infants are not exclusively

breastfeeding upon hospital discharge, negatively affecting exclusive breastfeeding rates at three and six months.

NYS has enacted policies supporting breastfeeding. In 1994, NY Civil Rights Law § 79-e granted women the right to breastfeed in public. The *NYS Nursing Mothers in the Workplace Act* (NY Labor Law § 206-c), passed in 2007, made NYS one of 14 states with legislation protecting the rights of women who wish to express breast milk in the workplace. In 2010, the *NYS Breastfeeding Mothers Bill of Rights* (BMBR) was passed (NY Public Health Law § 2505-a). This law, which must be posted in all hospitals' maternity care areas, requires hospitals to include their breastfeeding rates in their maternity information brochures. These rates are available publicly on the NYSDOH public website.⁸

DATA TRENDS

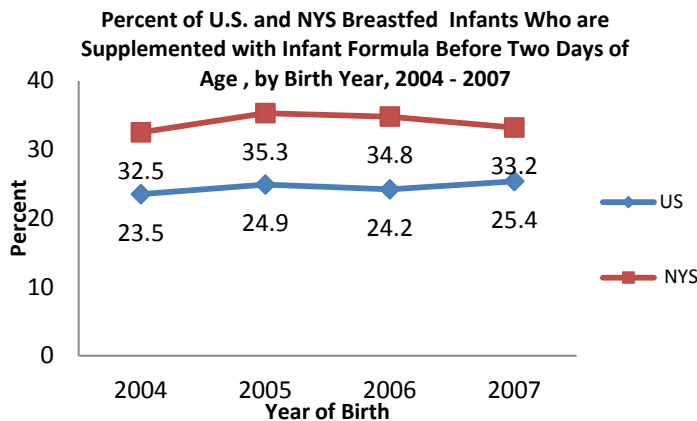
Figure 1: Percentage of NYS Women Reporting Exclusive Breastfeeding of their Infants Compared with Healthy People 2020 Goals



SOURCES: NYSDOH Bureau of Biometrics and Statistics, 2009; any and exclusive breast milk at 2 days (unpublished); National Immunization Survey 2011, exclusive breast milk 3 and 6 months. US Department of Health and Human Services, CDC.

NYS has taken a lead role in promoting and supporting breastfeeding in public, at work and in the hospital. Most women (80 percent) initiate breastfeeding, which closely approaches the Healthy People 2020 (HP 2020) goal (Figure 1). However, NYS is far below the HP 2020 goals for exclusive breastfeeding at two days, three months and six months.

Figure 2:



SOURCE: National Immunization Survey, US Department of Health and Human Services, CDC.

Table 1: Healthy People 2020 Goals and NYS Prevalence

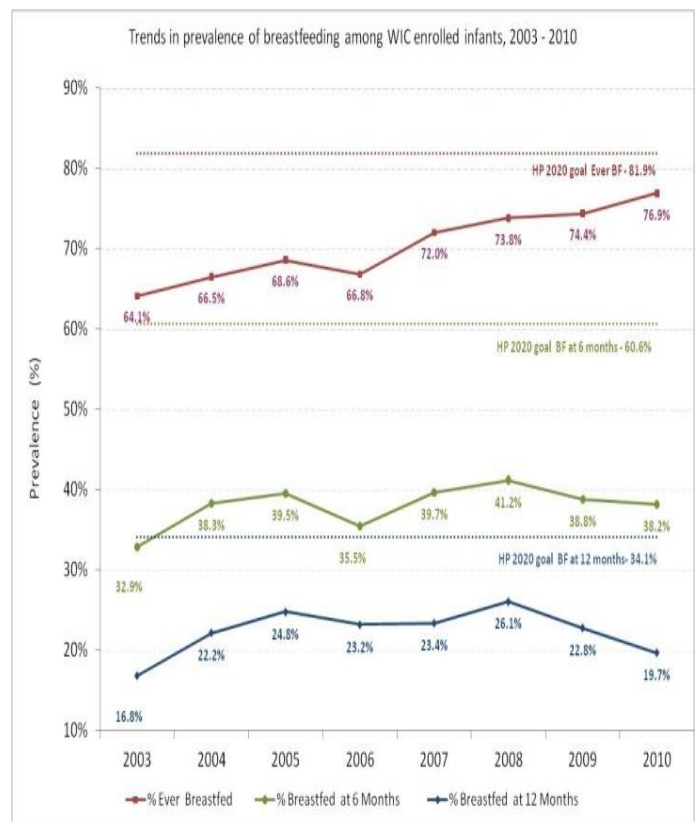
Healthy People 2020 Goal	Baseline (%)	Goal (%)	NYS ** (%)
Increase the number of infants fed breast-milk:			
• Ever	74.0	81.9	78.2
• At 6 months	43.5	60.6	47.7
• At 1 year	22.7	34.1	27.7
• Exclusively at 3 months	33.6	46.2	32.7
• Exclusively at 6 months	14.1	25.5	13.7
Reduce the proportion of breastfed newborns who receive formula supplementation within the first two days of life	24.2	14.2	33.2
Increase the proportion of live births occurring in hospitals that provide recommended care for lactating mothers and their babies	2.9	8.1	4.0
Increase the proportion of employers that have worksite lactation support programs	25	38	NA

**NYS data retrieved from the Breastfeeding Report Card, 2011. US data retrieved on January 27, 2012 from www.cdc.gov/breastfeeding/data/reportcard2.htm

DISPARITIES

There are wide disparities among women in their breastfeeding practices. Breastfeeding initiation, exclusivity and duration are lower among younger, less educated, low-income women. The Black non-Hispanics population and women enrolled in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) also have lower breastfeeding rates. Since 2003, breastfeeding initiation rates for women participating in WIC have increased. However, breastfeeding rates at six and 12 months remain essentially unchanged and well below the HP 2020 goals⁹ (Figure 3).

Figure 3:



DATA SOURCE: Pediatric Nutrition Surveillance System

NYS breastfeeding initiation and duration rates vary for WIC infants by race/ethnicity and by geographic region (Table 2). Breastfeeding initiation is highest among Hispanics and lowest among Asians. Hispanics are also more likely to continue to be breastfed for at least six months. Prevalence is highest in NYC, likely reflecting the higher proportion of Hispanic participants in that region.

Table 2: Prevalence of Breastfeeding of WIC Enrolled Infants by Race/ethnicity and Geographic Region

	BF initiation (%)	BF at 6 months (%)	BF at 12 months (%)
Race/Ethnicity:			
White	71.4	36.2	22.1
Black	76.2	35.2	15.6
Hispanic	85.0	43.1	21.4
Asian	65.4	35.9	17.8
Other	69.3	27.2	14.3
Region:			
Capital	64.7	18.5	8.7
Central	62.3	16.2	7.9
Metro	81.6	45.6	23.4
Western	64.0	19.1	9.8

DATA SOURCE: 2010 Pediatric Nutrition Surveillance Report, NYS, Tables 9c and 7E

BURDEN

Lack of breastfeeding contributes to overweight and obesity. Infants who are not breastfed during their first nine months have a nearly 50 percent greater risk of becoming overweight when compared with children who are breastfed.³ In NYS in 2010, 14.5 percent of WIC-enrolled children aged 2-4 years were obese.

Suboptimal breastfeeding results in substantial costs and preventable infant deaths. During the first year of life, formula-fed infants cost the health care system more than infants who are exclusively breastfed.¹⁰ If 90 percent of infants were exclusively fed breast milk for six months, the US would save \$13 billion annually and prevent more than 900 deaths.¹¹ Furthermore, if the HP2010 goal for exclusive breastfeeding at six months was met, 142 deaths would be prevented and \$2.2 billion in health care costs would be saved.

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Cancer

BACKGROUND

Cancer is the second leading overall cause of death in NYS. On average, each year 103,000 New Yorkers are diagnosed with cancer. Lung, colorectal, breast and prostate cancers account for 51 percent of all new cancer cases.¹

Approximately 34,000 New Yorkers die from cancer each year.¹ In 2008, 26 percent of all cancer deaths were from lung cancer, 10 percent from colorectal cancer, and 8 percent from breast cancer.¹ The cancer care 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 socioeconomic groups face greater risk for specific cancers; lack access to primary care, screening services, specialists and cancer treatment centers; or lack money or health insurance to pay for care. About one-third of cancer deaths can be attributed to the use of tobacco, while another one-third can be attributed to unhealthy diets, physical inactivity and obesity.

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 guidelines vary by 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. Given the uncertain benefits of population-based screening for specific cancers (e.g., prostate cancer) in average-risk individuals, people should make informed decisions about screening with their health care providers.

BURDEN AND DISPARITIES

Cancer Incidence and Mortality for All Cancer Types

From 2004- 2008, the average cancer incidence rate for all cancer types in NYS increased by about

0.4 percent each year. Decreases in cancer-specific incidence rates were recorded for colorectal, ovarian, stomach, brain, leukemia, cervical, bladder, esophagus, lung/bronchus and female breast. Increases were seen in non-Hodgkin's lymphoma, uterine, pancreatic, oral cavity/pharynx, prostate, kidney/renal pelvis, liver/bile duct, breast (*in situ*), melanoma and thyroid cancers. The State's overall cancer mortality rate for all cancer types, on the other hand, decreased by two percent each year across all ages and races between 2003-2007. Annual mortality rates increased only for cancers of the uterus and the liver/bile duct (Figures 1 and 2).

Figure 1:

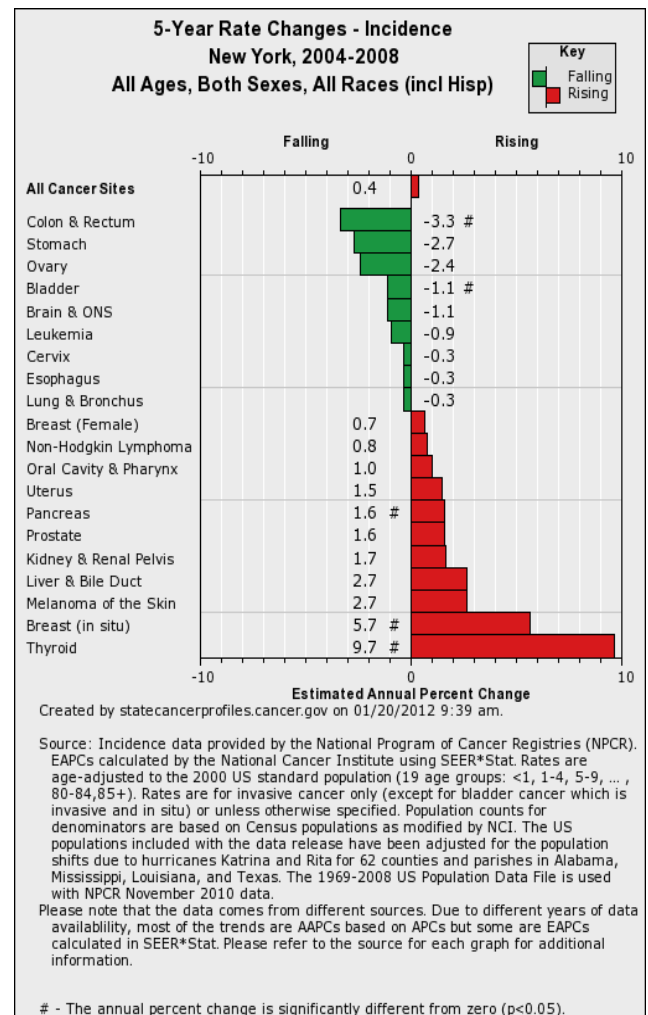
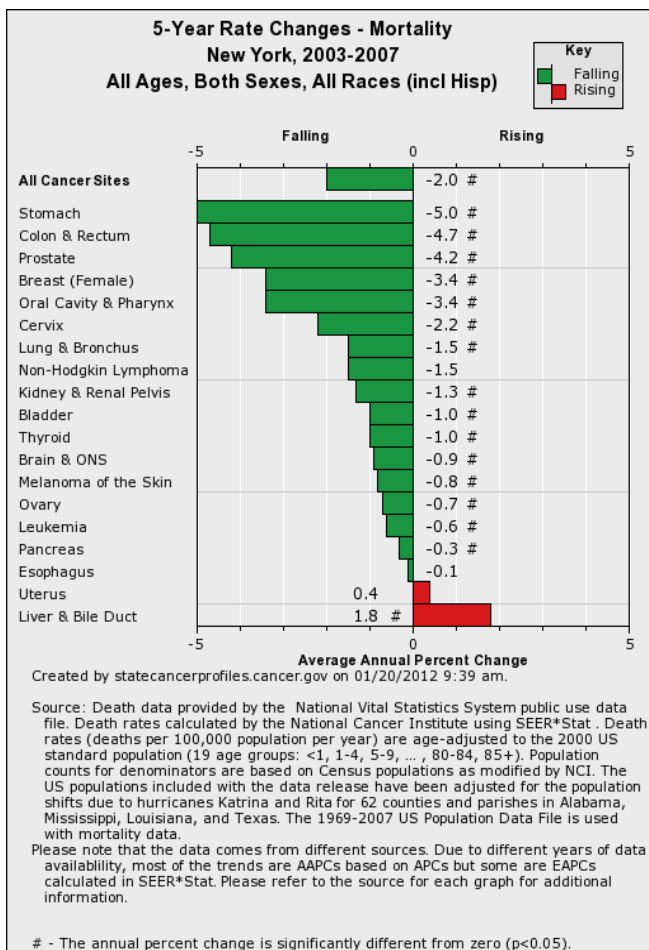


Figure 2:



BREAST CANCER

Trends in Incidence of Mortality

The annual incidence rate of breast cancer in NYS between 2004-2008 was 124.3 per 100,000 females compared to 121.1 per 100,000 females for the nation as a whole. The annual death rate for breast cancer (in NYS during 2003-2007) was 23.9 per 100,000 females compared to 24.0 per 100,000 females nationally. While breast cancer incidence has increased slightly in NYS and nationally (0.7 and 0.4 annual percentage change, respectively), mortality due to breast cancer has declined in both NYS and the US (minus 3.4 and minus 2.2 annual percentage change, respectively)¹ (Figures 1 and 2).

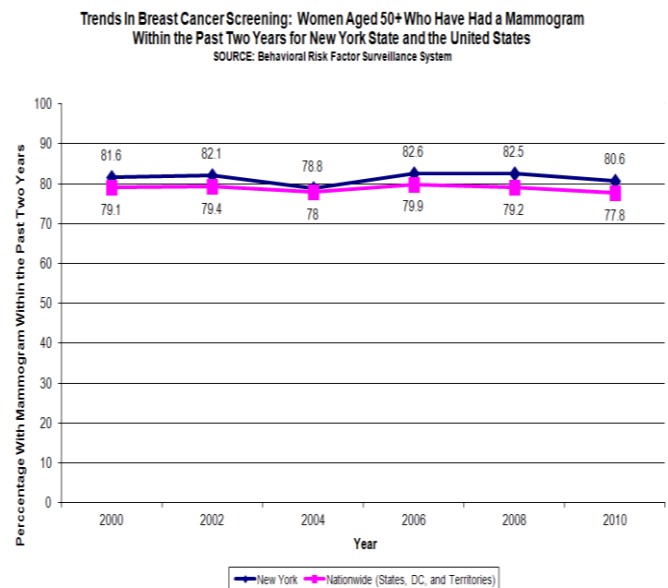
Trends in Early Stage Diagnosis

The percentage of breast cancers diagnosed at an early stage in NYS was 64.6 percent in 2008, compared to 61.3 percent nationwide. That percentage has not changed overall in NYS since 2000 (64.5 percent).

Trends in Breast Cancer Screening

Data from the NYS Behavioral Risk Factor Surveillance System (BRFSS) indicate that breast cancer screening has remained stable between 2000 and 2010. In 2010, 80.6 percent of women aged 50 years and older reported having a mammogram in the past two years, compared to 77.8 percent nationally (Figure 3).

Figure 3:



Geographic Variation

The annual incidence of breast cancer varies by county, with the highest incidence in Putnam (154.7 per 100,000 females), Seneca (146.5), Greene (146.0), Livingston (142.8) and Nassau (141.4) counties and the lowest in Queens (106.2), Bronx (104.6), Schoharie (104.1), Kings (103.0) and Chenango (97.8) counties¹ (Figure 4).

Mortality also varies by county. Among counties with a minimum of four deaths from breast cancer annually, the highest annual death rates were in Wyoming (32.0 deaths per 100,000 females), Steuben (29.7), Fulton (28.6), Washington (28.1) and Erie (28.0) counties. The counties with the lowest death rates are Clinton (17.8), Seneca (17.7), Cayuga (17.1), Franklin (16.8) and Columbia (16.1)¹ (Figure 5).

Figure 4:

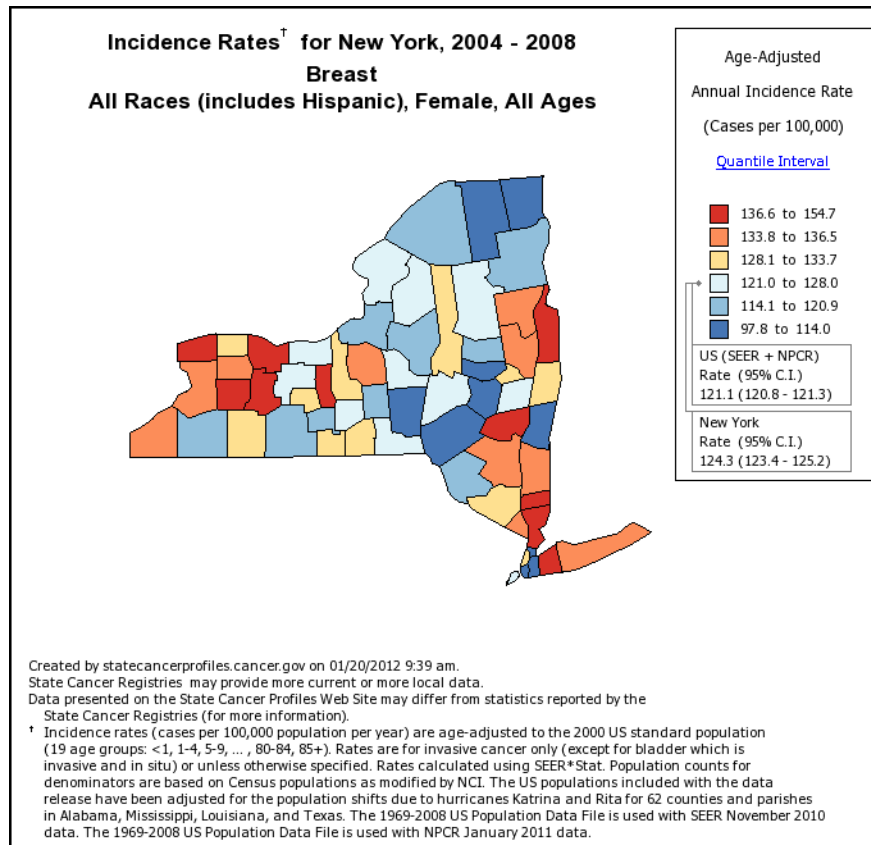
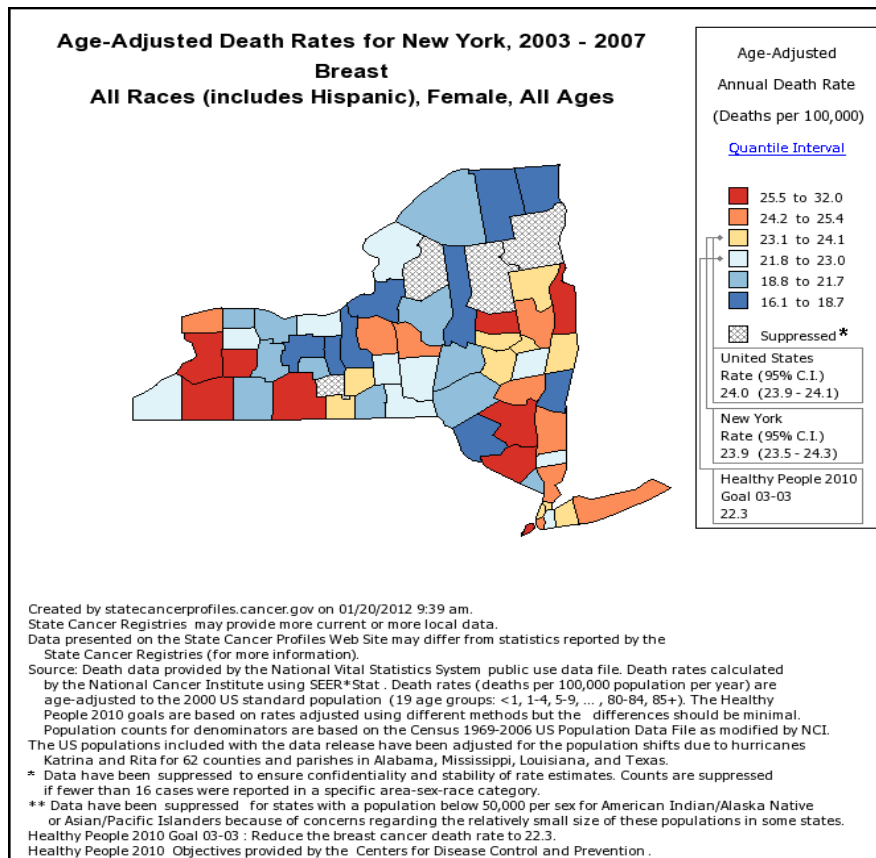


Figure5:



Women 50 or older living in NYC are slightly less likely to report having had a mammogram in the past two years (82.4 percent) than those in the rest of NYS (83.5 percent). Among counties outside NYC, those with the highest percentage of women 50 and older reporting a mammogram in the past two years were Clinton (89.2 percent), Yates (89.0 percent), Onondaga (88.4 percent), Franklin (88.2 percent) and Nassau (88.2 percent). Those with the lowest were Montgomery (75.7 percent), Wyoming (75.3 percent), Delaware (74.8 percent), Cattaraugus (74.6 percent) and Sullivan (72.7 percent).³

Age

Breast cancer incidence and mortality increase with age, with the highest annual incidence rate among women 75-79 years (435.3 per 100,000 females) and the highest mortality among women 85 and older (178.2 per 100,000 females).¹

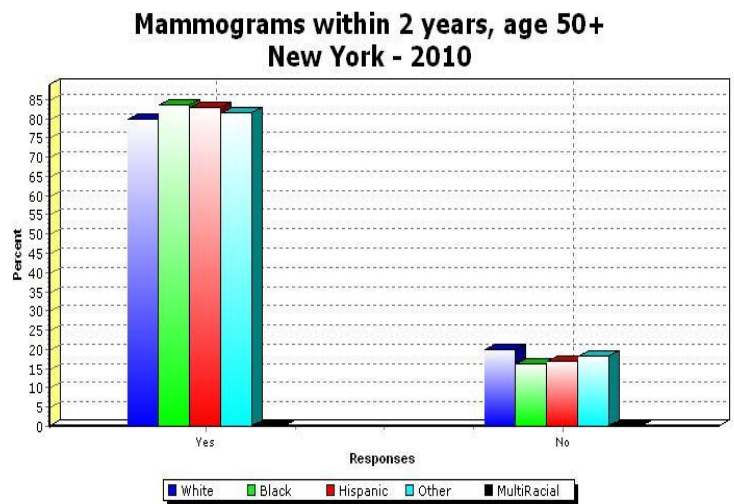
For women 40 and older, the percentage reporting a mammogram in the past two years increased with age through age 64 (71.5 percent for 40-49, 81.3 percent for 50-59 and 83.1 percent for 60-64) and then decreased (79.0 percent for 65+).³

Race and Ethnicity

In NYS, non-Hispanic White women have a higher annual incidence rate for breast cancer (129.1 per 100,000 females) compared to Black non-Hispanic women (106.7 per 100,000 females). However, White non-Hispanic women have a lower mortality rate (22.5 per 100,000 females) than Black non-Hispanic women (27.2 per 100,000 females). Hispanic women and Asian/Pacific Island non-Hispanic women have a lower incidence (88.5 and 80.7 per 100,000 females, respectively) and a lower mortality rate (16.3 and 10.6 per 100,000 females, respectively) compared to both non-Hispanic White and Black non-Hispanic women.¹

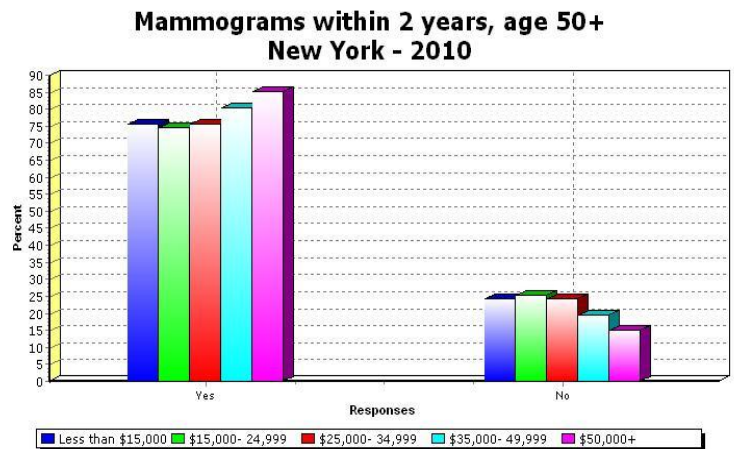
In NYS, White non-Hispanic women are less likely to report having a mammogram in the past two years (79.9 percent) than Black non-Hispanic (83.7 percent) and Hispanic (83.0 percent) women ages 50 and older³ (Figure 6).

Figure 6:



SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Figure 7:



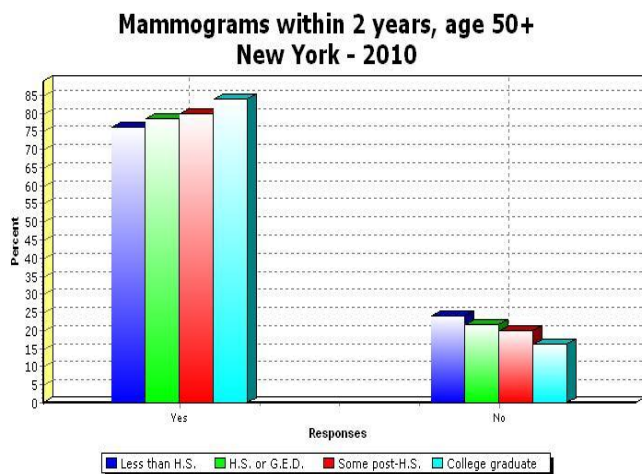
SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Income and Education

Women with lower incomes are less likely to be screened. In 2010, the percentage of women reporting a mammogram in the past two years was about 85 percent for those with annual incomes of \$50,000+ compared to about 75 percent for those with annual incomes of less than \$35,000³ (Figure 7).

Women with less education were also less likely to be screened. In 2010, the percentage of women reporting a mammogram in the past two years was about 84 percent for college graduates, but less than 79 percent for those with high school diplomas, GEDs or less³ (Figure 8).

Figure 8:

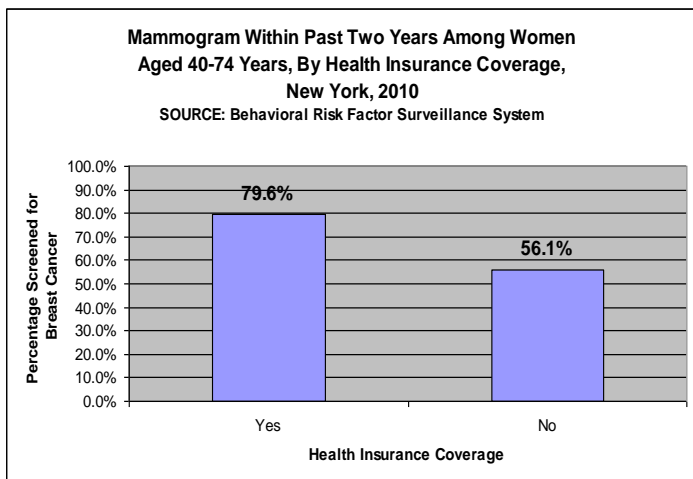


SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Health Insurance Status

Women with no health insurance coverage are less likely to be screened than those with coverage. In 2010, the percentage of women aged 40-74 years reporting a mammogram in the past two years was 79.6 percent for women with health insurance coverage and 56.1 percent for women with no health insurance coverage³ (Figure 9).

Figure 9:



SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

CERVICAL CANCER

Trends in Incidence and Mortality

The annual incidence rate of cervical cancer in NYS from 2004-2008 was 8.5 per 100,000 females compared to 8.1 per 100,000 females nationwide.

The annual death rate for cervical cancer in NYS between 2003 and 2007 was 2.5 per 100,000 females compared to 2.4 per 100,000 females for the nation.

Cervical cancer incidence has decreased slightly in the past five years in both NYS and the US (0.3 and minus 1.0 annual percent change, respectively). Mortality due to cervical cancer has also declined in both NYS and the US (minus 2.2 and minus 0.6 annual percent change, respectively), with NYS demonstrating a greater decline than the Nation¹ (Figures 1 and 2).

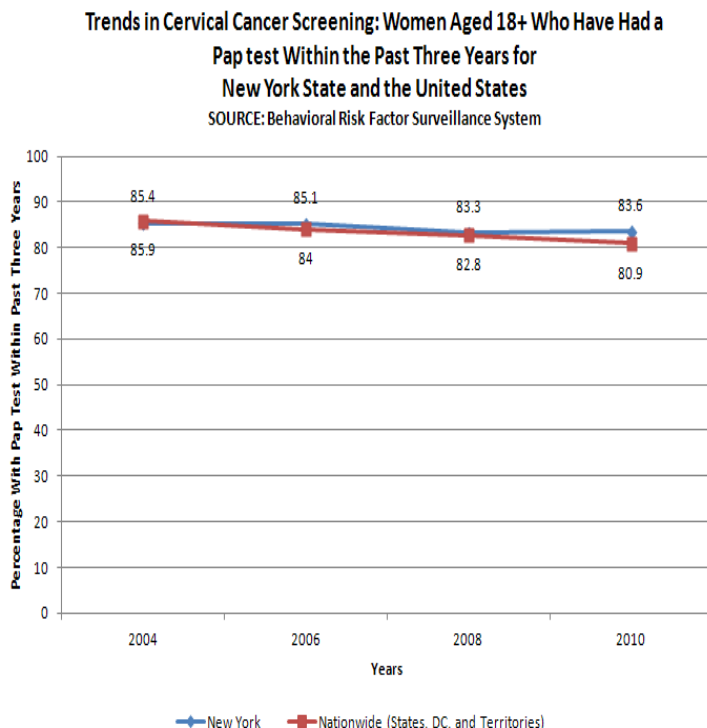
Trends in Early Stage Diagnosis

The percentage of cervical cancers diagnosed at an early stage in NYS was 46.1 percent in 2008, compared to 48.2 percent in the nation as a whole. Early stage diagnosis in NYS has decreased since the year 2000 (54.7 percent).¹

Trends in Cervical Cancer Screening

Cervical cancer screening decreased between 2004 and 2010. In 2010, 83.6 percent of NYS women 18 and older reported having a Pap test in the past three years compared to 80.9 percent nationally³ (Figure 10).

Figure 10:



Geographic Variation

The annual incidence of cervical cancer varies by county. Among counties with a minimum of four cervical cancer cases annually, the highest incidences were in Cayuga (14.7 per 100,000 females), Steuben (13.0), Tioga (12.9). Bronx (12.5) and Kings (10.9) counties; the lowest were in St. Lawrence (6.4), Albany (6.2), Erie (6.1), Monroe (6.1) and Schenectady (5.0) counties¹ (Figure 11).

Mortality also varies by county. Among counties with a minimum of four deaths due to cervical cancer annually, the highest death rates were in Oswego (5.2 per 100,000 females), Bronx (4.5), Kings (3.3), Ulster (3.2) and Orange (3.1) counties; the lowest were in Westchester (2.1), Albany (1.9), Erie (1.8), Nassau (1.6) and Monroe (1.6) counties. Many counties have three or fewer average annual

cases of or deaths from cervical cancer, so estimates of incidence and mortality are not available for a large proportion of the State¹ (Figure 12).

Women 18 and older in NYC are as likely to report a Pap test in the past three years (82.7 percent) as those living in the rest of NYS (82.6 percent). Outside NYC, counties with the highest percentage of women 18 or older reporting a Pap test in the past three years were Onondaga (89.4 percent), Niagara (87.6 percent), Albany (87.0 percent), Schenectady (86.9 percent) and Ulster (86.2 percent). Those with the lowest were Tioga (76.9 percent), Broome (75.8 percent), Schoharie (74.4 percent), Chautauqua (73.9 percent) and Wyoming (73.7 percent) counties.³

Figure 11:

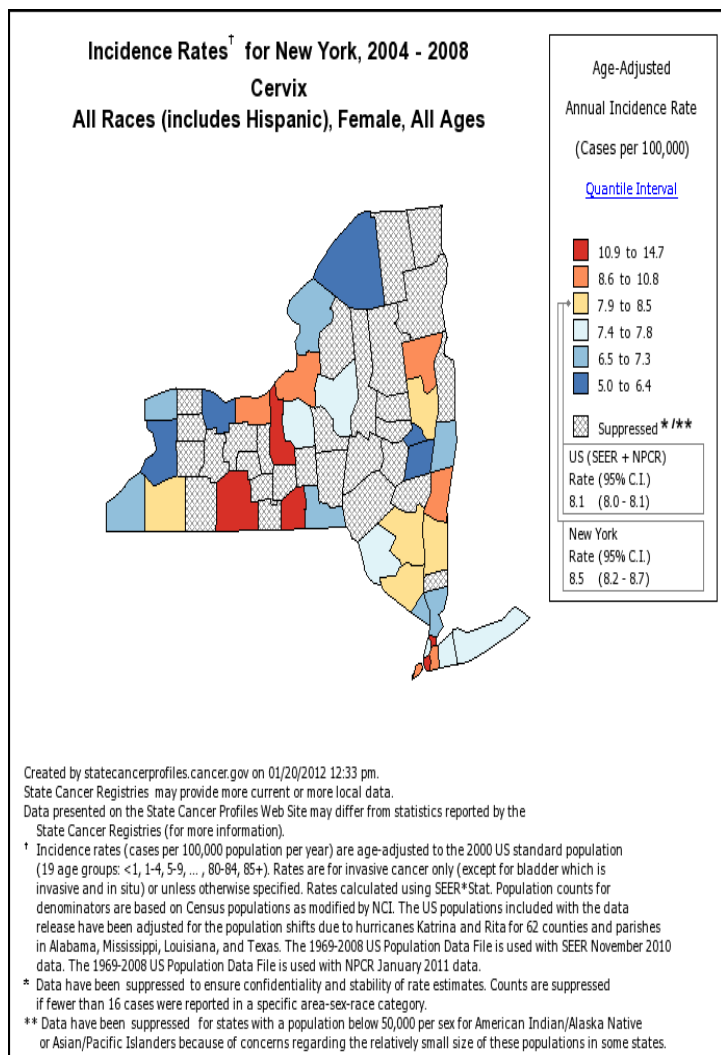
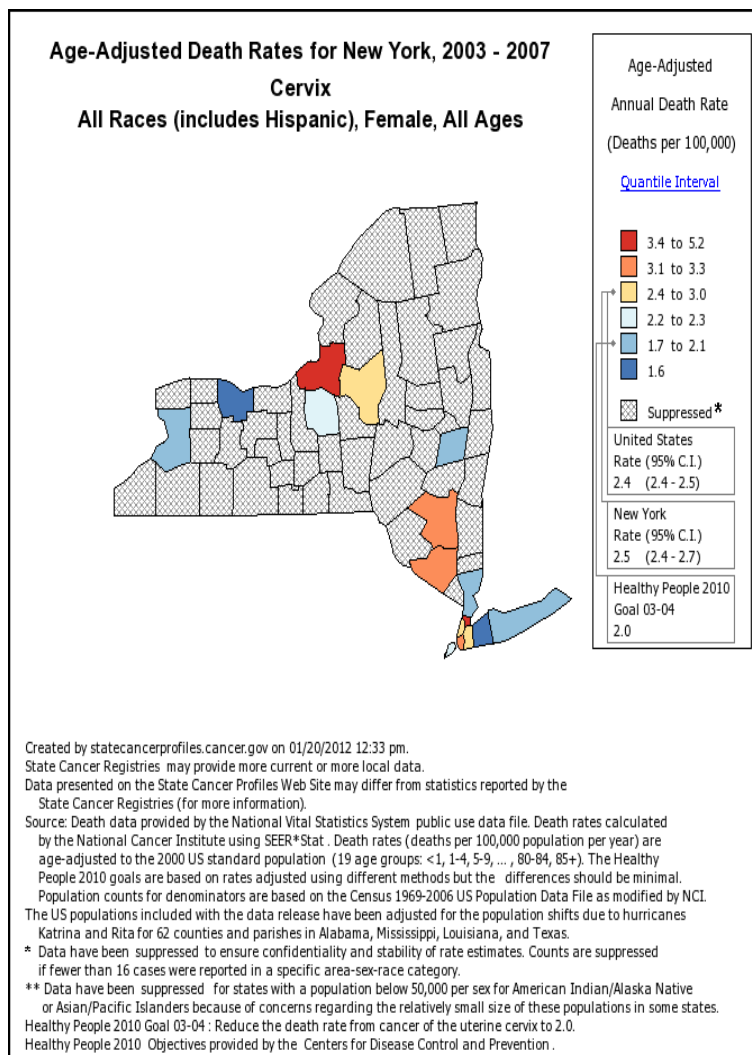


Figure 12:



Age

Cervical cancer incidence is highest among women between ages 40-70, with the highest incidence in women 65-69 years of age (17.8 per 100,000 females). Mortality due to cervical cancer increases with age, with the highest mortality in women 85 and older (8.4 per 100,000 females).¹

For women 18 and older in NYS, the percentage of women reporting a Pap test in the past three years was lowest among women 18-24 (59.2 percent) and highest among women 25-34 (91.2 percent).³

Race and Ethnicity

In NYS, Black non-Hispanic women have a higher incidence of cervical cancer (12.5 per 100,000 females) than Hispanic (11.4), Asian/Pacific Islander non-Hispanic (9.7) and White non-Hispanic women (7.5). In a similar pattern, Black non-Hispanic women have a higher mortality rate from cervical cancer (4.2 per 100,000 females) compared to Hispanic (3.1), White non-Hispanic (2.1) and Asian/Pacific Islander non-Hispanic women (1.9). The disparity in mortality between White non-Hispanic and Black non-Hispanic women has declined in recent years, but persists² (Figure 13).

In NYS, there are small differences in the percentage of women 18 and older reporting a Pap test in the past three years among White non-Hispanic (84.5 percent), Black non-Hispanic (86.3 percent) and Hispanic (85.2 percent) women.³ (Figure 14) These differences do not explain the disparities in the incidence of cervical cancer.

Figure 13:

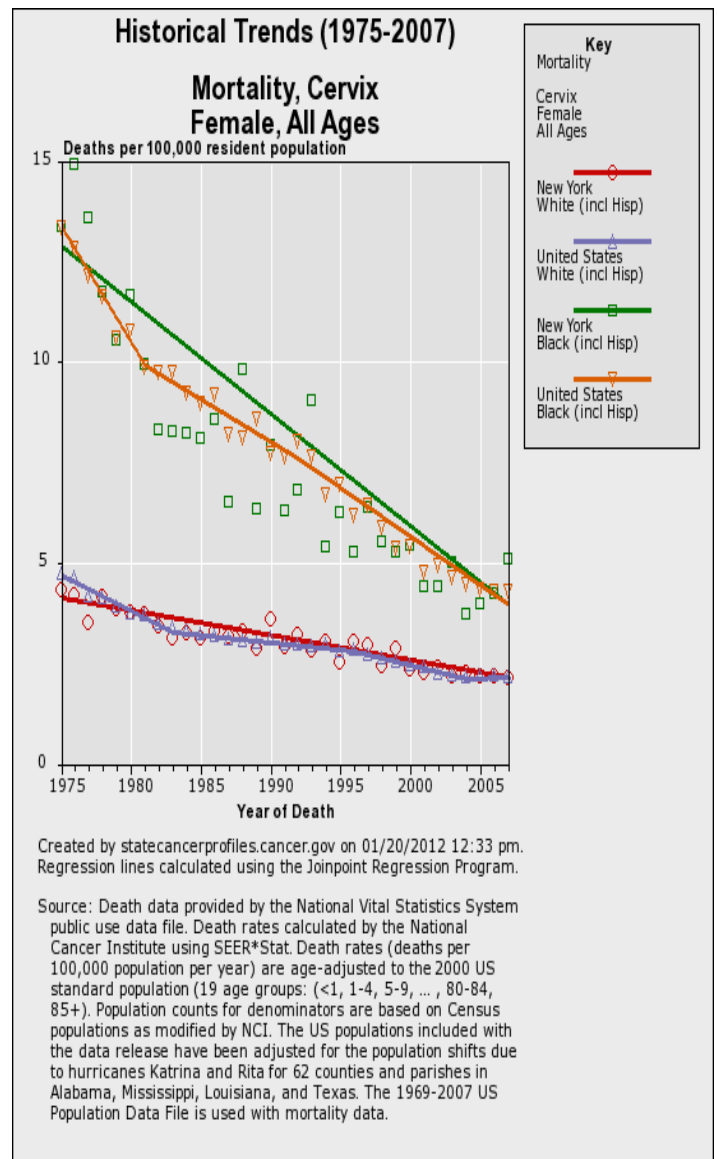
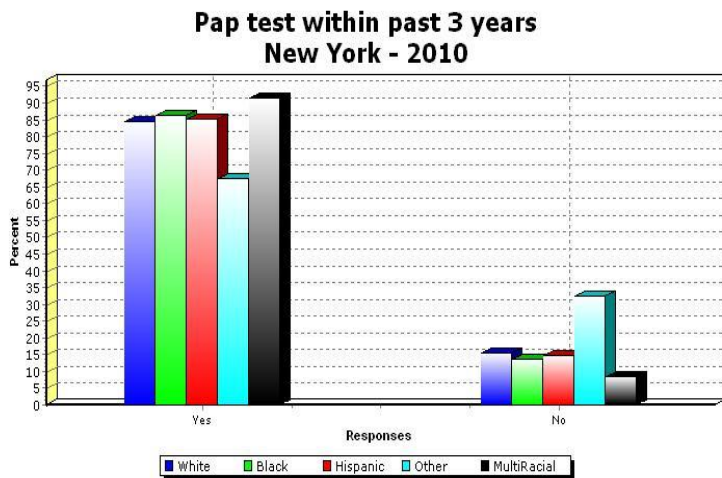


Figure 14:

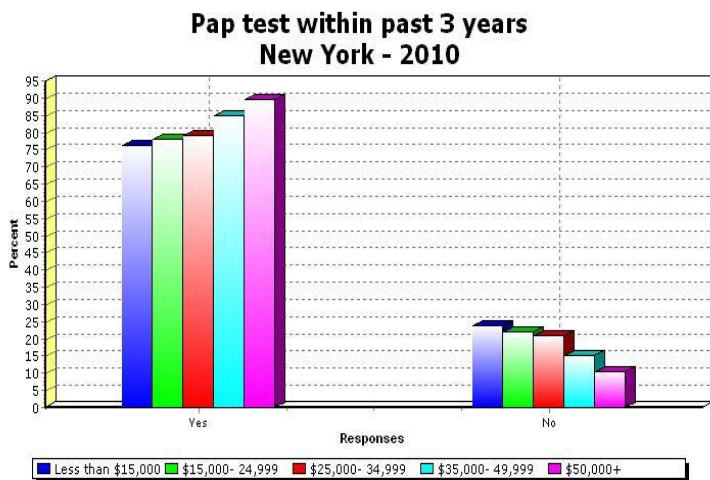


SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Income and Education

Women with lower incomes are less likely to be screened. In 2010, the percentage of women reporting a Pap test in the past three years was nearly 90 percent for women with annual incomes over \$50,000 compared to less than 80 percent for those with annual incomes of less than \$35,000³ (Figure 15).

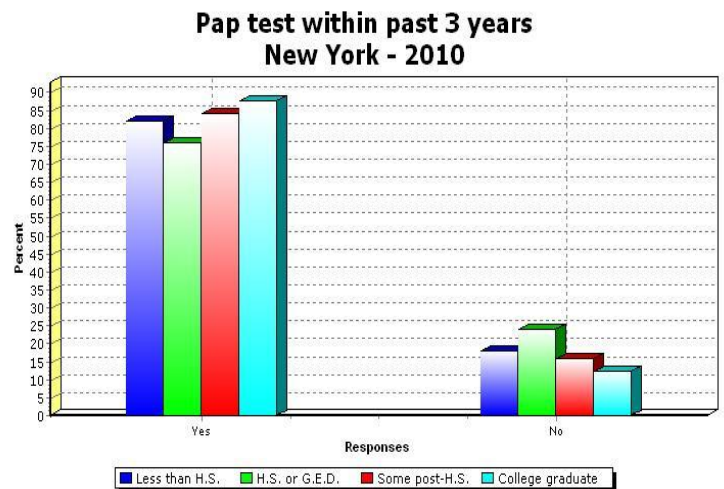
Figure 15:



SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Women with less education are also less likely to be screened than those with more education. In 2010, college graduates were more likely to report a Pap test in the past three years (88 percent) than those with some post high school education (84 percent), those with high school diplomas, GEDs (76 percent) and those with less than high school diplomas (82 percent)³ (Figure 16).

Figure 16:

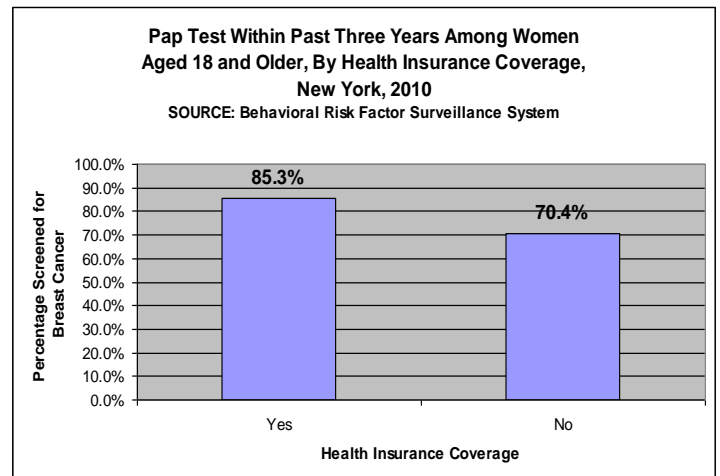


SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Health Insurance

Women with no health insurance coverage are less likely to be screened than those with health insurance coverage. In 2010, the percentage of New York women aged 18 and older reporting a Pap test in the past three years was 85.3 percent for women with health insurance coverage and 70.4 percent for women without coverage³ (Figure 17).

Figure 17:



COLORECTAL CANCER

Trends in Incidence and Mortality

The annual incidence rate of colorectal cancer in NYS between 2004 and 2008 was 48.8 per 100,000 population compared to 47.6 per 100,000 population nationally. The State's annual death rate from colorectal cancer between 2003 and 2007 was 17.4 per 100,000 population compared

to 17.6 per 100,000 population nationally. Colorectal cancer incidence has decreased in the past five years in both NYS and the US (minus 3.3 and minus 3.2 annual percent change, respectively). Mortality due to colorectal cancer has declined in both NYS and the US (minus 4.7 and minus 2.5 annual percent change, respectively), with NYS demonstrating a greater decline than the nation¹ (Figures 1 and 2).

Trends in Early Stage Diagnosis

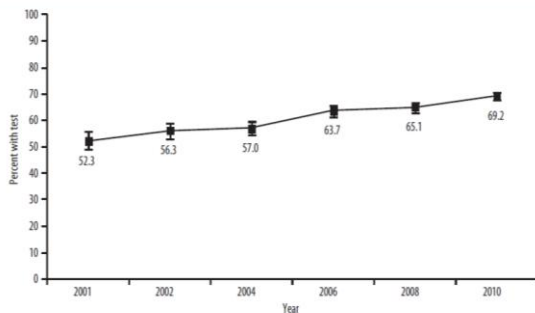
The percentage of colorectal cancers diagnosed at an early stage in NYS was 44.8 percent for men and 43.3 percent for women in 2008, compared to 40.8 percent for men and 38.9 percent for women nationwide. Early stage diagnosis has increased in NYS since the year 2000 (40.8 percent for men and 39.0 percent for women).¹

Trends in Colorectal Cancer Screening

Colorectal cancer screening rates increased markedly between 2001 and 2010. In 2010, 69.2 percent of adults aged 50-75 years NYS reported having a blood stool test in the past year or lower endoscopy (sigmoidoscopy or colonoscopy) in the past ten years, compared to 52.3 percent in 2001. The national percentage for 2010 was 65.4 percent, compared to 52.3 percent in 2002³ (Figure 18).

Figure 18:

Blood stool test in past year, OR lower endoscopy (sigmoidoscopy/colonoscopy) in past 10 years among New York State adults aged 50-75 years, by BRFSS survey year



Note: Data on blood stool testing or sigmoidoscopy/colonoscopy not collected in 2003, 2005, 2007, or 2009 New York BRFSS. Note: Error bars represent 95% confidence intervals.

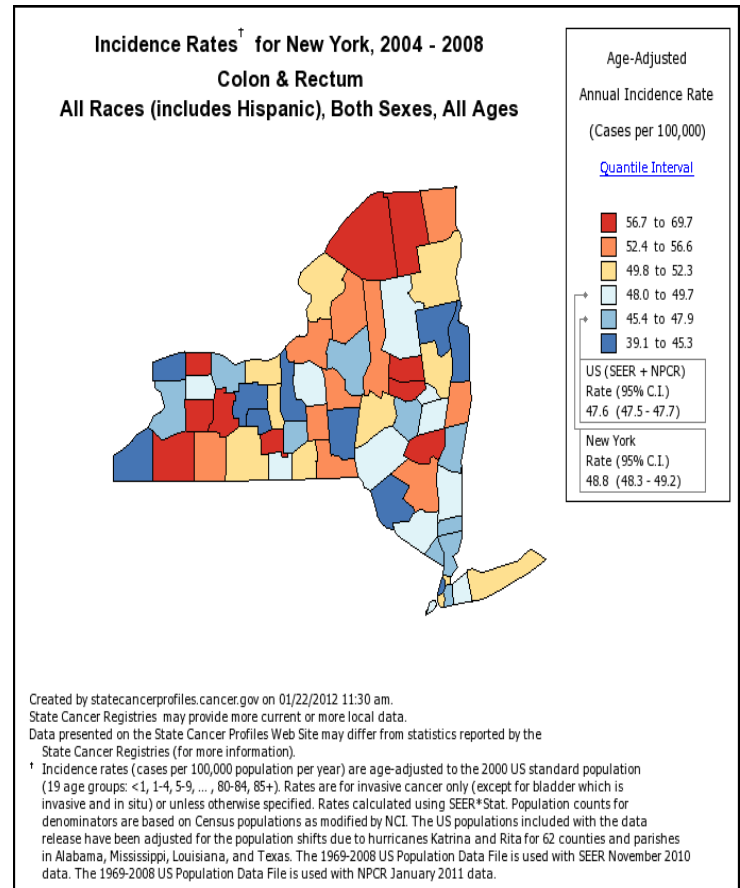
SOURCE: NYS Behavioral Risk Factor Surveillance System (BRFSS), 2010

Geographic Variation

The annual incidence of colorectal cancer varies by county. Counties with the highest incidence include Wyoming (69.7 per 100,000 population), Montgomery (66.3), St. Lawrence (63.4), Schuyler (62.7) and Livingston (62.1). Those with the lowest

incidence include Chenango (43.6), New York (42.8), Warren (42.7), Washington (41.8) and Ontario (39.1)¹ (Figure 19).

Figure 19:

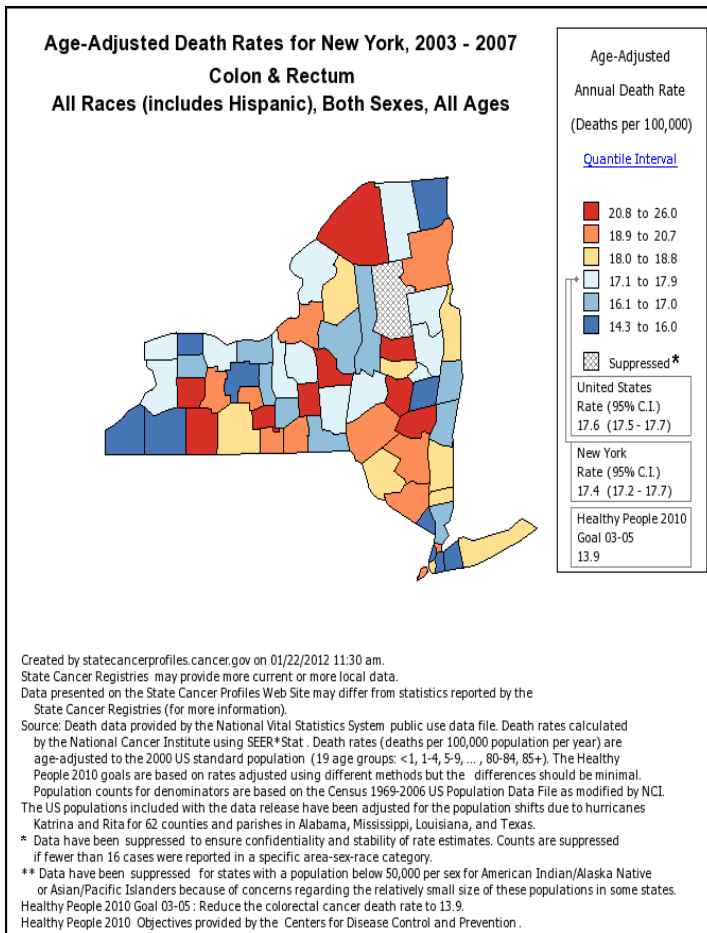


Mortality also varies by county, with the highest annual death rates in St. Lawrence (26.0 per 100,000 population), Schuyler (24.7), Greene (24.0), Cortland (23.2) and Madison (23.1). Counties with the lowest annual death rates were Queens (15.8), Ontario (15.1), Orleans (15.0), Rockland (14.5) and Clinton (14.3)¹ (Figure 20).

Men and women 50 years and older in NYC are less likely to report a blood stool test in the past year or lower endoscopy (sigmoidoscopy or colonoscopy) in the past ten years (67.8 percent) compared to those in the rest of the State (70.5 percent). Among counties outside NYC, those with the highest percentage of men and women 50 and older reporting a blood stool test in the past year or lower percentage receiving endoscopy (sigmoidoscopy or colonoscopy) in the past 10 years were Cayuga (76.4 percent), Clinton (76.4 percent), Tompkins (76.3 percent), Westchester (75.5 percent), Niagara (74.8 percent) and

Onondaga (74.8 percent). Those with the lowest screening rates were Schoharie (62.6 percent), Allegany (59.2 percent), Delaware (58.7 percent), Lewis (55.9 percent) and Chenango (55.4 percent) counties.³

Figure 20:



Gender

Colorectal cancer incidence in NYS is higher among men (56.7 per 100,000 males) than women (43.0 per 100,000 females). Mortality from colorectal cancer is also higher among men (20.0 per 100,000 males) than women (14.3 per 100,000 females).¹

There is no discernible gender difference in the percentage reporting a blood stool test in the past year or lower endoscopy (sigmoidoscopy or colonoscopy) in the past ten years (69.1 percent for men and 69.3 percent for women).³

Age

Colorectal cancer incidence increases with age and is highest among New Yorkers aged 85 and older (473.3 per 100,000 males and 359.2 per 100,000 females). Colorectal cancer mortality also increases with age, with the highest mortality in men and

women aged 85 and older (255.6 per 100,000 males and 208.8 per 100,000 females).¹

For New York men and women aged 50-75 years, the percentage reporting a blood stool test in the past year or sigmoidoscopy or colonoscopy in the past 10 years was lower among those aged 50-64 (64.9 percent) than those ages 65-75 (79.3 percent).³

Race and Ethnicity

In NYS, Black non-Hispanic men have a higher incidence of colorectal cancer (58.7 per 100,000 males) than White non-Hispanic (56.4), Hispanic (53.2) and Asian/Pacific Islander non-Hispanic men (42.8). Similarly, Black non-Hispanic women have a higher incidence of colorectal cancer (45.4 per 100,000 females) than White non-Hispanic (42.2), Asian/Pacific Islander non-Hispanic (35.1) and Hispanic women (34.7).

Mortality is higher among Black non-Hispanic men and women (23.3 per 100,000 males and 16.5 per 100,000 females) than White non-Hispanics (19.6 per 100,000 males and 13.9 per 100,000 females), Hispanics (16.8 per 100,000 males and 12.1 per 100,000 females) and Asian/Pacific Islander non-Hispanic men and women (14.2 per 100,000 males and 9.0 per 100,000 females). Mortality has declined in recent years, but the decline among non-Hispanic White men and women has been greater than among Black non-Hispanic men and women² (Figure 21).

In NYS, the percentage of adults aged 50-75 reporting a blood stool test in the past year or sigmoidoscopy or colonoscopy in the past ten years is similar between White non-Hispanic and Black non-Hispanic adults (70.3 percent and 70.2 percent, respectively), but the percentage is lower among Hispanic adults (63.9 percent) and those reporting an *Other Race* (61.0 percent)³ (Figure 22).

Figure 21:

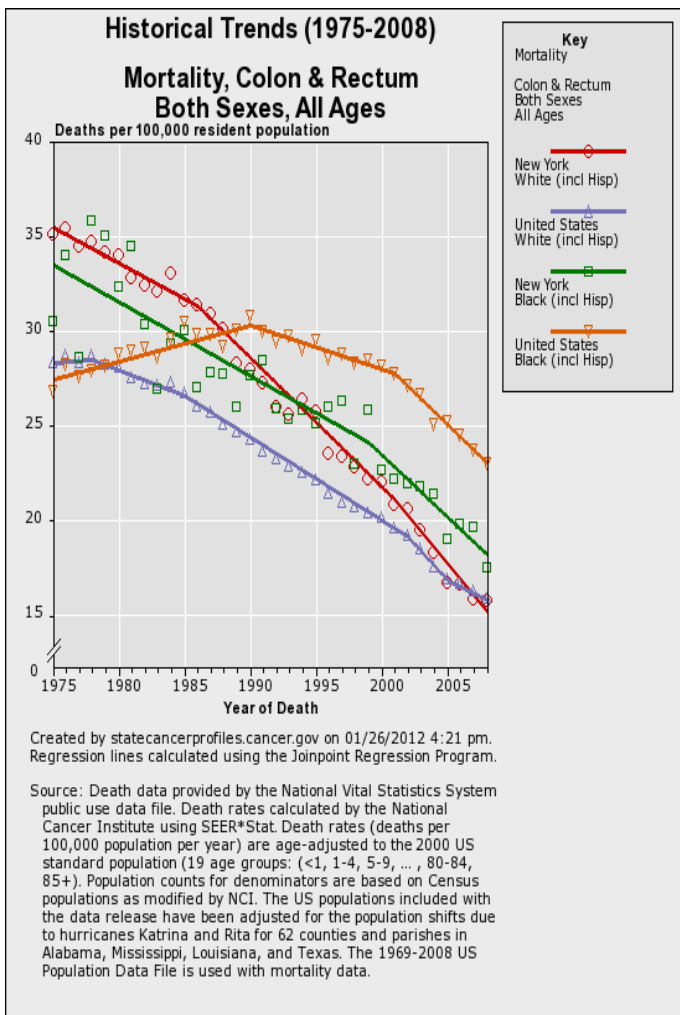
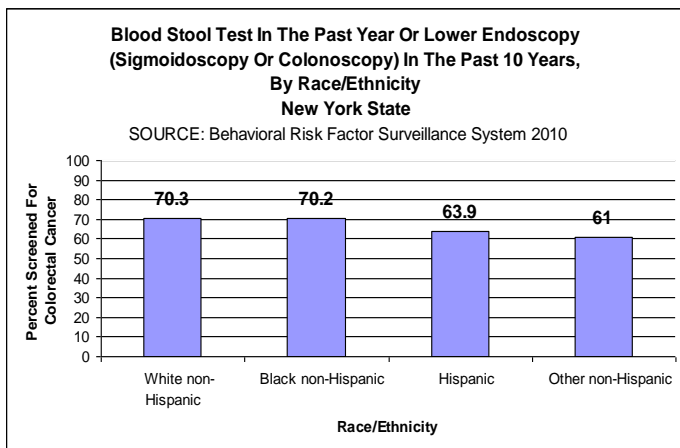


Figure 22:

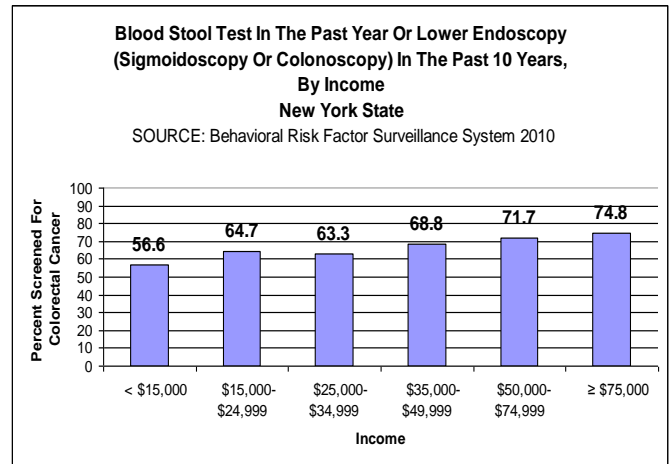


Income and Education

NYS adults with lower incomes are less likely to be screened. In 2010, the percentage of adults aged 50-75 reporting a blood stool test in the past ten years was 74.8 percent for those with annual incomes of \$75,000 or more, compared to less

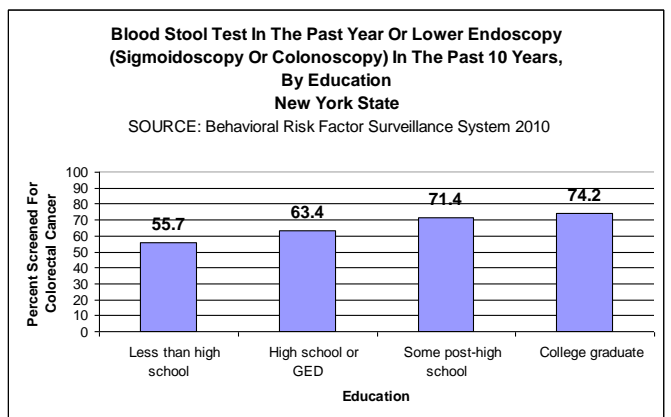
than 56.6 percent for those with annual incomes of less than \$15,000³ (Figure 23).

Figure 23:



NYS adults with less education are also less likely to be screened. In 2010, college graduates were more likely to report having a blood stool test in the past year or sigmoidoscopy or colonoscopy in the past ten years (74.2 percent) than those with less than high school diplomas (55.7 percent)³ (Figure 24).

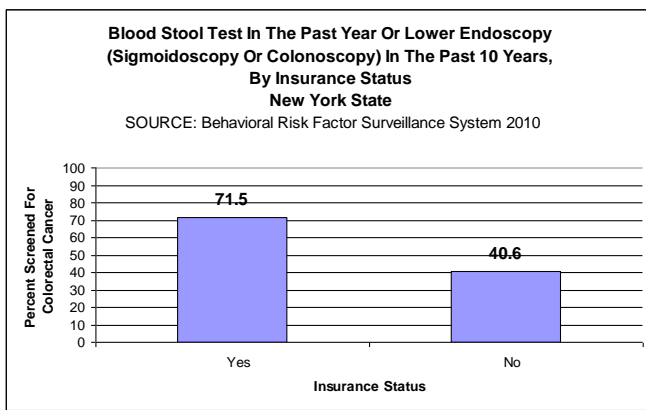
Figure 24:



Insurance Status

NYS adults with health insurance are much more likely to be screened for colorectal cancer (71.5 percent) than those without health insurance (40.6 percent)³ (Figure 25).

Figure 25:



CHALLENGES

- **Cancer encompasses complex diseases and varied risk factors.**
- **Risk factors for cancer also affect other chronic diseases.**

Tobacco use, unhealthy diets, overweight, sedentary lifestyles, and lack of breastfeeding increase the risk of developing certain cancers. These factors also impact the burden of other chronic diseases, such as diabetes and heart disease.

- **Cancer health cases have disparities.**

Certain groups in NYS suffer disproportionately from cancer and its effects. The risk of developing or dying from cancer varies by race/ethnicity, and disparities are more pronounced with specific cancers. According to HP 2020, race/ethnicity, gender, sexual identity, age, disability, socioeconomic status, and location all contribute to an individual's ability to achieve good health. Other factors add to this burden, including lack of healthy food choices, low rates of physical activity, higher smoking rates, lack of a consistent health care provider, inadequate access to care (including cancer screening), and lack of health insurance.

- **Access to quality cancer care.**

The burden of cancer weighs heavily on individuals and families, especially when access to care is limited by a lack of income or health insurance or by geographic barriers to cancer care resources. With the implementation of the Patient Protection and Affordable Care Act, the proportion of uninsured individuals is expected to decrease. But the barriers to quality cancer care will persist,

including individual-level barriers (e.g., transportation, health literacy) and systems-level challenges (e.g., access to a sufficient supply of well-trained health care providers, lack of care coordination across multiple specialists and settings, the need for provision and updating of knowledge and technical support of guideline-concordant care).

References

- ¹New York State Cancer Registry. Cancer Incidence and Mortality for New York State, 2004-2008. New York State Department of Health, 2010. <http://www.health.ny.gov/statistics/cancer/registry/vol1/v1rnys.htm>
- ²National Cancer Institute and Centers for Disease Control and Prevention. State Cancer Profiles. <http://statecancerprofiles.cancer.gov/>
- ³New York State Behavioral Risk Factor Surveillance System, 2010. New York State Department of Health. <http://www.health.ny.gov/statistics/brfss/>

Prevention Agenda Toward the Healthiest State Progress Report 2012

Diabetes

BACKGROUND

Diabetes has reached epidemic proportions in NYS and across the nation, and it is one of the major public health threats of our time. Nationally, diabetes affects 25.8 million Americans, or 8.3 percent of the population. An additional 79 million adults have pre-diabetes, and are at high risk of developing diabetes in the future.¹ People with pre-diabetes have blood glucose levels higher than normal, but not high enough to be diagnosed as diabetes. If current trends continue, more than 50 percent of Americans could have diabetes or pre-diabetes by 2020, costing \$3.35 trillion over the next decade.²

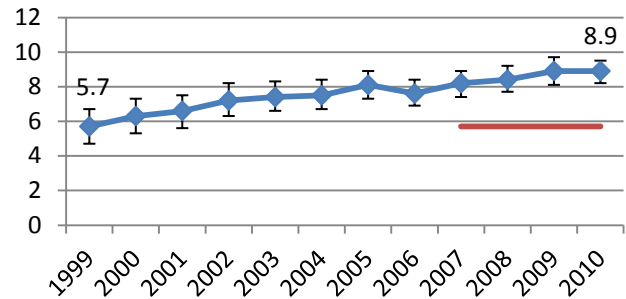
In NYS, more than 1.3 million people (8.9 percent of the adult population) have been diagnosed with diabetes. Almost 514,000 diabetic individuals living in NYC have been diagnosed.³ In addition, approximately 760,000 New Yorkers are diabetic but do not know it.⁴ Between 3.7 and 4.2 million (25-30 percent) adult New Yorkers have pre-diabetes.

Diabetes is not only a common and serious disease, but its economic costs of diabetes are staggering. In 2006, diabetic New Yorkers had costs of almost \$12.9 billion, including excess medical costs of \$8.7 billion and \$4.2 billion for the value of lost productivity.⁵ In 2008, NYS Medicaid program expenditures totaled approximately \$4.6 billion for the nearly 307,000 beneficiaries with diabetes.⁶ A sustainable reduction in the health and economic burden of diabetes requires effective partnerships among clinicians, community-based lifestyle programs and third-party payers.

BURDEN

The prevalence of self-reported diabetes among NYS adults has increased steadily over the past 11 years. The three-year moving average has nearly doubled from 4.6 percent in 1996-1998 to 8.5 percent in 2007-2009 (Figure 1).

Figure 1: Diabetes Prevalence Among Adults (18+), 1999-2010, NYS

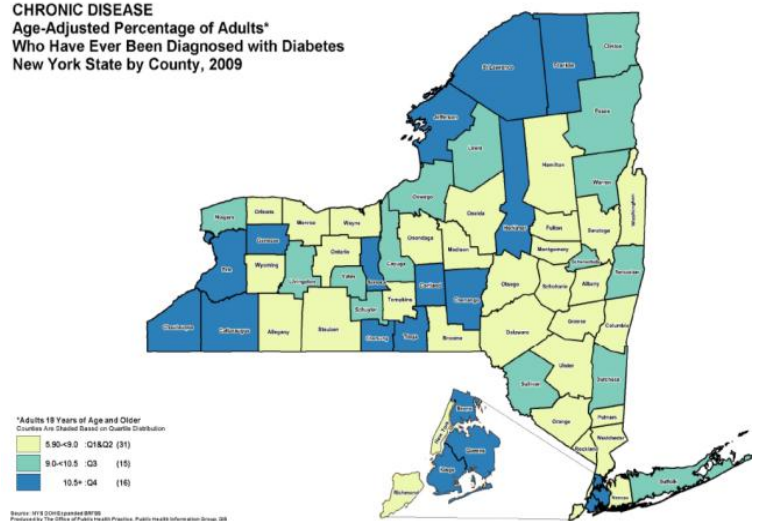


SOURCE: NYS BRFS

The prevalence of diabetes varies by county across the State, with higher prevalence in NYC and certain western and northern counties (Figure 2).

Figure 2: Diabetes Prevalence by NYS County, eBRFSS 2009

CHRONIC DISEASE
Age-Adjusted Percentage of Adults*
Who Have Ever Been Diagnosed with Diabetes
New York State by County, 2009



SOURCE: NYS Expanded Behavioral Risk Factor Surveillance System

An estimated 3.7 million to 4.2 million (25-30 percent) adult New Yorkers have pre-diabetes, including about 25 percent of Medicaid enrollees (761,026).¹⁰ People with pre-diabetes are five to 15 times more likely to develop Type 2 diabetes than those without the condition, and are also at increased risk of developing heart disease, stroke and eye disease.¹¹

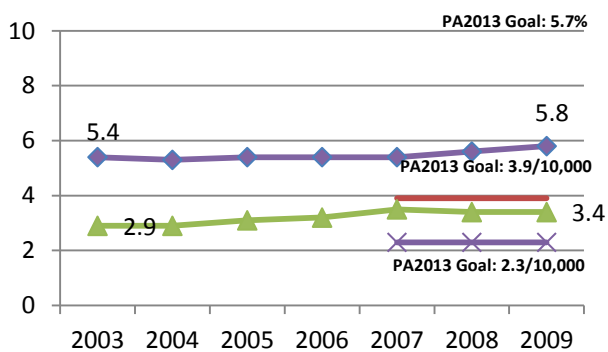
The prevalence of gestational diabetes, or diabetes during pregnancy, has also steadily increased in NYS from 1995 (35.5 per 1,000 live births) to 2006 (47.3 per 1,000 live births). The prevalence is highest among Asian women (7.9 percent).¹²

The rapid increase in the prevalence of diabetes and pre-diabetes is highly correlated with the increasing prevalence of obesity. An estimated 60.1 percent of NYS adults are either overweight (35.6 percent) or obese (24.6 percent).¹³ In addition, 34 percent of middle- and high-school age children are estimated to be overweight (16 percent) or obese (18 percent),¹⁴ which is highly correlated with the emerging trend of Type 2 diabetes in children, a disease previously diagnosed only in adults. Currently, Type 2 diabetes accounts for nearly 12 percent of diagnosed diabetes in children.¹⁵

Diabetes is the seventh leading cause of death in NYS. If not managed properly, diabetes can affect every major organ system and cause many serious complications, including heart disease and stroke, kidney disease, eye disease, nerve damage, periodontal disease, amputations, depression and reproductive complications.

Hospitalizations for diabetes are often preventable and may be seen as a marker for poor diabetes control. The rate of hospitalization for short-term complications of diabetes in children aged six to 17 and adults aged 18 and older increased between 2003 and 2009 (Figure 3).

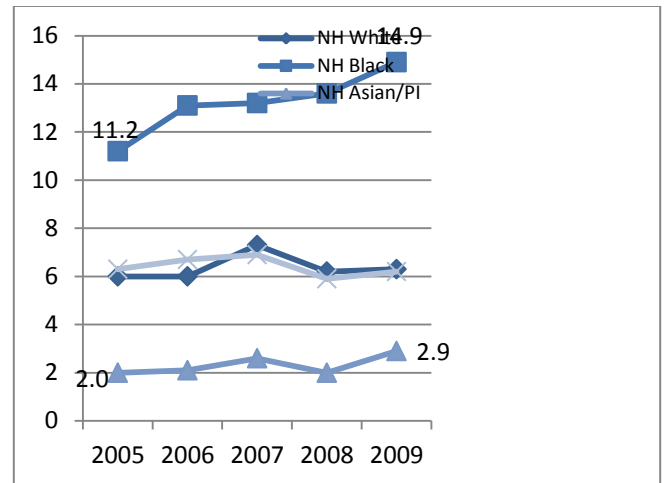
Figure 3: Rate of Hospitalization per 10,000 Residents for Short-term Complications of Diabetes for Children Aged 6-17 and Adults Aged 18+ Years, NYS, 2003-2009



SOURCE: SPARCS

Emergency department visits may be seen as a marker for poor access to primary diabetes care. Age-adjusted diabetes-related ED visits increased in all race and ethnic groups from 2005-2009 (Figure 4).

Figure 4: Age-adjusted Diabetes-related ED Visits per 100,000 Residents, by Race/ethnicity, 2005-2009, NYS



*Age-adjusted to US Census 2000 population

SOURCE: SPARCS

Diabetes increases the risk of heart disease by two to four times; is the leading cause of kidney failure, lower limb amputations and adult-onset blindness; and can lower life expectancy by up to 15 years. Nationally, there was an 89 percent increase in the number of people aged 40 and older with diabetic retinopathy from 2000-2010. According to new data released in Prevent Blindness America's 2012 edition of "Vision Problems in the US" (<http://www.visionproblemsus.org/>). Diabetes is the leading cause of new cases of blindness in adults 20-74 years old.

In addition to these human costs, the estimated financial cost of diabetes in the United States in 2007 was \$174 billion. Average medical expenditures for people with diabetes are 2.3 times higher than those for people without diabetes, averaging \$11,744 annually vs. \$5,095 for those without diabetes.¹⁷ The cost of diabetes in NYS was estimated at \$12.9 billion in 2006, including \$8.7 billion in medical expenditures and \$4.2 billion in lost productivity.¹⁸ NYS Medicaid spent approximately \$4.6 billion for the nearly 307,000 fee-for-service members with diabetes in 2008.¹⁹

DISPARITIES

Diabetes disproportionately affects some segments of the population, including racial and ethnic minorities, the elderly, people with disabilities, and those who are socioeconomically disadvantaged. While the prevalence and incidence of diabetes have increased among all US populations over the past 20 years, racial and ethnic minorities and socioeconomically disadvantaged groups have experienced the steepest increases and borne the majority of the disease burden,²⁰ as highlighted below:

- The risk of diabetes increases with age and is most prevalent among NYS adults between ages 65-74 years (20.3 percent).
- Self-reported diabetes is more prevalent among Black non-Hispanic (12.1 percent) than among non-Hispanic Whites (7.7 percent).
- Although the majority of NYS adults with diabetes are White non-Hispanics, racial and ethnic minorities make up a larger proportion of the population of adults with diabetes (44 percent) than the total State population (32 percent).
- Adults with annual household incomes less than \$15,000 are nearly three times as likely to report having diabetes as those with annual household incomes of more than \$50,000 (15.2 vs. 5.2 percent).
- Approximately two-thirds of adults with diabetes (66 percent) live outside NYC.
- In 2009, self-reported diabetes was more prevalent among adults with disabilities (19.2 percent) than those without disabilities (6.2 percent).

Access to Care^{21,22}

- Testing for high blood sugar is less prevalent among adults without health insurance than those who report having health insurance (42 percent vs. 62 percent) and among adults without a regular health care provider than adults with one (38 percent vs. 64 percent).
- Despite quality improvement efforts, in 2007 only half of Medicaid managed care enrollees with diabetes (49 percent) received all four recommended clinical preventive care services

(HbA1c test, lipid profile, nephropathy screening and eye exam) based on national guidelines for diabetes management.

- In 2007, Black non-Hispanics with diabetes enrolled in Medicaid managed care were less likely to have received the diabetes screening composite (41 percent) than White non-Hispanic (48 percent), Hispanics (49 percent) and Asians (58 percent).

Complications^{23,24}

- According to 2008 BRFSS data, diabetic retinopathy was diagnosed in 19.4 percent of adult New Yorkers with diabetes. However, one in three patients with diabetes, and half of people with diabetes aged 45-65 years, are estimated to have some stage of diabetic retinopathy.
- NYS BRFSS data collected in 2009 found that, among adult New Yorkers with diabetes, diabetic retinopathy disproportionately affects the Black non-Hispanic (31 percent) and Hispanic populations (35 percent) vs. White non-Hispanic (16 percent).
- In 2009, the age-adjusted hospitalization rate per 10,000 population for which diabetes was the primary diagnosis was much higher among Black non-Hispanics (45.7) and Hispanics (25.7) than among White non-Hispanic (11.3) and Asian/Pacific Islander non-Hispanic (6.7).
- Similarly, in 2009 the age-adjusted rate of hospitalizations for short-term complications of diabetes was higher among Black non-Hispanic adults (13.5) and Hispanic adults (5.9) than among White non-Hispanics (3.5) and Asian/Pacific Islander non-Hispanics (1.1).
- In areas of NYC where more than 30 percent of the population have incomes below the Federal poverty level, the hospitalization rates for short-term diabetes complications were dramatically higher than the Statewide rate. In the most impoverished areas of the Bronx (Tremont, University Heights, Highbridge, Morrisania, Soundview, Hunts Point and Castle Hill), the rate of hospitalizations for short-term diabetes complications was 13.3/10,000. Disparities in hospitalization rates were observed in impoverished areas of Brooklyn

(Bedford/Stuyvesant, Crown Heights, East New York and Greenpoint at 10.5/10,000) and Manhattan (Central and East Harlem and Washington Heights at 10.4/10,000).²⁵

Mortality²⁶

- In NYS, Black non-Hispanics are twice as likely as Whites to die from diabetes.
- In NYS in 2009, diabetes was the third leading cause of death among Black non-Hispanics and the fourth leading cause of death among Hispanics. Diabetes was not in the top five leading causes of death for White non-Hispanics or Asian/Pacific Islander non-Hispanics.

CHALLENGES

The diabetes epidemic threatens to overwhelm New York's health care system and affect an entire generation.

■ **Lack of Clinician Awareness and Diagnosis of Pre-Diabetes**

Approximately 4.5 million New Yorkers (35 percent) have pre-diabetes, but only 5.5 percent of adult New Yorkers report being diagnosed with the condition.

■ **Guideline Concordant Care For Diabetes**

Medicaid Managed Care patients received less than half (49 percent) of the recommended clinical care using four indicators based on national guidelines for diabetes management.²²

■ **Lack of Awareness Among Providers, CDEs and Consumers about Diabetes Self-Management Training (DSMT) among Medicaid Beneficiaries**

DSMT became a Medicaid-reimbursable benefit in January 2009. Only 128 clinicians have enrolled with Medicaid to provide DSMT.

■ **Closing The Disparities Gap**

Diabetes disproportionately affects racial and ethnic minority groups, with Black non-Hispanics, Hispanic, American Indian and Alaskan Native non-Hispanic adults nearly twice as likely as White non-Hispanic adults to have diabetes. In NYS, Black non-Hispanics are twice as likely as non-Hispanic Whites to die from diabetes. The poorest New Yorkers have rates of diabetes almost three times higher (15.2 percent) than those with incomes \$50,000 or higher (5.2 percent).

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Heart Disease and Stroke

BACKGROUND

Cardiovascular disease (CVD), including heart disease and stroke, is the leading cause of death in NYS. In 2009, there were 56,940 deaths from CVD, representing 38.9 percent of all deaths in NYS. Nationally, 32.2 percent of all deaths were due to CVD in 2009.¹

In 2010, approximately 1.2 million adults in NYS reported having had a heart attack, stroke or angina; 4.3 million reported having high blood pressure; and 5.9 million reported having elevated cholesterol.²

In NYS, CVD was estimated to have cost \$34.7 billion in 2009,¹ including medical costs and lost productivity. Nationally, the total direct medical costs of CVD are projected to triple from \$273 billion in 2010 to \$818 billion in 2030 (in 2008 dollars).⁴ According to the American Heart Association, CVD is responsible for 17 percent of national health expenditures.³

Much of CVD is preventable. The major modifiable risk factors for CVD are elevated blood pressure, dyslipidemia (high LDL and/or low HDL), smoking, obesity, lack of physical activity, and poor diet (high saturated and trans fats, high sodium, low fruit, and low vegetable intake). A recent analysis found that if high blood pressure control rates nationally increased to the 70 percent level achieved by high-performing health systems, there would be 46,000 fewer deaths annually and 570,000 fewer years of life lost.⁵

DATA TRENDS

The 2009 CVD mortality rate in NYS was higher than the national mortality rate (254 deaths per 100,000 population in NYS vs. 236 deaths nationwide).⁶ As in the rest of the country, CVD mortality rates have been steadily declining in NYS since 1980;¹ however, mortality rates for CVD associated with hypertension have remained unchanged since 1999 and have been consistently higher in NYS than in the US.⁶

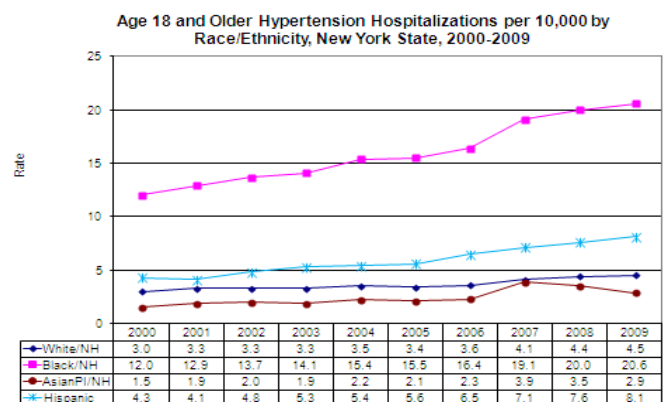
In 2009, the stroke mortality rate in NYS was lower than the US rate (27 per 100,000 people in NY vs. 39 nationwide). Stroke mortality has steadily declined in NYS and the United States.⁷

In NYS in 2009, there were 359,887 hospital discharges due to CVD.⁸ The age-adjusted hospital discharge rate for all CVD decreased from 191 per 10,000 of population in 2002 to 165 in 2009.⁹ Although the rate declined, it continues to be the most frequent cause of hospitalization after pregnancy and childbirth.

In 2009, NYS's crude hospital discharge rate for stroke was 27.9 per 10,000 compared to a US rate of 24.8 per 10,000. The State rate declined from 31.5 per 10,000 in 2000.¹⁰

Hospitalization with a primary diagnosis of hypertension has been identified as an indicator of poor outpatient care. In NYS, the crude rate of hypertension-related hospitalizations increased from 5.0 per 10,000 in 2000 to 8.0 per 10,000 in 2009, with the highest levels in NYC and among Black non-Hispanics (Figure 1).

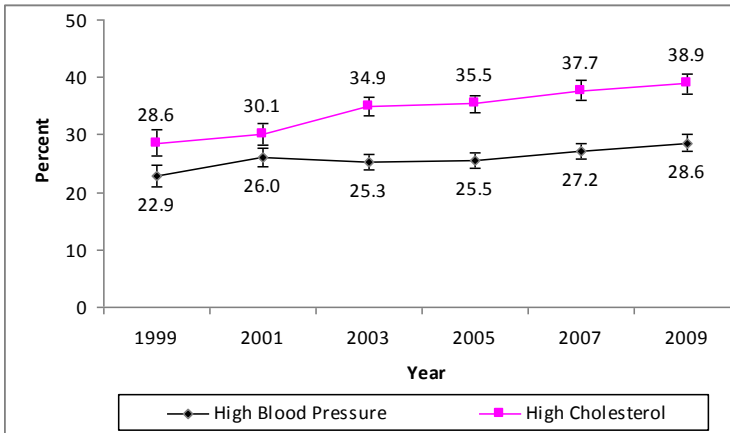
Figure 1:



SOURCE: NY Statewide Planning and Research Cooperative System (SPARCS)

Despite reductions in mortality, the prevalence of several CVD risk factors is increasing. According to self-reported data in NYS BRFSS, the prevalence of adults with high blood pressure increased from 22.9 percent in 1999 to 28.6 percent in 2009 (Figure 2). The prevalence of elevated cholesterol (among those who had ever had their blood cholesterol checked) rose from 28.6 percent in 1999 to 38.9 percent in 2009.¹²

Figure 2: High Blood Pressure and High Cholesterol among NYS Adults, BRFSS, 1999-2009

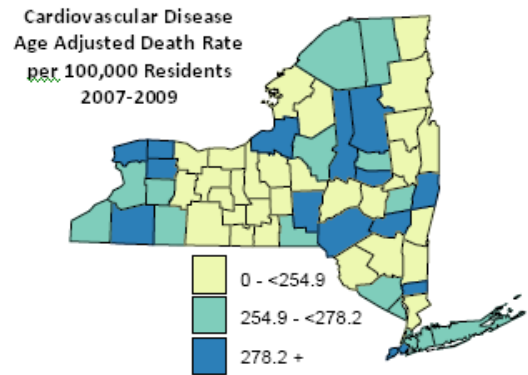


Obesity and tobacco use are significant risk factors for hypertension and CVD. While smoking rates have declined, obesity rates in NYS have risen dramatically in recent years and are likely to lead to continued, accelerated increase in hypertension rates to come.

DISPARITIES

In 2008, more women died from CVD than men (31,877 vs. 26,752),¹⁵ explained in part by the large number of women in older age categories where CVD deaths are concentrated. Mortality rates for CVD are highest in western and northern counties of the State and in NYC¹⁶ (Figure 3).

Figure 3:



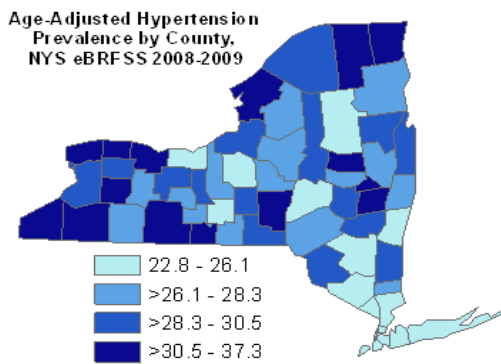
DATA SOURCE: NYS Vital Statistics

In 2008, Black non-Hispanics had a significantly higher premature CVD mortality rate (deaths in ages 35-74 years) than White non-Hispanics (252.1 per 100,000 for Black non-Hispanics vs. 152.0 per 100,000 for White non-Hispanics).¹⁶

In 2009, Black non-Hispanics ages 35-74 had a higher hospital discharge rate for CVD than similarly aged White non-Hispanics or Hispanics.⁸ The hospital discharge rate for Black non-Hispanics ages 35-74 years with a primary diagnosis of hypertension were more than six times the comparable rate for White non-Hispanics (37.2 vs. 10.3 per 10,000).¹⁰ Black non-Hispanic New Yorkers also had a significantly higher hospital discharge rate for stroke (35.6 per 10,000 vs. 22.4 for White non-Hispanics and 21.6 for Hispanics).

In 2009, the prevalence of self-reported high blood pressure was 38.0 percent in Black non-Hispanic adults, 28.8 percent in White non-Hispanics and 20.9 percent in Hispanics. Rates were similar among men and women, but higher among those with lower incomes and those with less education. Prevalence of high blood pressure was significantly higher among adults with disabilities (44.9 percent) than those without disabilities (24.0 percent). Prevalence was slightly higher outside NYC (29.5 percent) than in NYC (26.6 percent).¹² The age-adjusted prevalence of hypertension by county is shown in Figure 4.

Figure 4:



DATA SOURCE: NY Expanded Behavioral Risk Factor Survey

High cholesterol rates did not vary much by race and ethnicity (39.9 percent among non-Hispanic Whites, 38.3 percent among Black non-Hispanics, and 37.8 percent among Hispanics) nor between NYC (39.2 percent) and the rest of the State (38.8 percent). Rates were similar among men and women, but were higher among those with low incomes and those with less education. Elevated cholesterol rates were significantly higher among adults with disabilities (50.3 percent) than those without disabilities (36.0 percent).¹²

The National Health and Nutrition Examination Survey of actual blood pressure measurements shows that the prevalence of hypertension increased from 23.9 percent between 1988-1994 to 29.0 percent in 2007-2008. At the same time, the proportion of people with hypertension whose blood pressure was controlled (less than 140 mmHg/90 mmHg) increased from 27.3 to 50.1 percent.¹⁷ 2005-06, the rates of hypertension were similar between men and women.

Black non-Hispanics had a higher rate of hypertension than White non-Hispanics (41

percent vs. 28 percent). Overall, 78 percent of adults with hypertension were aware of their condition, with Black non-Hispanics more likely to be aware than White non-Hispanics. Nearly seven percent of all adults had blood pressure readings above 140/90 mm Hg, but had never been told by a health professional that they had high blood pressure.

Overall, 68 percent of those with hypertension were being treated with medication; Black non-Hispanics were slightly more likely to be treated with medication than White non-Hispanics. Of those treated with medications, 64 percent had their blood pressure under control. Black non-Hispanics in treatment were slightly less likely to have their blood pressure under control than White non-Hispanics (58 vs. 65 percent). Overall, 28 percent of adults had pre-hypertension.¹⁸

Many NYS adults have more than one chronic disease. Among adults with diabetes, 67 percent self-reported having hypertension and 66 percent have elevated cholesterol. Among obese adults, 44 percent reported having hypertension and 48 percent reported having elevated cholesterol.

CHALLENGES

- Healthcare providers are subjected to varying quality improvement efforts from different payers (Medicare, Medicaid, commercial insurers), rather than a consistent approach.
- Counseling on lifestyle changes and encouragement of patient self-management is inconsistent.
- Opportunities for physical activity and access to healthy foods are lacking in many communities.

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Obesity

BACKGROUND

Obesity has reached epidemic proportions in NYS and across the nation. Nationally, 17 percent of children and adolescents aged 2-19 are obese, and obesity prevalence among adults exceeds 35 percent.^{1,2} In NYS, 24.6 percent of adults are obese and another 35.6 percent are overweight, affecting an estimated 8.5 million people.³ Forty percent of NYC pupils (aged 6-12 years)⁴ are overweight and obese, compared to 32 percent of students in the rest of the State.⁵ Among New York's low-income children aged 2-4 years participating in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), 31.5 percent are overweight or obese.⁶

Obesity and overweight are currently the second leading cause of preventable death in the US and may soon overtake tobacco as the leading cause.⁷ By the year 2050, obesity is predicted to shorten life expectancy in the US by two to five years.⁸ NYS ranks second among states in medical expenditures attributable to obesity. Expenditures (2009 dollars) totaled \$11.1 billion, with \$4 billion financed by Medicaid and \$2.7 billion financed by Medicare.⁹ Preventing and controlling obesity has the potential to save hundreds of millions of dollars annually.

Failing to win the battle against obesity will mean premature death and disability for an increasingly large segment of New York residents. Without strong action to reverse the obesity epidemic, for the first time in history, children may face shorter life spans than their parents.¹⁰

Obesity is a significant risk factor for many chronic diseases and conditions, which reduce the quality of life for adults, including Type 2 diabetes, asthma, high blood pressure, and high cholesterol. Increasingly, these conditions are being seen in children.¹¹

For most children and adults, overweight is the result of unhealthy eating patterns (too many calories) and too little physical activity. Because these habits are established in early childhood, efforts to prevent obesity should begin early.

The causes of obesity are complex, and occur at social, economic, environmental, and individual levels. Successful prevention strategies employ public health approaches, including policy and environmental change strategies that can reach large numbers of people in multiple settings, such as childcare, schools, workplaces, communities, and health care settings.

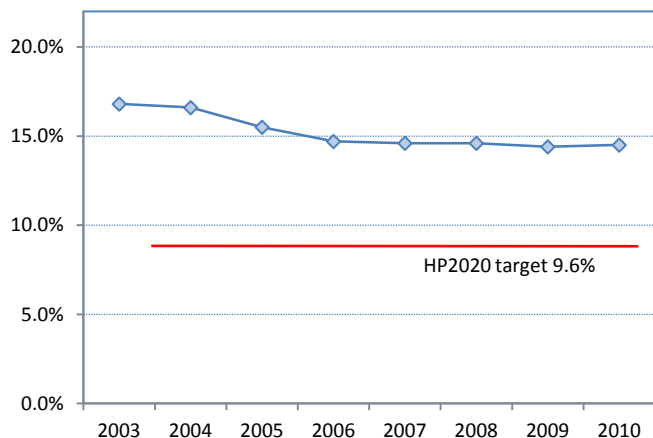
DATA TRENDS

Data describing overweight and obesity among New Yorkers comes from multiple Federal and State surveillance systems, including the Pediatric Nutrition Surveillance System, the Student Weight Status Category Reporting System and the Behavioral Risk Factor Surveillance System (BRFSS).

Low-income Preschool Children

The prevalence of obesity (body mass index (BMI) \geq 95th percentile), among low-income children (ages 2-5 years) participating in the WIC program declined from a high of 16.8 percent in 2003 to 14.5 percent in 2010, still exceeding both the Healthy People 2020 target of 9.6 percent and the NYS Prevention Agenda 2013 target of 11.6 percent. During the same period the prevalence of overweight (BMI 85th-<95th percentile) increased from 16.5 percent to 17.0 percent. The prevalence of BMI at or above the 85th percentile (overweight or obesity) declined from 33.3 percent to 31.5 percent.

Figure 1: Trend in Prevalence of Obesity among WIC Children 2–4 years of age, 2003-2010

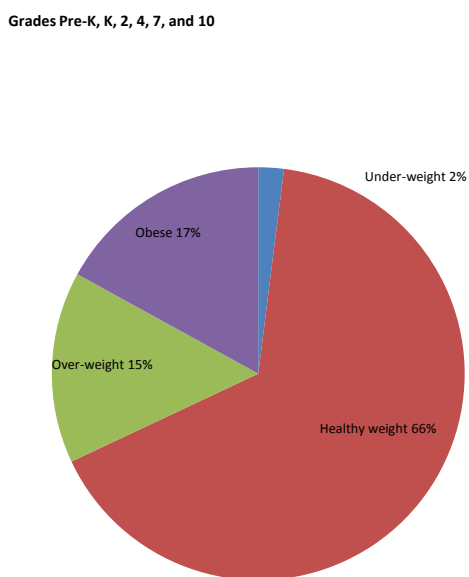


SOURCE: 2010 Pediatric Nutrition Surveillance Report, Table 12C.

School-Age Children

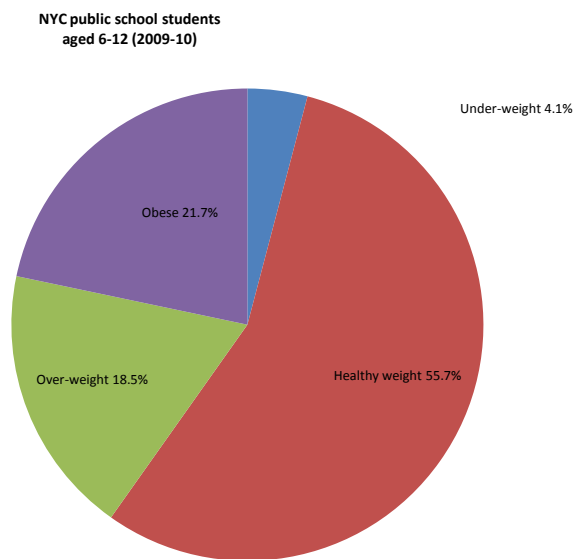
The prevalence of obesity (BMI >95th percentile) among public school students outside NYC is 17 percent (Figure 2). Among NYC students aged 6-12 years, the prevalence of both obesity and overweight is greater than in the rest of the State (Figure 3). Throughout NYS, the prevalence of obesity among students is three to four times the Prevention Agenda goal of 5 percent and exceeds the HP2020 goals for school-age children, including adolescents.

Figure 2: Weight Status of NYS Public School Students (exclusive of NYC), 2008-10



SOURCE: Student Weight Status Category Report, 2008-2010

Figure 3: Weight Status of NYC Public School Students, 2009-2010

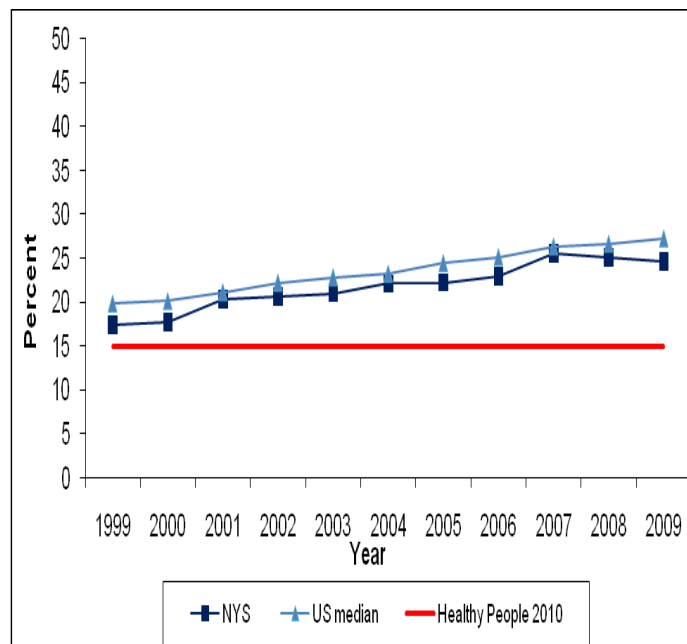


SOURCE: NYC Fitnessgram.

Adults

Among adults in NYS during the decade from 1999 to 2009, obesity increased 40 percent from 17.4 percent to 24.6 percent of the population (Figure 4). This is above the HP2010 goal of 15 percent, but well below the new HP 2020 goal of 30.6 percent.

Figure 4: Prevalence of Obesity among Adults, NYS and US, BRFSS, 1999-2009

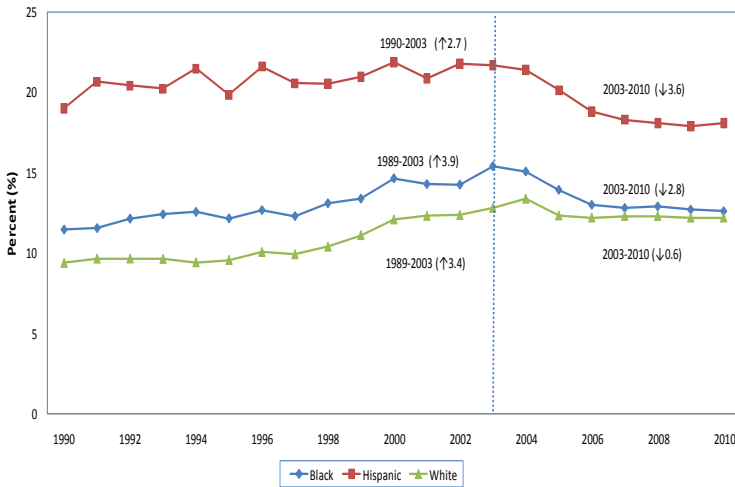


SOURCE: NY Behavioral Risk Factor Surveillance System

DISPARITIES

Obesity disproportionately affects minorities and low-income individuals. Among 2-4 year old children in the WIC program, the prevalence of obesity has consistently been highest among children of Hispanic origin, although this group has also seen the greatest absolute decline in obesity (Figure 5). The overall prevalence of obesity among low-income children enrolled in WIC in 2010 (14.5 percent), is in line with the estimates for a nationally representative sample of children aged 2-5 years (12.1 percent), indicating that obesity prevention efforts in New York’s WIC program may be favorably impacting the prevalence of obesity (Figure 5).

Figure 5: Trends in Prevalence of Obesity among WIC Children 2-4 years of age by race/ethnicity, NYS, 1990-2010

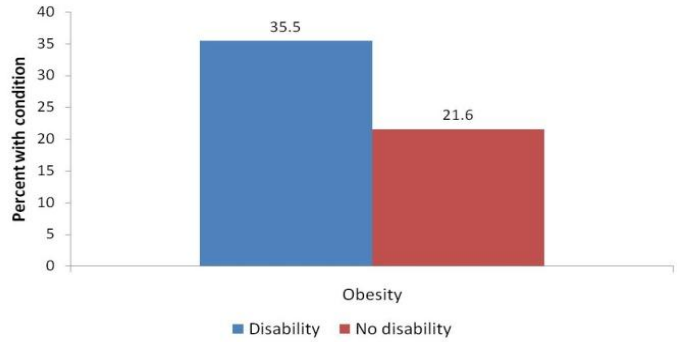


SOURCE: 2010 Pediatric Nutrition Surveillance Report, Table 18C

Data from the 2008 BRFSS indicate that among adults, obesity is highest among Black non-Hispanics (30.1 percent), followed by Hispanics (28.1 percent), and White non-Hispanics (24.6 percent).

Prevalence of obesity is higher among persons with disabilities. BRFSS data show that in 2009, 35.5 percent of persons reporting a disability were obese compared to 21.6 percent of individuals not reporting a disability (Figure 6).

Figure 6: Prevalence of Obesity among NYS Adults by Disability Status, 2009 BRFSS



SOURCE: NY Behavioral Risk Factor Survey

BURDEN

The financial burden of obesity in NYS is significant. Estimates suggest that without obesity, medical expenditures among states would be 7 percent to 11 percent lower. Therefore, effective measures to prevent and control obesity are needed to contain health care costs.¹² Obesity also casts a shadow over New York’s economic future. Nationally, adolescent overweight is expected to result in large future economic and health burdens, particularly lost productivity from premature death and disability.¹³ NYS is experiencing a twin epidemic of diabetes and obesity. Between 1999 and 2009, the prevalence of both diabetes and obesity increased among adults.¹⁴ Because obesity is a leading risk factor for diabetes, the increase in obesity prevalence translates to nearly one million additional New Yorkers at risk for diabetes and its associated costs of health care and lost productivity.

CHALLENGES

- A generation of children and youth are already affected by overweight and obesity that will likely result in excess health care costs and lost productivity.
- The capacity of the health care system to screen, assess, prevent and treat excessive weight gain and obesity is limited.
- The evidence base for obesity prevention and control is still emerging. More practice-based research is needed.

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Physical Activity

BACKGROUND

Physical activity is bodily movement of any type and may include recreational, fitness and sport activities such as jumping rope, playing soccer, lifting weights, as well as daily activities such as walking to the store, climbing stairs or raking leaves.

In NYS, the percentage of no leisure-time physical activity (LTPA), defined as physical activity or exercise other than a regular job, among adults is 26.4,¹ or approximately 3.9 million adults.² The percentage of adults who do not meet the minimum recommended levels of 150 minutes per week of physical activity is 49.2,³ or approximately 7.2 million.²

Participating in regular physical activity has significant benefits across the lifespan. It lowers the risk of chronic diseases and conditions, such as heart disease, stroke, high blood pressure, high cholesterol, Type 2 diabetes and certain cancers, and can contribute to an increased life expectancy. Physical activity can also aid in weight control, strengthen muscles and bones, and improve mental health.⁴ Studies suggest that moderate to high levels of physical activity substantially reduce, or even eliminate, the health risks associated with obesity.⁵ A physically active lifestyle helps protect against health problems that can result from sedentary living (e.g., obesity, diabetes and heart disease).

In 2008, the US Department of Health and Human Services released an updated Physical Activity Guideline for American citizens, available at www.health.gov/paguidelines/.⁴ For substantial health benefits, adults, including those aged 65 and older or with disabilities, should engage in moderate-intensity physical activity for at least 150 minutes per week, or 75 minutes per week of vigorous-intensity aerobic activity (or an equivalent combination) performed in bouts of ten minutes each. Among the guidelines were specific

recommendations that children and adolescents should accumulate 60 minutes or more of physical activity daily. Also, recommendations have been developed for muscle and bone strengthening activities.

NYSDOH works with internal and external partners to assess, develop, implement and evaluate evidence-based strategies and promising practices using the socio-ecological approach, which works across multiple sectors and levels of influence to increase physical activity levels in children and adults.

DATA TRENDS

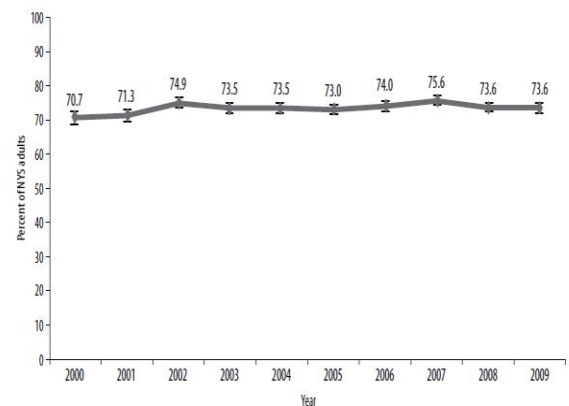
In 2011, 54.2 percent of US adults aged 18 years and over did not meet the 2008 Federal physical activity guidelines for aerobic activity (based on LTPA).ⁱ

Physical Activity in New York State – Adults

- The percentage of NYS adults who engage in LTPA has remained stable since 2000 (Figure 1).

Figure 1:

Any leisure-time physical activity* among New York State adults, by BRFSS survey year



* Other than your regular job, participation during the past month in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise.

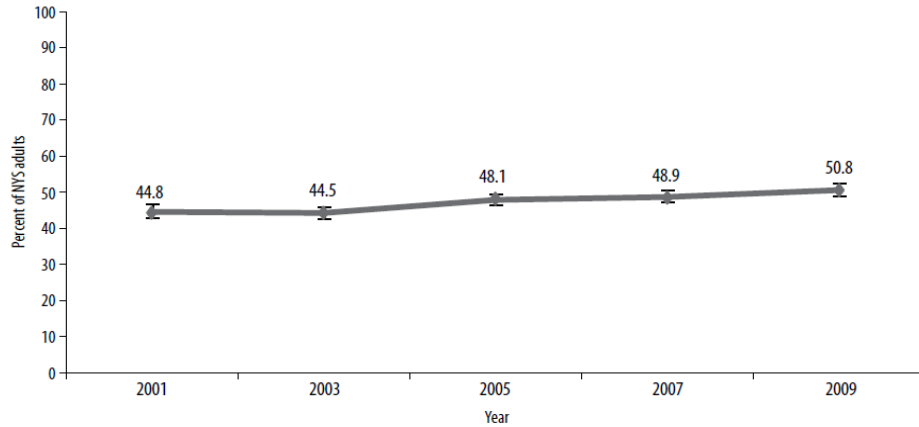
Note: Error bars represent 95% confidence intervals.

- Although the proportion of NYS adults meeting national recommendations for weekly physical activity increased between 2001 and 2009, only

half the adults participated in the recommended amounts of physical activity in 2009 (Figure 2).

Figure 2:

Met recommended level for physical activity* among New York State adults, by BRFSS survey year



*Met either the moderate- or vigorous-intensity level.
 Note: Data on physical activity not collected in 2002, 2004, or 2006 New York State BRFSS.
 Note: Error bars represent 95% confidence intervals.

Physical Activity in New York State - Youth

- Studies show that most youth do not meet physical activity guidelines of 60 minutes or more of moderate-to-vigorous physical activity a day.^{7,8}
- Only 42 percent of children aged 6-11 years exercise for an hour or more a day, five or more days per week.⁵

- Only 8 percent of adolescents aged 12-15 years and 7.6 percent of adolescents aged of 16-19 years exercise for an hour or more a day, five or more days per week.⁵
- In 2009, 42.3 percent of 9-12th grade students reported being physically active for at least 60 minutes a day (Table 1).

Table 1:

Physical Activity and Physical Education (PE) among High School Students
 New York State Youth Risk Behavior Survey (YRBS), 1999-2009*
 Trends for NYS and US

	1999	2003	2005	2007	2009
Physically active for at least 60 minutes per day on 5 or more days					
NYS	-	-	29.6 (27.3-32.0)	38.0** (35.8-40.2)	42.3** (39.4-45.3)
US	-	-	35.8** (33.9-37.9)	34.7 (32.5-37.0)	37.0 (35.2-38.8)
Attended PE classes on 1 or more days in an average week when in school					
NYS	93.3** (91.2-95.0)	93.7** (92.3-94.8)	94.2** (93.2-95.1)	90.8** (88.7-92.5)	92.0** (90.0-93.5)
US	56.1 (48.6-63.3)	55.7 (48.2-63.0)	54.2 (49.2-59.0)	53.6 (47.0-60.1)	56.4 (48.9-63.6)
Attended PE classes daily when in school					
NYS	24.0 (20.2-28.3)	18.5 (16.3-20.9)	17.4 (14.9-20.3)	13.1 (11.3-15.1)	15.4 (12.9-18.4)
US	29.1 (20.3-39.7)	28.4** (22.9-34.7)	33.0** (27.8-38.6)	30.3** (25.4-35.8)	33.3** (27.7-39.3)

Source: CDC Youth Online

*Data not available for 2001 **NYS or US significantly more likely (p<.05)

DISPARITIES

In the US, the percentage of adults who do not engage in any LTPA is higher among Black non-Hispanics (31.9 percent) and Hispanics (34.6 percent) than White non-Hispanics (22.2 percent).⁶

Adults

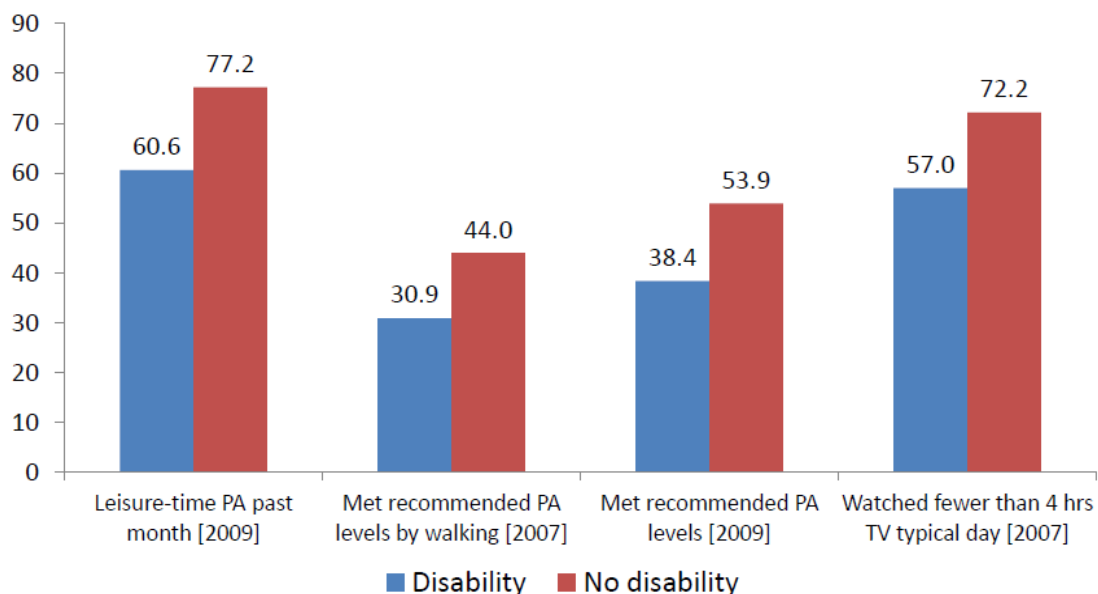
- Levels of no LTPA are lowest among non-Hispanic adults Whites (23.2 percent), those with a household income greater than \$50,000 (15.7 percent) and those holding a college degree (18 percent).¹
- Adults who report being neither overweight nor obese have lower rates of no LTPA (22.6 percent) compared to those who report being overweight (24.9 percent) and obese (32.7 percent).¹
- Adults with disabilities have higher levels of no LTPA (39.4 percent) compared to those without a disability (22.8 percent) (Figure 3).

Youth

- Female high school students report lower levels of physical activity (34.3 percent) compared to males (50.5 percent), while Hispanic high school students report lower levels (34.5 percent) compared to non-Hispanic Whites (48.1 percent).¹⁰
- Male and female high school students report similar rates of attending physical education classes on one or more days a week (91.2 percent and 92.6 percent, respectively).¹⁰

Figure 3:

Prevalence of physical activity indicators among NYS adults by disability status, 2007 or 2009 BRFSS



BURDEN

A sedentary lifestyle is a major risk factor for developing obesity and Type-2 diabetes. A lifestyle with little or no physical activity often results in a premature death, hospitalizations and hospital charges that might be averted through regular exercise.¹²

The estimated cost of physical inactivity for all adults in the US is \$251 billion.¹³ Sedentary adults pay \$1,500 more in health care costs yearly than physically active adults.¹⁴

CHALLENGES

■ Environmental and Occupational Barriers

Environmental barriers to physical activity include those related to public infrastructure, such as unsafe sidewalks and paths for walking or biking, lack of parks and recreation centers, and street-scale and neighborhood design that lacks connectivity and favors the automobile over pedestrian or public transportation. Changes over time from careers that required physical labor to more sedentary office jobs have resulted in less work-related physical activity.

■ Lack of Physical Activity Knowledge and Skills

Although policy, systems and environmental changes may result in environments that are supportive of physical activity, many people still lack the knowledge and motivation for engaging in physical activity.

■ Lack of Interventions in Home Environments

Children and adults are spending more of their leisure time at home in sedentary activities, such as TV viewing, playing video games, and using computers and other electronic devices, often because of a lack of time, low motivation and/or self-esteem, and a lack of social support. These factors linked to sedentary behavior are very difficult to change in the home environment.

■ Lack of Local Level Changes in Transportation Infrastructure

'Complete streets' legislation was enacted in the State in 2011, requiring road construction and reconstruction using Federal or State funds to accommodate all users (bicyclists, pedestrians, transit users and people of all ages and abilities, along with motorized vehicles). Encouraging multimodal transportation use reduces the likelihood of injury and makes it easier for people to choose more physically active forms of transportation. Although State legislation was enacted that impacts State-level infrastructure, challenges remain for supporting local level municipalities' adoption of 'complete streets' measures.

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(accessed April 6, 2012).

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<http://apps.nccd.cdc.gov/youthonline/App/Results.aspx?TT=F&OUT=0&SID=HS&QID=H80&LID=NY&YID=2005&LID2=NY&YID2=2009&COL=S&ROW1=N&ROW2=N&HT=&LCT=&FS=&FR=1&FG=1&FSL=1&FRL=&FGL=&PV=&TST=True&C1=2005&C2=2009&QP=L&DP=1&VA=CI&CS=Y&SYID=&EYID=&SC=DEFAULT&SO=ASC>
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Prevention Agenda Toward the Healthiest State Progress Report 2012

Tobacco

BACKGROUND

Tobacco addiction is the leading preventable cause of morbidity and mortality in NYS and in the US. Cigarette use, alone, results in an estimated 440,000 deaths each year in the US, and 25,000 deaths in NYS. There are estimated to be 570,000 New Yorkers afflicted with serious diseases directly attributable to their smoking. The list of illnesses caused by tobacco use is long and contains many of the most common causes of death. These include many forms of cancer (e.g., lung and oral), cardiovascular diseases (e.g., heart disease and stroke) and other lung diseases (e.g., chronic bronchitis and emphysema).

The economic costs of tobacco use in NYS are staggering. Smoking-attributable health care costs are \$8.2 billion annually, including \$3.3 billion in annual Medicaid expenditures. In addition, smoking-related illnesses result in \$6 billion in lost productivity. Reducing tobacco use has the potential to save NYS taxpayers billions of dollars.

Although there have been substantial reductions in adult smoking in NYS, some tobacco use disparities have become more pronounced over the past decade. Smoking did not decline among low-socioeconomic status adults and adults with poor mental health.

DATA TRENDS

Cigarette Use

Data from the NY BRFSS indicate that cigarette use among adults 18 years and older has declined significantly from 2003-2010, from 21.6 percent to 15.5 percent (Figure 1). The percentage decline was greater in NYS (29 percent decline) than in the United States as a whole (9 percent decline).

At the same time, smokers' cigarette consumption also declined significantly, from nearly 15 cigarettes daily in 2003 to just over 10 cigarettes in 2010.¹ Cigarette consumption in NYS is significantly lower than in the rest of the country (Figure 2).

Figure 1: Prevalence of Smoking among Adults Aged 18+, NYS, 2003-2010

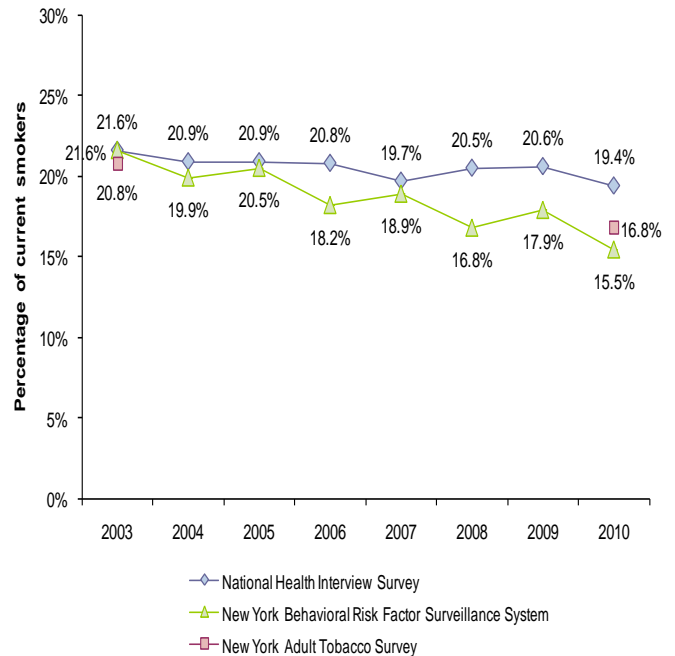
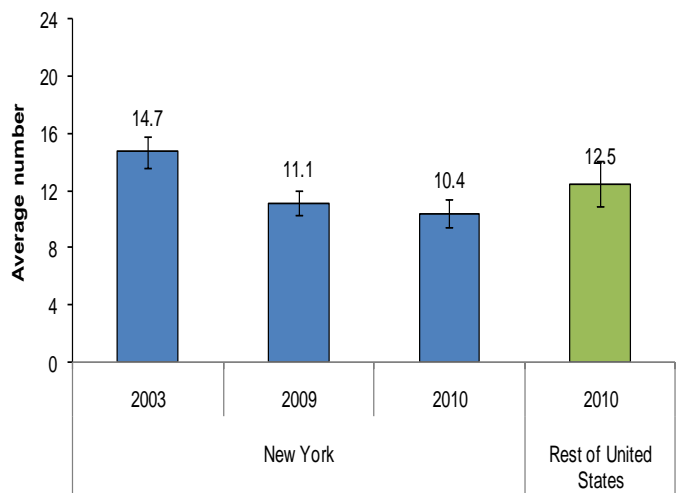


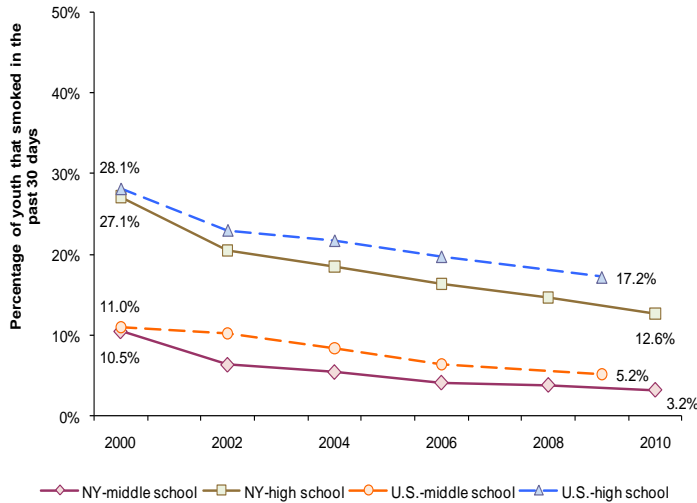
Figure 2: Mean Number of Cigarettes Smoked Per Day, NYS vs. US, 2003, 2009, 2010



Youth smoking is defined as having smoked at least one cigarette in the past 30 days. Smoking rates among NY's school-aged youth have declined dramatically since 2000. In 2010, the smoking rate among high school students was 12.6 percent, a 54 percent decline from the 2000 rate of 27.1 percent.

Smoking among middle-school students decreased by 70 percent, from 10.5 percent in 2000 to just 3.2 percent in 2010. In both instances, declines in NYS outpaced those seen nationally (Figure 3).

Figure 3: Percentage of Youth Who Smoked in the Past 30 days, NYS vs. US, 2000-2010



Other Tobacco Products

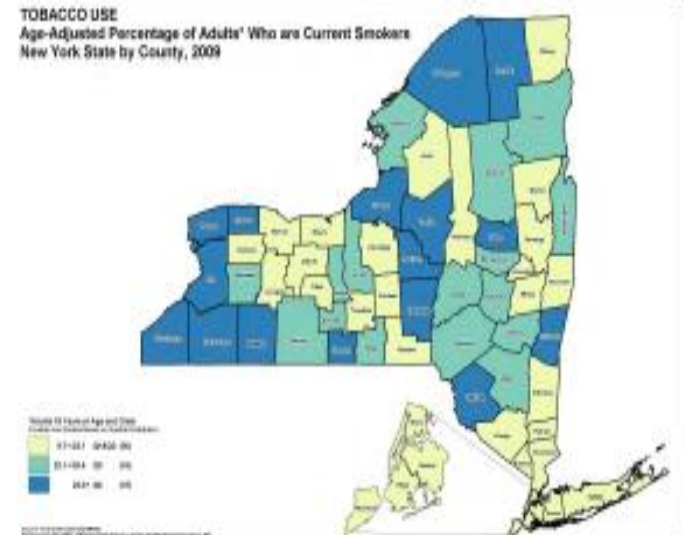
Cigarettes are not the only form of tobacco used by New Yorkers, although it is the most common. In 2010, 4.3 percent of adults smoked cigars every day or some days, compared to 6.6 percent in 2003. Less than one percent of adults reported using some form of smokeless tobacco in 2010, compared to 1.5 percent in 2000.

In contrast to the large reductions in the cigarette use by high school youth, there has been a smaller change in the use of cigars and virtually no change in the use of smokeless tobacco. In 2010, 7.9 percent of high school youth reported cigar use in the past month, compared to 11.9 percent in 2000; 5.1 percent of high school youth reported using smokeless tobacco in 2010 compared to 4.6 percent in 2000.

Geographic Variation

According to the Expanded BRFSS in 2008-2009,¹ NYC’s smoking rates are lower than in the rest of the State – 14.5 percent compared with 18.5 percent elsewhere. Outside NYC, smoking rates varied from a low of 9.5 percent in Rockland County to a high of 30.7 percent in rural Franklin County. Within NYC, Richmond County had the highest smoking rate at 19.4 percent and Queens County the lowest at 14.4 percent² (Figure 4).

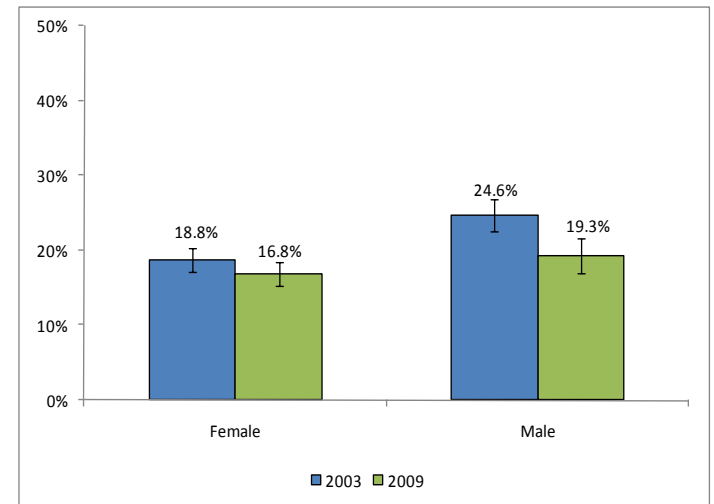
Figure 4:



Gender

Fewer adult females in NYS smoke compared with adult males, and smoking by both genders has declined over time (Figure 5). The rate for smoking among women declined from 18.8 percent in 2000 to 16.8 percent in 2009. Men showed a similar decline from 24.6 percent in 2000 to 19.3 percent in 2009.

Figure 5: Prevalence of Smoking by Gender, NYS, 2003 and 2009



Both male and female high school students experienced a greater than 50 percent decline in smoking from 2000-2010. In 2010, males (14.2 percent) had a slightly higher rate of smoking than females (11.0 percent).

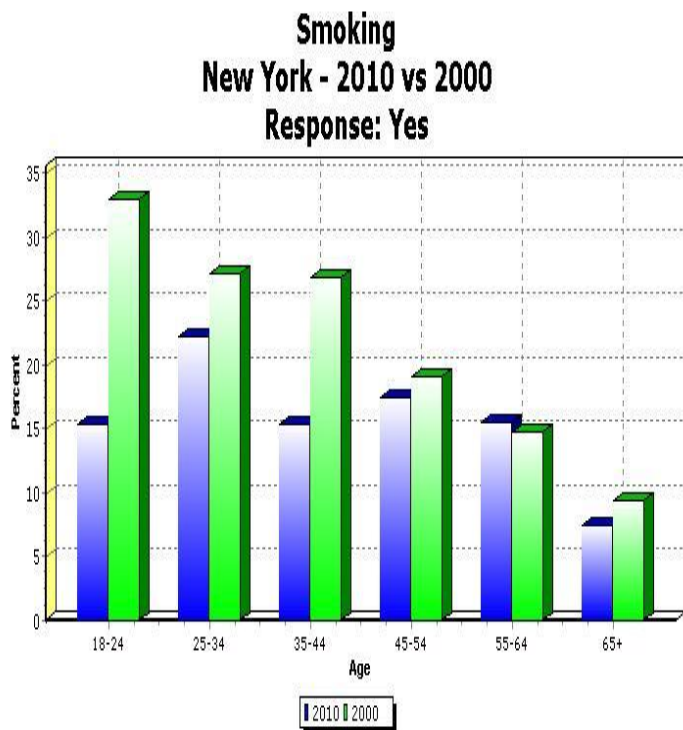
The rate of smoking among women during the last three months of pregnancy declined from 2004-2009. In 2009, the lowest rates of smoking were

seen among pregnant women of Hispanic (4.2 percent) or non-Hispanic Asian/Pacific Island (2.5 percent) origin. The highest rate of smoking during pregnancy was for White non-Hispanic females (11.6 percent). Black non-Hispanic women smoked at a moderate rate (6.2 percent).

Age

Historically, the prevalence of smoking is inversely related to age. Recent reductions in smoking among younger adults in NYS have altered this pattern, suggesting that younger smokers have benefitted more from tobacco control interventions than older smokers (Figure 6). For example, the smoking rate among 18-25 year olds decreased from 33 percent in 2000 to 15 percent in 2010. For 25-34 year olds, the smoking rate declined from 27 percent to 22 percent, and for 35-44 year olds, the rate declined from 27 percent to 15 percent. The smoking rate for adults older than 45 years barely changed from 2000 to 2010.

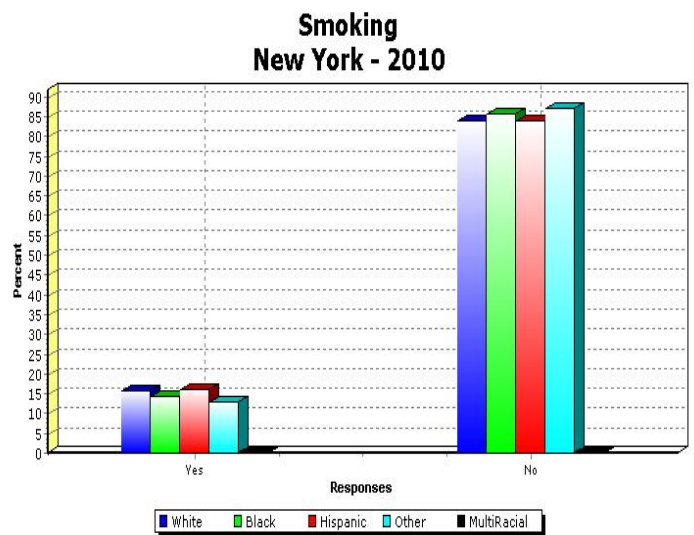
Figure 6: Prevalence of Smoking by Age Group, NYS, 2000 vs. 2010



Race and Ethnicity

There are only small differences in the adult smoking rates in NYS by race and ethnicity (Figure 7). The 2010 smoking rate among White non-Hispanic and Hispanic adults was about 16 percent, with 14 percent for Black non-Hispanics. The high-school smoking rates declined by more than 50 percent for all racial/ethnic groups. In 2010, high-school youth smoking rates were highest among White non-Hispanics (16 percent) and lowest among Black non-Hispanics (6 percent). The rate for Hispanic youth was 11 percent.

Figure 7: Prevalence of Smoking by Race and Ethnicity, NYS, 2010



Income and Education

Rates of smoking vary by socio-demographic factors, including income and education. Similar to age, smoking rates are typically related inversely to income (Figure 8). In 2010, rates of smoking among those earning more than \$50,000 annually were about 12 percent, compared with 20 percent for those earning less than \$30,000 per year.

Having less education is a risk factor for being a smoker. Rates of smoking in those with a high school education or less were 22 percent or higher. The rate among people with some college education was 18 percent, dropping to 8.2 percent for those with a college degree. Overall, the rates for those with high school or higher education declined an average of 27 percent between 2000 and 2010. The rates for those with less than a high

school education did not change during this time (Figure 9).

Figure 8: Prevalence of Smoking by Income Category, NYS, 2000 and 2010.

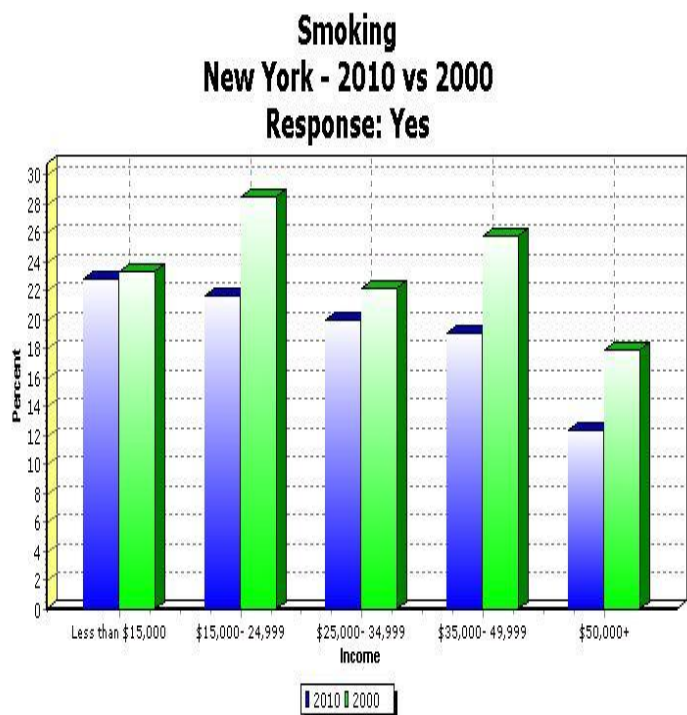
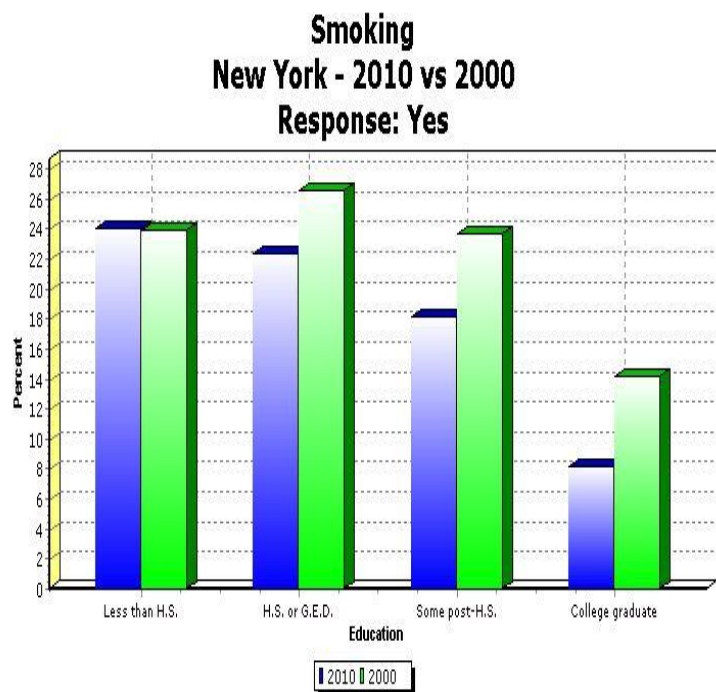


Figure 9: Prevalence of Smoking by Educational Attainment, NYS, 2000 and 2010



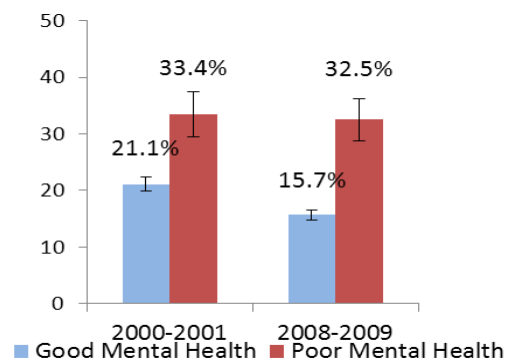
Mental Health

There is strong evidence that smoking is associated with mental health diagnoses, including depression and schizophrenia. Smoking may be associated with self-reported mental health problems.

Respondents to the Adult Tobacco Survey³ were asked whether they experienced problems with stress, depression or emotional issues. Those who reported these problems more than 14 days during the past month were designated as having “poor mental health.” “Good mental health” was defined as reporting problems on fourteen or fewer days in the past month.

The prevalence of cigarette smoking among NYS adults reporting good mental health significantly declined between 2000-2001 (21.1 percent) and 2008-2009 (15.7 percent), a 26 percent decline. There was no change in smoking prevalence among NYS adults reporting poor mental health during that same time-period (Figure 10). The rate of smoking among those reporting poor mental health (32.5 percent) was twice the rate of smoking among those reporting good mental health (15.7 percent) in 2008-2009.

Figure 10: Prevalence of Smoking by Mental Health Status, NYS, 2000-2001 and 2008-2009



Health Effects

Today, smoking is the leading preventable cause of death in the United States. In 1964, the Surgeon General first documented the harmful effects of smoking in *Smoking and Health: Report of the Advisory Committee of the Surgeon General of the Public Health Service*, which summarized the state of the scientific knowledge regarding tobacco use at that time.⁴ Research since then has firmly established that smoking and other forms of

tobacco consumption cause enormous of health problems, and related death and suffering. Despite numerous reports by the Surgeon General and the National Institutes of Health on the risks of smoking, 46 million Americans smoke⁴; and approximately half of all continuing smokers will die prematurely as a result of their addiction.

Smoking is responsible for 87 percent of lung cancer deaths (90 percent in men, 80 percent in women).⁵ More than 125,000 men and women die of lung cancer caused by smoking each year.⁶ Besides lung cancer, 30 percent of all cancer deaths are due to smoking.⁷ Smoking is a known cause of cancer of the lung, larynx, oral cavity, bladder, pancreas, uterus, cervix, kidney, stomach and esophagus.⁸ In addition to cancers, smoking causes cardiovascular disease and many respiratory diseases, such as chronic obstructive pulmonary disease, which includes emphysema and chronic bronchitis.

The scientific evidence on the health risks from exposure to secondhand smoke is also clear, convincing and overwhelming. Secondhand smoke is a known cause of lung cancer, heart disease, low birth weight, chronic lung ailments and other health problems. According to the CDC, nearly 50,000 Americans die each year from lung cancer and heart disease attributable to secondhand smoke exposure.⁹

DISPARITIES

Although there have been substantial reductions in adult smoking, certain disparities became more pronounced over the past decade as rates of smoking did not decline among low-socioeconomic

status adults and adults with poor mental health. From 2000-2010, the overall adult smoking rate dropped from 21.6 percent to 15.5 percent – a relative decline of 29 percent in adult smoking. At the same time, smoking prevalence was unchanged among adults with household incomes of less than \$15,000 (23.3 percent to 22.8 percent) and those with less than a high school education (23.9 percent to 24.0 percent). Smoking prevalence among individuals with poor mental health experienced only a modest reduction (35.8 percent to 32.5 percent).

CHALLENGES

- In 2008, tobacco companies spent \$10.5 billion nationally on marketing – more than the amount spent to market junk food, soda, and alcohol combined. At least 90 percent of tobacco industry marketing, or \$9.8 billion, goes to the retail environment for tobacco advertising, product placement, incentives to retailers and price discounts and other promotions. In addition, the tobacco industry attempts to delay implementation of effective tobacco control policies through legal challenges that drain state and community resources and undermine public health.
- Nicotine is a highly addictive drug. Three-in-four adult smokers want to quit and half have tried to quit but relapsed in the past year. Many people use tobacco products to self-medicate for depression and stress, and it is no surprise that rates of tobacco use are much higher among individuals in the lowest socioeconomic groups.

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Prevention Agenda Toward the Healthiest State
Progress Report 2012
Adolescent Pregnancy

BACKGROUND

Adolescent pregnancy is a significant public health problem facing NYS, with 50.2 of every 1,000 15- to 19-year-old females becoming pregnant each year.¹ Pregnancy at too early an age interrupts and disrupts normal adolescent development and often results in significant academic, social and economic costs for the mother, father and child. Adolescent mothers are more likely to drop out of school, remain unmarried and live in poverty. Adolescent fathers are more likely to have lower economic stability, income and educational attainment, and more turbulent relationships. Children born to single adolescent mothers have more emotional and behavioral problems, worse physical health, are more likely to use drugs, tobacco, alcohol, and enter the juvenile justice system, and are less likely to do well in school. The lost social, educational and vocational opportunities, and perpetual poverty for teen mothers or fathers, becomes intergenerational and shapes personal development, relationships, careers and educational prospects.²

Negative sexual health outcomes have long-lasting impacts on teens, families, communities and on society as a whole. In addition to the social costs associated with teen childbearing, there are significant economic costs. According to a study by the National Campaign to Prevent Teen and Unintended Pregnancy, NYS spent \$663 million in 2008 on costs related to children born to teen mothers³ – including health care, child welfare, incarceration and lost tax revenue due to decreased earning and spending.

BURDEN and DATA TRENDS

Adolescent Risk Behaviors

The behaviors associated with adolescent sexual activity put teens at elevated risk for becoming pregnant, acquiring sexually transmitted infections, and experiencing negative social and psychological outcomes. There is a relationship between age of

sexual initiation, number of partners, frequency of sexual activity, history of sexual abuse, and other risk factors particular to adolescents.²

In 2009, the NYS Youth Risk Behavior Survey documented that:

- On average, 42.0 percent of all students in ninth through the 12th grades have had sexual intercourse. That percentage increased with age, from 26.4 percent of ninth graders to 61.8 percent of 12th graders. Although these numbers are cause for great concern, they are lower than the national average of 31.6 percent of ninth graders and 62.3 percent of 12th graders.
- About one-third (31.5 percent) of high school students described themselves as sexually active, compared to 34.2 percent nationally.
- Black non-Hispanic high school students were the most likely to report ever having had sexual intercourse (51.7 percent), followed by students who are Hispanic (48.2 percent), White non-Hispanic (39.9 percent) or Asian non-Hispanic (13.8 percent). These rates are similar to 2007 rates.
- Although 58.0 percent of high school students in 2009 reported they have never had sexual intercourse, 8.8 percent of male students and 3.3 percent of female students reported having their first sexual intercourse before age 13.
- Often, there is a significant period of time between initiation of sexual intercourse and the choice and utilization of an effective method of contraception.
- Only 17.0 percent of high school students reported using birth control pills during their last sexual intercourse.
- In 2009, the percentage of sexually active teens reporting condom use during their last sexual intercourse was 67.7 percent, up from 63.3

percent on the 1999 survey, but below the 70.7 percent reported in the 2005 survey.

- The use of alcohol is generally associated with reduced inhibitions and ineffective use of contraceptives. In 2009, 26.8 percent of teen male respondents and 17.7 percent of teen female respondents reported alcohol or drug use at the last sexual intercourse. These proportions are similar to those in 2007 (26.8 percent for males and 19.3 percent for females).

Besides pregnancy, sexual activity can lead to sexually transmitted diseases (STDs). STD rates remain highest in the 15-24 year old population, with about one of every two sexually active persons having a STD by age 25. The incidence of *Chlamydia* and gonorrhea per 100,000 young people aged 10-14 years was 75.7 and 11.8, respectively, in 2009. Among 15-19 year olds, the *Chlamydia* and gonorrhea rates rose to 2,170.0 and 319.1 per 100,000, respectively. The dramatic rise of STD rates among adolescents is striking, highlighting the need to address the consequences of sexual activity at an early age. Because teen pregnancy and STDs share some of the same risk factors, prevention strategies targeting these factors should be considered.

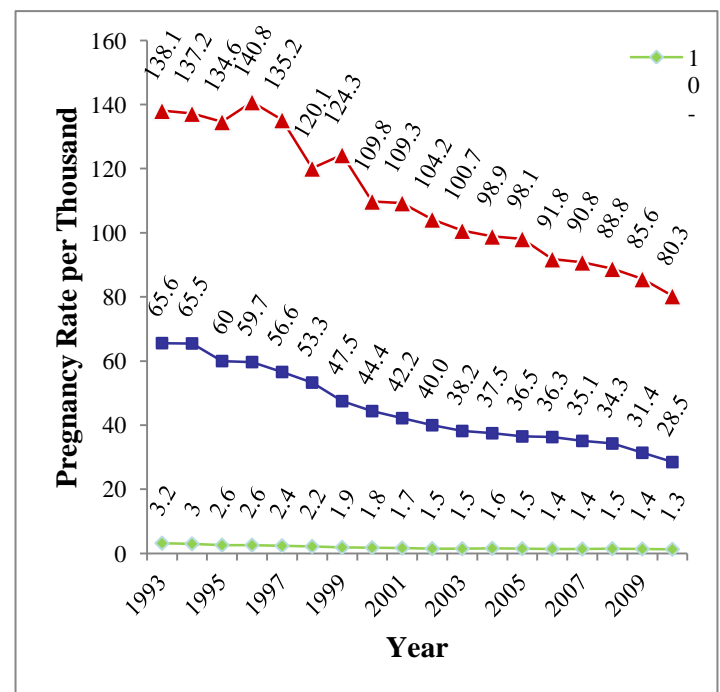
The CDC data, in 2010, indicated persistent racial disparities in STD rates, with Black non-Hispanics bearing the heaviest burden.⁴ Nationally, Black non-Hispanic and Hispanic youths comprised nearly 60 percent of teens who gave birth in 2009, though they were just 35 percent of the total female population aged 15-19 years.⁴ The US Department of Health and Human Services acknowledges little data is available on the prevalence of STDs among people with disabilities, but believes that the rate could be as high as that in the general population. An analysis of the 2002 National Longitudinal Study of Adolescent Health conducted by Cheng and Udry⁵ found that, on average, 43.2 percent of students with disabilities in grades seven through 12 were sexually active.

In 2009, there were 181 newly confirmed cases of HIV infection among people aged 13-19 years in the State.⁶ During the same period, 75 AIDS cases were diagnosed among persons in this same age group. Delays in treatment for an STD may increase the chances of passing it to others, may cause difficulty getting pregnant in the future, and increases the probability of brain damage, heart disease, cancer or death.

Teen pregnancy

Adolescent pregnancy rates declined significantly from their peak in 1993-2010, especially among teens aged 18-19 years (Figure 1).

Figure 1: Adolescent Pregnancy Rates per Thousand by Age Group, NYS, 1993-2010

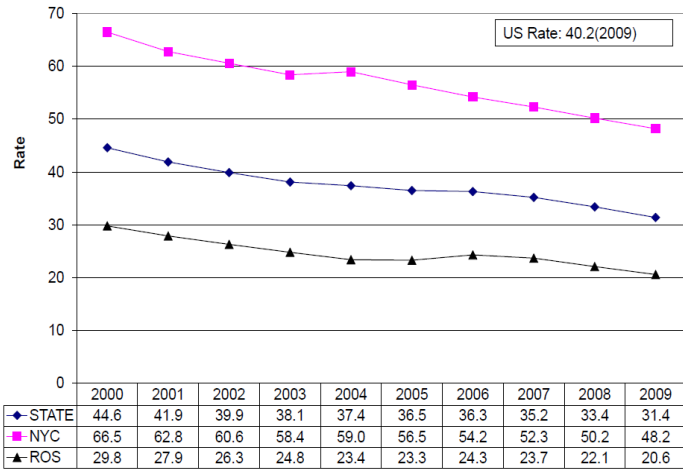


SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

The number of teen pregnancies per 1,000 females declined steadily from 2000 to 2009 (Figure 2).

Figure 2:

Teen (Age 15-17) Pregnancies per 1,000 Age 15-17 Females, New York State Regions, 2000-2009



SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

The rate has consistently been higher in NYC than the rest of the State, although the difference has narrowed. NYS's teen pregnancy rate was lower than the national rate in 2009.

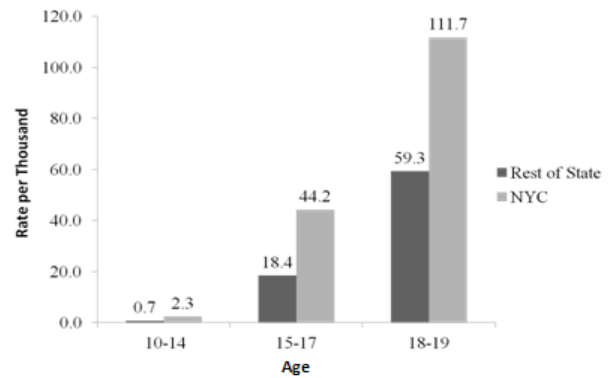
DISPARITIES

NYS continues to have striking regional and racial/ethnic disparities in teen pregnancy rates. Pregnancy and birth rates among adolescents are higher in NYC and in specific upstate communities (Figures 3 and 4). Pregnancy rates in NYC are at least twice as high as in the rest of the State

Adolescent pregnancy rates are among the most racially and ethnically disparate public health outcomes that NYSDOH monitors.

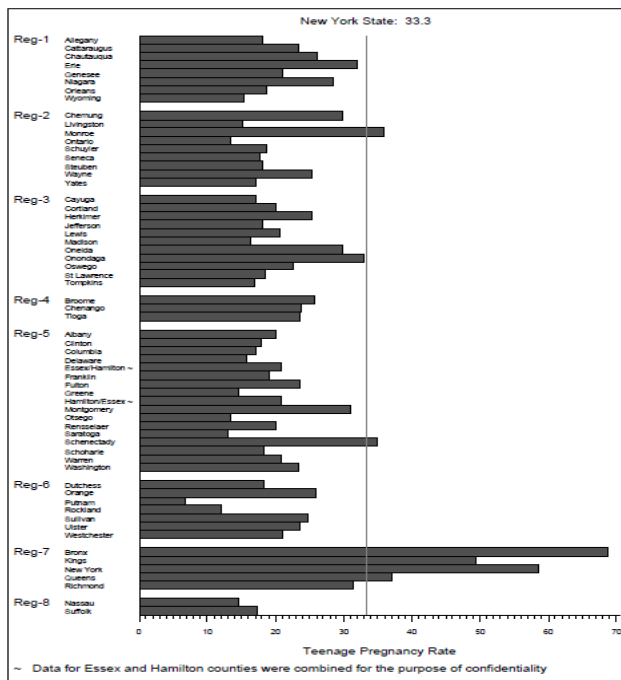
Figure 3:

Adolescent Pregnancy Rates Per Thousand by Region and Age Group, New York State, 2010

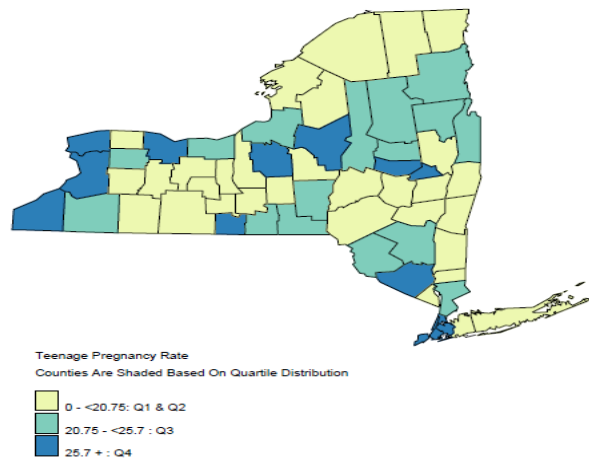


SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Figure 4:



Teenage Pregnancies (Age 15-17) Rate Per 1,000 Females Age 15-17 2007-2009

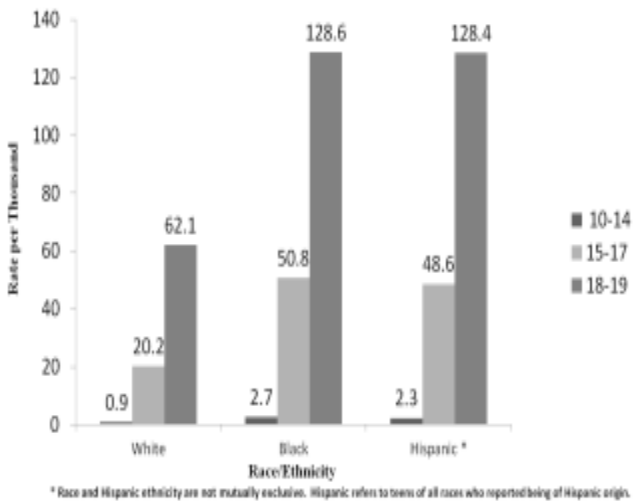


Source: Vital Statistics

SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Teen pregnancy rates are consistently almost three times higher for Black non-Hispanic and Hispanic teens than for White non-Hispanic teens. Racial and ethnic disparities in teen pregnancy rates continue, although the actual magnitude of the disparities is decreasing. In 2010, the White non-Hispanic teen pregnancy rate was 21.3 per 1,000 females aged 15-17, much lower than the rate for Black non-Hispanic (59.1) and Hispanic (48.6) females aged 15-17 (Figure 5).

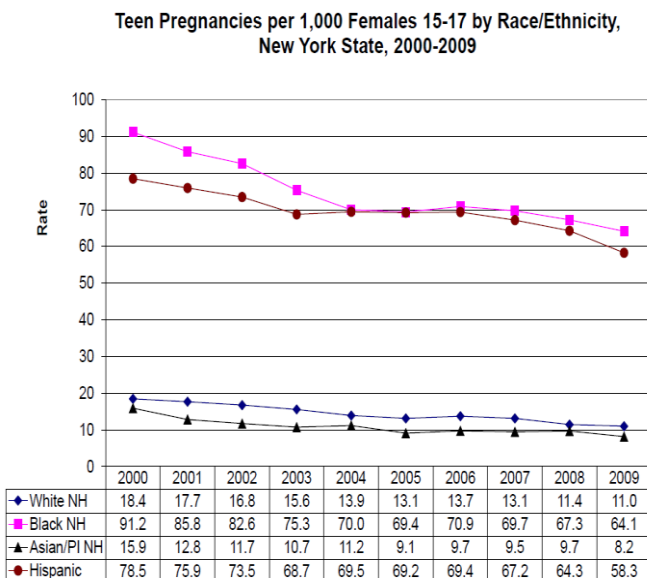
Figure 5: Adolescent Pregnancy Rates per Thousand by Race/Ethnicity and Age Group, NYS, 2010



SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

However, rates for all race/ethnicity groups continue to decline. (Figure 6)

Figure 6:



SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

As the risk factors in a teen's life increase and the protective factors decrease, there is an increased risk for becoming pregnant, causing a pregnancy or contracting an STD.⁷ Factors found to be most influential on teens' sexual behavior include environmental factors, such as the community in which a teen lives, and interpersonal factors (e.g., family members, peers, best friends and romantic partners). Teens living in disorganized communities and areas with higher rates of substance abuse, violence and poverty are more likely to begin having sex early and to have a child. Family characteristics, such as divorce or separation, as well as less educated parents who live in poverty, have been shown to increase the risk of teens initiating sex at an earlier age.

RISK AND PROTECTIVE FACTORS

Sexual behavior is one of many areas in which teens are influenced by their best friends and peers. Teens are more likely to have sex if their best friends and peers are older, use alcohol or drugs, or engage in other risky behaviors. Similarly, they are more likely to have sex if they believe their friends have more positive attitudes toward childbearing have permissive values about sex or are actually having sex. Having an older romantic partner increases the risk of sexual activity, can decrease the chances that contraception will be used, and increases the chances of pregnancy and contracting an STD.

Many individual factors have been found to influence teens' sexual behaviors. These include biological factors; race and ethnicity; connection to family, school, religious or other organizations, or adults in their community; doing well in school; alcohol and drug use; involvement in gangs; aggressiveness; and sensation-seeking or problem behavior.

The greater the number of assets a young person has, the more likely he/she will experience positive outcomes, and the less likely he/she will engage in risky behaviors.⁸ Adolescents involved in sexual risk-taking that results in pregnancy or STDs are often involved in other risky behaviors. Although adolescents may know how to prevent pregnancy and have access to contraception, they may still

engage in risky sexual behavior. The connection between youth, family, school and the community is critical in fostering a sense of self-worth and a promising future to motivate adolescents to avoid risky behaviors. Programs with opportunities for youth to develop assets ultimately help them make the transition into adulthood. Adolescents who are pregnant and/or parenting may need additional supports to continue normal adolescent development. Among adolescents with disabilities, physical and sexual maturation usually parallels that of their peers without disabilities. Yet, delayed emotional and cognitive development may require targeted supports and approaches to enable achievement of critical developmental tasks related to sexuality.

CHALLENGES

Adolescent health issues are rapidly emerging and changing. Examples of challenges for youth and youth-serving providers include:

- Immigrant populations have increased and dramatically expanded beyond NYC, creating increasingly diverse populations in communities.

- Technology has changed the way youth communicate and receive health information and has increased exposure to negative health images and messages.
- Adolescents are identifying themselves as lesbian, gay, bisexual or transgender at younger ages, leading to challenges for community health care providers to provide critical support and linkages for teens and their families.
- Adolescents with disabilities are becoming integrated into the larger community and engage in typical activities of this life stage. However, peer, provider and societal attitudes have lagged in the recognition and support of these individuals.

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Adverse Birth Outcomes

BACKGROUND

Improving maternal, infant and child health and reducing health disparities are priorities for NYS. Key population indicators of maternal and infant health, including early entry into prenatal care, low birth weight, prematurity and maternal mortality, have not improved significantly over the last decade in NYS, and outcomes for some indicators have worsened.

The costs of adverse birth outcomes for both individuals and society are significant. The cost of premature births alone in the US was estimated to be \$26.2 billion in 2005.¹ In NYS, of all 246,592 infants born in 2009, 28,979 or 11.8 percent were premature (less than 37 weeks gestational age); 20,226 (8.2 percent) were low birth weight (under 2,500 grams) and 1,296 (0.5 percent) died before their first birthdays.

DATA TRENDS

Early Entry to Prenatal Care

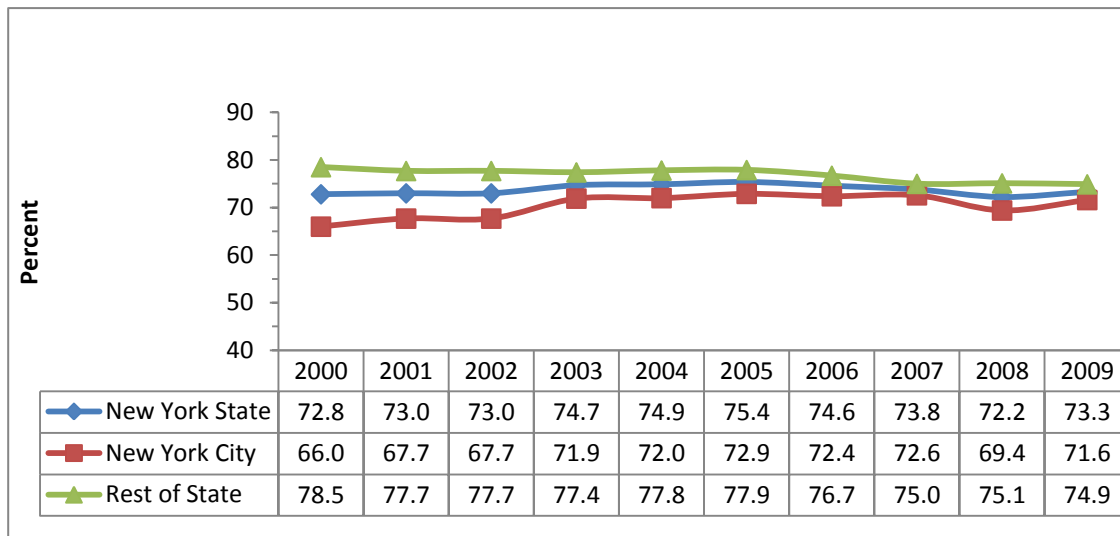
Early prenatal care is pregnancy-related care beginning in the first trimester. Early prenatal care can significantly improve pregnancy outcomes for infants and mothers. Mothers who do not receive prenatal care are three times more likely to have babies with low birth weight. Their babies are five times more likely to die than those whose mothers received prenatal care.² In 2009, 73.3 percent of women giving birth in NYS received early prenatal care, an increase of about 0.7 percent from 2000 (Figure 1). The rate was consistently higher outside NYC, although the regional difference narrowed

over the last decade. NYC rates of early entry to prenatal care improved by about 8 percent during that time (from 66.0 percent to 71.6 percent), while rates for women in the rest of the State fell off slightly (from 78.5 percent to 74.9 percent), resulting in less regional disparity.

During the past decade, early prenatal care for White non-Hispanic women slightly decreased from 82.0 percent in 2000 to 80.8 percent in 2009 (Figure 2). Early prenatal care among Black non-Hispanic and Hispanic women peaked in 2005, followed by a decrease. The percentage of early prenatal care for Asian/Pacific Islander non-Hispanic, American Indian/Alaska Native non-Hispanic, and Hispanic women has increased overall.

Racial and ethnic differences persist in rates of prenatal care, but have narrowed. A decade ago, the rate of early prenatal care for White non-Hispanics was almost one-third higher than for Black non-Hispanic or Hispanic women. In 2009, more White non-Hispanic women received early prenatal care (80.8 percent), followed by Asian/Pacific Islander non-Hispanics (73.2 percent), Hispanics (65.8 percent), American Indian/Alaska Native non-Hispanics (65.5 percent), and Black non-Hispanics (62.1 percent). Still, the gap between the lowest and highest rates was almost 20 percentage points.

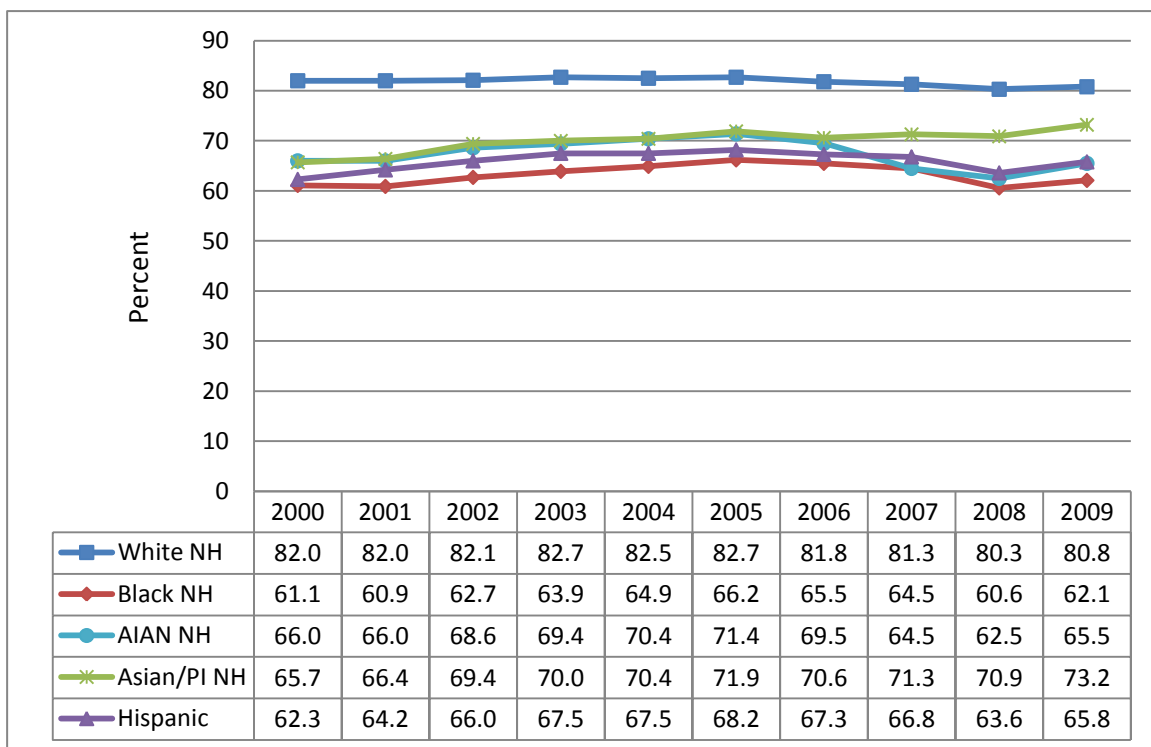
Figure 1: Percentage of women giving birth who received early (first trimester) prenatal care for NYS, NYC and Rest of the State, 2000-2009



*During the first trimester; women with unknown entry into prenatal care were excluded.

SOURCE: New York State Department of Health, Bureau of Biometrics and Health Statistics

Figure 2: Percentage of births receiving entry* prenatal care by race/ethnicity for NYS, 2000-2009



*During the first trimester; women with unknown entry into prenatal care were excluded.

Abbreviations: NH – non-Hispanic; AIAN – American Indian Alaska Native (non-Hispanic); PI – Pacific Islander (non-Hispanic)

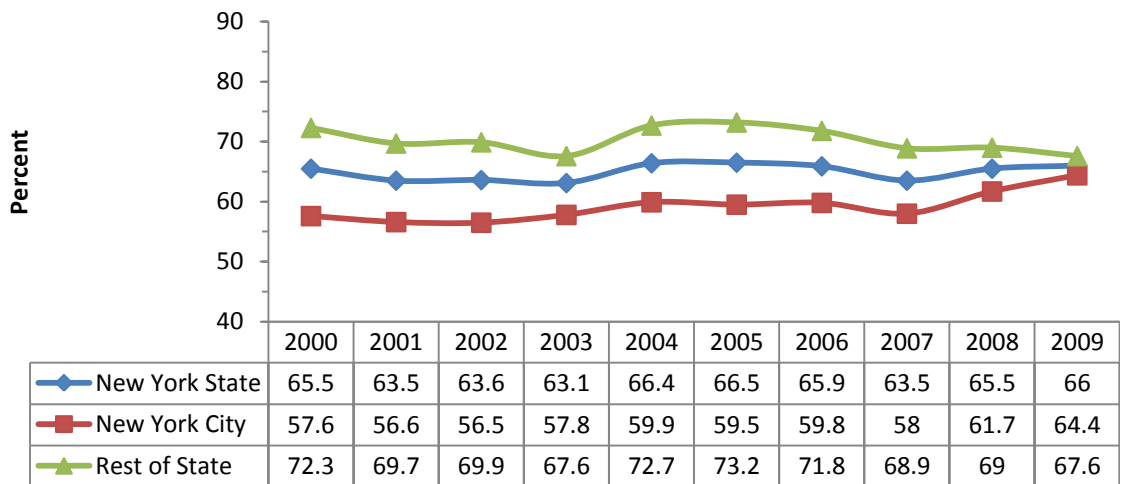
SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Adequacy of Prenatal Care

The Kotelchuck Index is a calculation of the number of prenatal care visits among pregnant women aged 15-44 who had a live birth during the reporting year, expressed as a percentage of the observed-to-expected number of prenatal visits. For each mother, adequate prenatal care is defined as completion of greater than 80 percent of expected visits, based on when she begins prenatal care.

The Kotelchuck index for NYS women in 2009 was 66.0 percent (Figure 3), a slight increase from 65.5 percent in 2000. Indices were higher among women living outside NYC (67.6 percent) than NYC residents (64.4 percent). From 2000-2009, the adequacy of prenatal care improved in NYC while declining in the rest of the State, reducing geographic disparities.

Figure 3: Adequacy of prenatal care as demonstrated by Kotelchuck Index for NYS births by region, 2000-2009

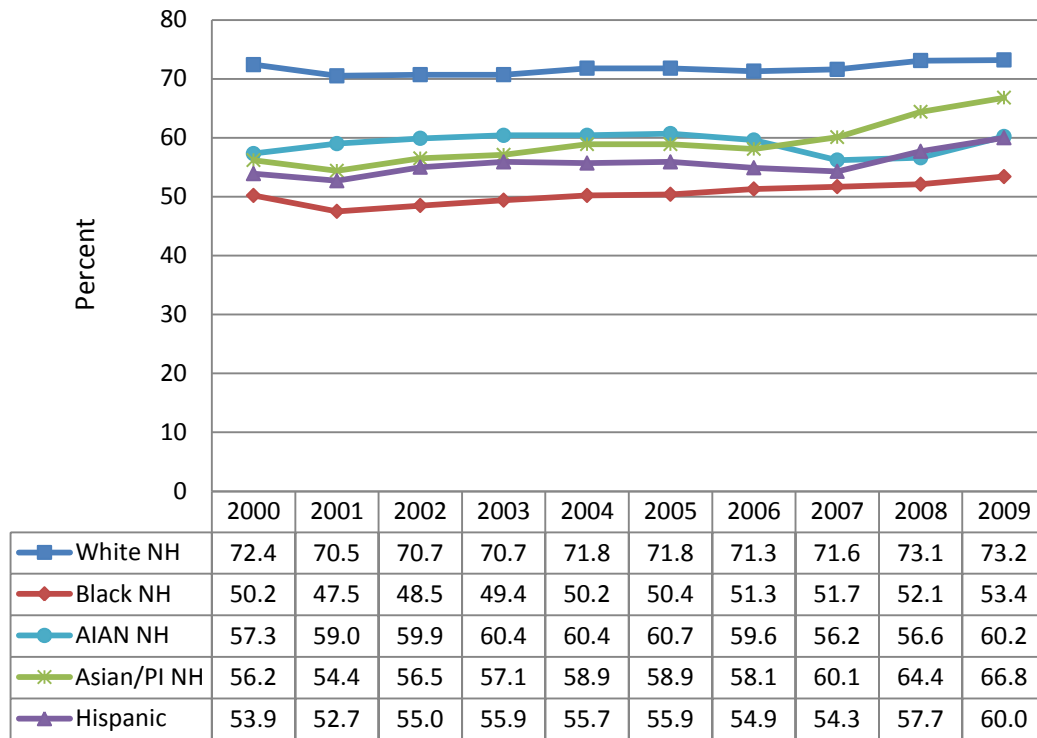


SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

The Kotelchuck Index increased over the past decade for all racial and ethnic groups in NYS, especially from 2006-2009 (Figure 4). White non-Hispanic women consistently had the highest rate of adequate prenatal care, followed by

Asian/Pacific Islander non-Hispanics and American Indian/Alaska Native non-Hispanics. Black non-Hispanic women were the least likely to receive adequate prenatal care during the past decade.

Figure 4: Percentage of births with adequate prenatal care (Kotelchuck Index) by race/ethnicity for NYS, 2000-2009



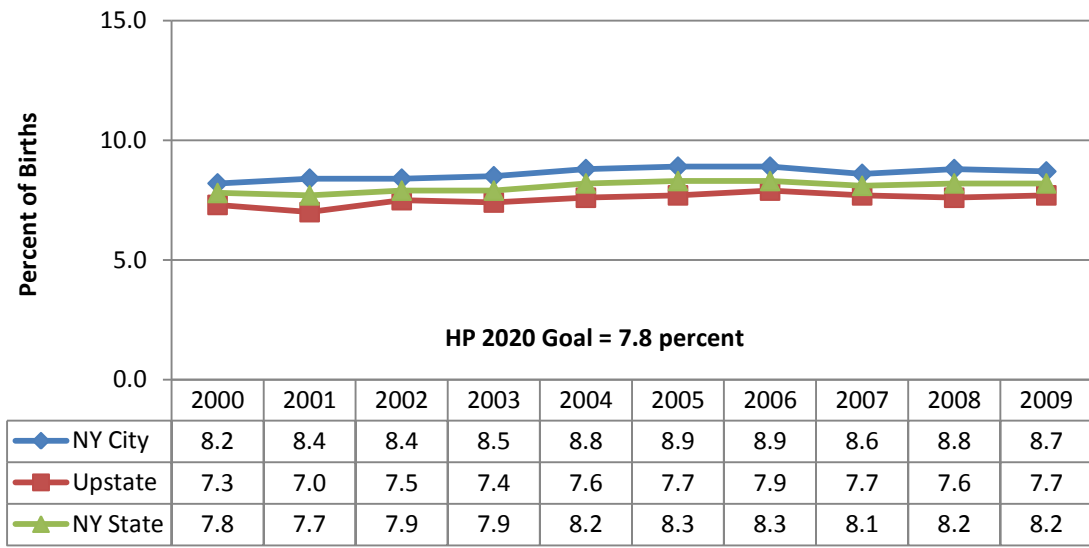
Abbreviations: NH – non-Hispanic; AIAN – American Indian Alaska Native; PI – Pacific Islander
 SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Low Birth Weight

Infants weighing less than 2,500 grams at birth are at a greater risk of death within their first months, as well as at increased risk for developmental disabilities and illness throughout their lives. The percentage of infants with low birth weight rose

from 2000 through 2009 in all regions, yet the statistics have been consistently higher in NYC compared to rest of the State (Figure 5). In NYC, the low birth weight rate in 2009 was 8.7 percent, compared to 7.7 percent in the rest of the State.

Figure 5: Percentage low birth weight (<2.5 kg.) for NYS, NYC and Rest of the State, 2000-2009

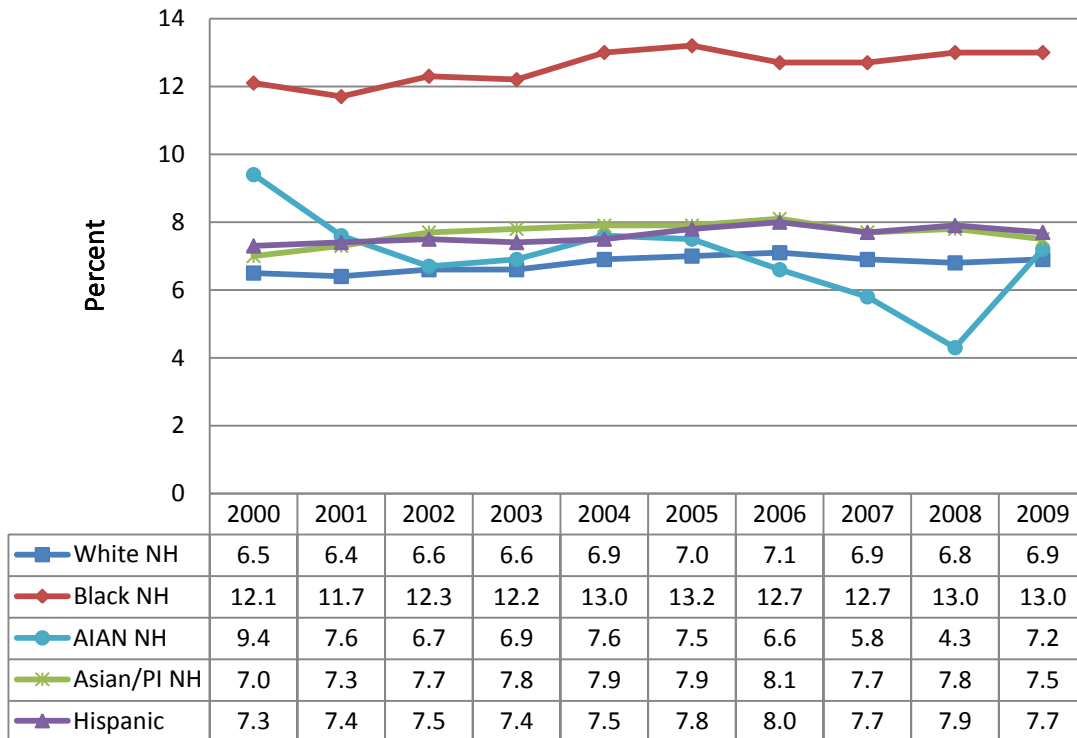


SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Over the past decade, the percentage of low birth weight infants among Black non-Hispanic mothers was the highest of all racial/ethnic groups, and rose from 12.1 percent in 2000 to 13.0 percent in 2009 (Figure 6). In 2009, Black non-Hispanic mothers had nearly twice the percentage of low birth weight births (13.0 percent) than White non-

Hispanics, Asian/Pacific Islander non-Hispanics, and Hispanics (6.9 percent, 7.5 percent and 7.7 percent, respectively). The percentage of low-weight births among American Indian/Alaskan Native non-Hispanics was unstable due to the small number of births.

Figure 6: Percentage of births under 2,500 grams by race/ethnicity for NYS, 2000-2009



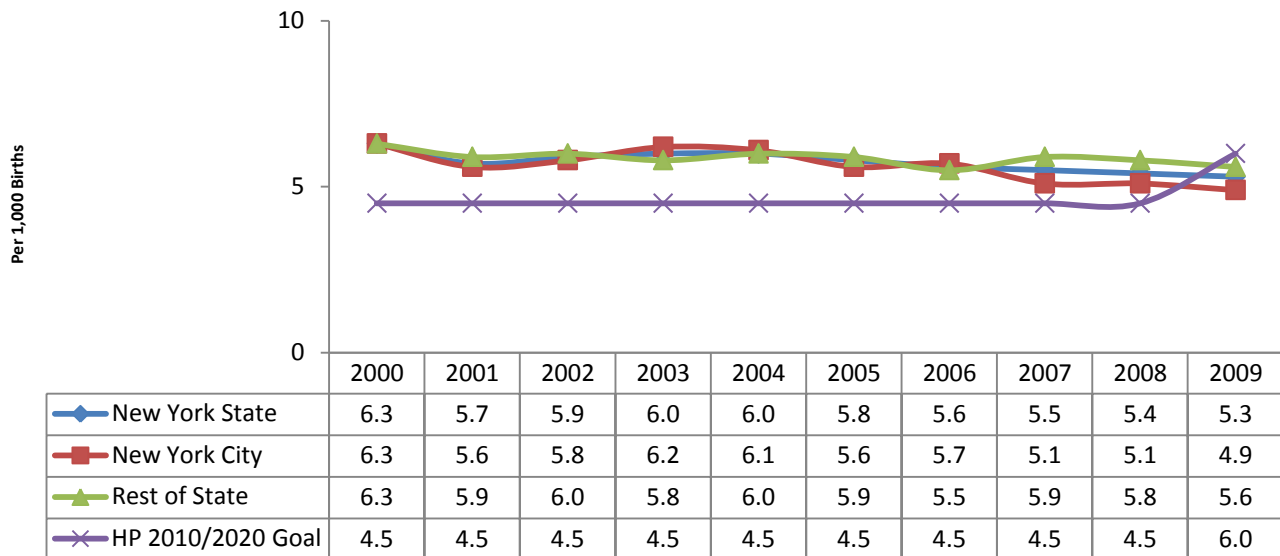
Abbreviations: NH – non-Hispanics; AIAN – American Indian Alaska Native; PI – Pacific Islander
 SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

Infant Mortality

Infant mortality is one of the most widely used indicators of the health and welfare of a population because it reflects the general state of maternal health and effectiveness of primary health care. Infant mortality is related to mothers' health, prenatal care, the quality of health services, socioeconomic status and other factors. As shown

in Figure 7, the infant mortality rate in NYC decreased from 5.1 deaths per 1,000 live births in 2008 to 4.9 deaths per 1,000 live births in 2009, a record low for NYC. In the rest of the State, the rate also decreased slightly, from 5.8 deaths per 1,000 live births in 2008 to 5.6 deaths per 1,000 live births in 2009.

Figure 7: Infant mortality rate for NYS, NYC and Rest of the State, 2000-2009



Healthy People 2010 Goal (2000-2008) / Healthy People 2020 Goal (2009)

SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

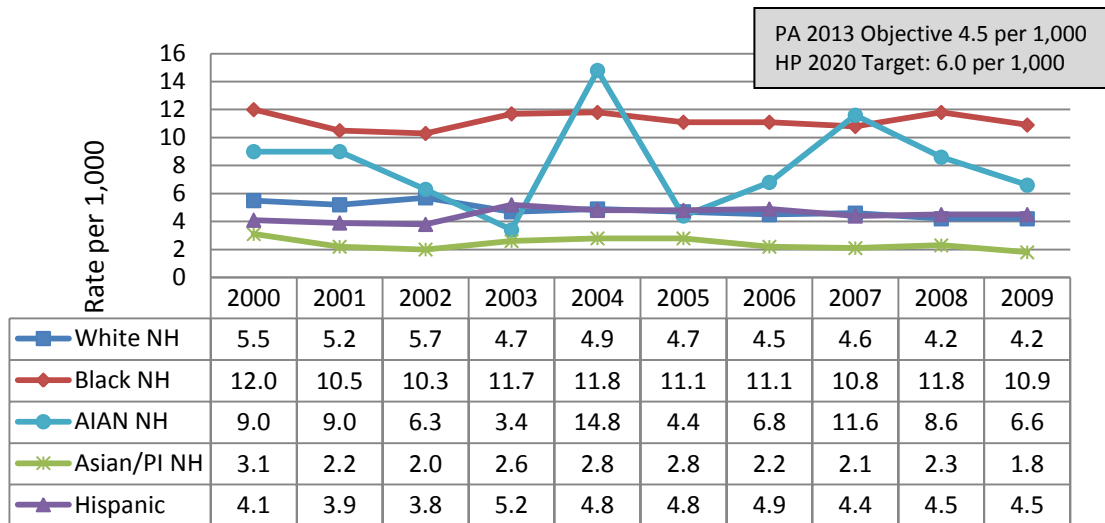
For the past decade, infant mortality remained higher in Black non-Hispanic infants than non-Hispanic White and non-Hispanic Asian/Pacific Islanders. While the infant mortality rate among the White non-Hispanics population declined steadily, the rate among Black non-Hispanic infants fluctuated.

In 2009, infant mortality among Black non-Hispanics (10.9 per 1,000) was more than double

the rate among White non-Hispanic (4.2 per 1,000) and Hispanic (4.5 per 1,000) infants and six times the rate among Asian/Pacific Islander non-Hispanics (1.8 per 1,000).

The infant death rate among American Indian/Alaskan Native non-Hispanics fluctuated due to incomplete reporting and the small numbers of infant deaths and births.

Figure 8: Infant mortality rate per 1,000 live births by race/ethnicity for NYS, 2000-2009



Abbreviations: NH – non-Hispanics; PI – Pacific Islander., PA – Prevention Agenda, HP – Healthy People
 SOURCE: NYSDOH, Bureau of Biometrics and Health Statistics

DISPARITIES

There are striking and persistent racial, ethnic and economic disparities in birth outcomes. Even when trends are improving, such as adolescent pregnancy rates and infant mortality rates, there are significant disparities (Table 1). For example, in

2009, 13 percent of Black non-Hispanic infants were born with low birth weight, compared to 6.9 percent of White non-Hispanic infants and 7.7 percent of Hispanic infants.

Table 1: Indicators for tracking progress in addressing public health priority area: Healthy Mothers, Healthy Babies, and Healthy Children

Indicator	Prevention Agenda 2013 Objective	US	NYS	White non-Hispanic	Black non-Hispanic	Asian non-Hispanic	Hispanic
HEALTHY MOTHERS/ HEALTHY BABIES/HEALTHY CHILDREN							
% early prenatal care (1 st trimester)*	90%†	69.0% (2007)	73.3% (2009)	80.8% (2009)	62.1% (2009)S	73.5% (2009)	65.8% (2009)
% low birth weight* (births <2,500 grams)	5%†	8.2% (2009)	8.2% (2009)	6.9% (2009)	13.0% (2009)	6.3% (2009)	7.7% (2009)
Infant mortality (per 1,000 live births) **	4.5 †	6.4 (2009)	5.3 (2009)	4.2 (2009)	10.9 (2009)	2.4 (2009)	4.5 (2009)

SOURCES: *NYS Births: NYSDOH, Bureau of Biometrics and Health Statistics; US Data: CDC, National Vital Statistics Reports, Volume 59, Number 03 Births: Preliminary Data for 2009 http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_03.pdf

**NYS_Deaths: NYSDOH, Bureau of Biometrics and Health Statistics; US Data: CDC, National Vital Statistics Reports, Volume 59, Number 04 Deaths: Final Data for 2009, http://www.cdc.gov/NCHS/data/nvsr/nvsr59/nvsr59_04.pdf.

† Healthy People 2010 Goal utilized

CHALLENGES

Adverse birth outcomes result from complex medical, psychological, social, economic and environmental factors that can present significant public health challenges to a state as diverse as NYS. Poor pregnancy outcomes, including premature births, low birth weight and infant mortality, are associated with late or no prenatal care, low intake of folate, unplanned pregnancy, cigarette smoking, alcohol and other drug use, lack

of breastfeeding, being HIV positive, short inter-pregnancy spacing, chronic diseases, obesity, depression, maternal age, poor nutrition and low socioeconomic status. Reducing these risk factors, which many are also linked to other adverse outcomes, will require a comprehensive approach targeting various sectors using evidence-based strategies

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Tooth Decay

BACKGROUND

Tooth decay (dental caries) is a multi-factorial, diet-dependent and salivary-mediated disease that is chronic, cumulative and infectious.¹ Diets high in sugar, the flow and composition of saliva, and bacterial flora of the mouth contribute to caries risk. *Streptococcus mutans* is the predominant bacterium implicated in dental caries disease.

Tooth decay is the most common chronic childhood disease,²⁻⁴ with almost 80 percent of children experiencing tooth decay by high school graduation.⁵ However, the extent of tooth decay is more severe in about 25 percent of children. Applying national estimates to NYS population counts,⁶ approximately 3,457,050 children in the State will experience tooth decay by high school graduation. If left untreated, caries disease can cause significant oral and systemic problems, including impaired physical growth, eating difficulties, altered speech, tooth loss, pain, infection, difficulties in concentration and learning, missed school days, lowered self-esteem and reduced capacity to socialize.²⁻⁴

American school aged children annually lose more than 51 million school hours due to dental-related illness.^{5,7,8} The cost of dental care can be significant, accounting for almost 15 percent of all health care expenditures among school aged children.⁹ Approximately 4,800 children under age 6 in NYS are treated annually in an ambulatory surgery facility for tooth decay, with the average visit costing \$6,293.¹⁰

Each year, one in five US children under age 18 goes without dental care.¹¹ In addition, most low-income children lack basic dental care. Based on national data, an estimated 864,265 NYS children under age 18 years do not receive dental care. Even with all essential dental coverage available to low-income children enrolled in Medicaid fee-for-service and managed care programs, only one-third of eligible children received any dental care in 2009.

According to a recent report on children's dental health issued by the Pew Charitable Trusts,¹² three systemic factors contribute significantly to poor dental health and the lack of access to care among disadvantaged children: 1) too few children having access to proven prevention measures, including dental sealants and fluoridation; 2) too few dentists willing to treat Medicaid-enrolled children; and 3) a limited number of dentists to provide care in many communities.

DATA TRENDS

Caries Experience

Several national, State and local surveys have shown that the prevalence of childhood tooth decay declined substantially during the latter half of the 20th century.^{13,14}

New York also conducted random oral health screenings in 2002-2004 and 2009-2011 on 5,206 third-grade students in the 57 counties outside NYC. (Data are not yet available for NYC.) The surveys showed a notable reduction in tooth decay (53.8 percent in 2002-04 to 45.4 percent in 2009-11), but that reduction was observed primarily in children from homes with incomes above the eligibility limit for the free and reduced-cost school lunch program. Low-income children continue to have a higher prevalence of caries experience and untreated decay, and a lower use of dental services.

Tooth decay among third-grade children (Table 1) was slightly above than the NYS 2013 Prevention Agenda target of 42 percent, but already meets the 2020 target of 49.0 percent.

Table 1: Percentage of Third-Grade Children With Caries Experience, Upstate New York 2002-04 & 2009-11		
Stratums of Subjects	2002-04	2009-11
All Children	53.8% (1.9)	45.4% (1.7)
High Income Children	48.6% (1.5)	31.1% (1.7)
Low Income Children	65.8% (2.1)	62.3% (2.5)

Standard error in parentheses.

SOURCE: Oral Health Survey among third-grade students (NYS excluding NYC)

Untreated Tooth Decay

The proportion of third-graders with untreated decay declined from 29.6 percent in 2002-04 to 24.0 percent in 2009-11, meeting the HP2020 target of no more than 25.9 percent (Table 2). Caries experience and untreated caries were more prevalent among low-income children with virtually little to no improvement in oral health status from the 2002-04 survey to the 2009-11 one.

BURDEN

Over the last 50 years, NYS has seen a dramatic decline in the prevalence and severity of tooth decay in children, primarily due to access to fluoridated water and other sources of fluoride, improved oral hygiene measures and enhanced access to dental care.¹⁵⁻¹⁷

Although tooth decay still affects a large proportion of children, it is more severe in a small proportion of children. Approximately 80 percent of untreated tooth decay is found in 25 percent of children and adolescents aged 5-17 years.¹⁸ This concentration has led to efforts to identify children at high-risk and provide more intensive preventive services to targeted groups. Furthermore, it is less complex to treat dental caries disease at an early stage.

DISPARITIES

The survey of third-grade children show the disparities in oral health and unmet needs observed in national and other state surveys are also apparent in NYS (Tables 1, 2, 4 & 5 (no Table 3))

Compared to children in the high-income group, low-income children experienced more caries and untreated caries, fewer dental visits, fewer sealants and lower utilization of fluoride tablets.¹⁹

Table 2: Percentage of Third-Grade Children With Untreated Decay, Upstate New York 2002-04 & 2009-11		
Stratums of Subjects	2002-04	2009-11
All Children	29.6% (2.2)	24.0% (1.4)
High Income Children	23.0% (1.4)	14.3% (1.3)
Low Income Children	41.8% (2.4)	35.2% (2.5)

Standard error in parentheses.

SOURCE: Oral Health Survey among third-grade students (NYS excluding NYC)

Table 4: Percentage of Children With Dental Visit In Prior 12 Months, Upstate New York, 2002-04 & 2009-11		
Stratums of Subjects	2002-04	2009-11
All Children	77.7% (2.5%)	83.4% (1.2)
High Income	87.3% (1.6%)	89.7% (1.2)
Low Income	57.8% (1.6%)	75.5% (2.1)

Standard error in parentheses

SOURCE: Oral Health Survey among third-grade students (NYS excluding NYC)

Table 5: Percentage of Children With Sealants Present Upstate New York 2002-04 & 2009-11		
Stratums of Subjects	2002-04	2009-11
All Children	38.1% (1.9)	42.0% (1.5)
High Income Children	42.5% (2.5)	44.9% (1.8)
Low Income Children	28.9% (1.7)	38.4% (2.5)

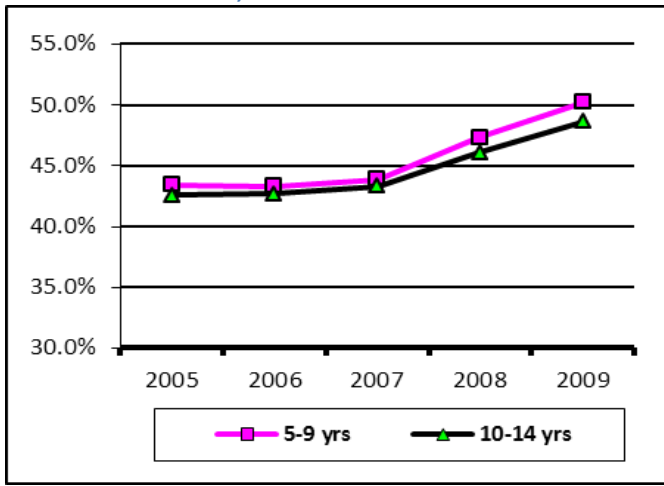
Standard error in parentheses

SOURCE: Oral Health Survey among third-grade students (NYS excluding NYC)

Utilization of Dental Services

Despite coverage of all essential dental services under the NYS Medicaid program, many low-income children enrolled in Medicaid do not receive routine dental care. Based on paid claims, approximately half of Medicaid-eligible children targeted by school-based dental programs received dental care in 2009, with the proportion of children receiving dental care substantially increasing in 2008 and 2009 (Figure 1).

Figure 1: Percentage of Medicaid-Eligible Children with Dental Visit, NYS 2005-2009



SOURCE: NYSDOH, Office of Health Insurance Programs, NYS Medicaid Claims and Expenditures for Dental Services by county and age, 2009

Children aged 5-9 years (50.2 percent) met the HP2020 target of 49.0 percent for dental visits, while children 10-14 years barely missed the 2020 target (48.6 percent).

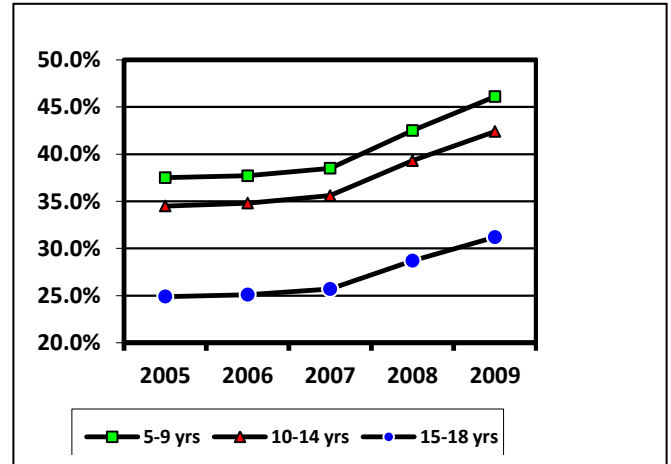
Parents completing questionnaires as part of the 2002-04 and 2009-11 third-grade surveys reported a higher use of dental services. Utilization increased between 2002 and 2011 for both income groups (Table 4), with low-income children experiencing the greatest increase (30.6 percent). In both surveys, NYS third-graders exceeded the HP2020 target of 49 percent for dental visits in the prior year.

Preventive Services and Dental Sealants

HP2020 sets a target of at least 29.4 percent of low-income children and adolescents receiving any preventive dental service during the past year. Between 2007 and 2009, modest gains were noted in the proportion of Medicaid-eligible children who

had claims paid on their behalf for preventive dental services. School-aged children in age groups 5-9 and 10-14 years exceeded the HP2020 target each year since 2005, while children aged 15-19 years met the HP2020 target for the first time in 2009 (Figure 2).

Figure 2: Percentage of Medicaid-Eligible Children with Preventive Dental Visit, NYS 2005-2009



SOURCE: NYSDOH, Office of Health Insurance Programs, NYS Medicaid Claims and Expenditures for Dental Services by county and age, 2009

The proportion of students with dental sealants on one or more of their permanent first molar teeth increased modestly since the 2002-04 survey, but falls short of the Maternal and Child Health Block Grant target of 50 percent for both high- and low-income groups (Table 5).

CHALLENGES

- The fluoridation of public water systems, despite scientific evidence demonstrating its effectiveness in decreasing dental caries prevalence and severity, continues to be targeted by anti-fluoridation groups.
- Numerous oral health prevention opportunities are missed, evidenced by the low proportion of infants and young children having preventive dental visits and/or receiving fluoride varnish applications. More outreach to providers and use of innovative service delivery models are needed to substantially increase the percentage of high-risk infants and children receiving fluoride varnish and preventative oral health services.

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Prevention Agenda Toward the Healthiest State

Progress Report 2012

Mental Health

DESCRIPTION

Mental health conditions, such as depression and anxiety, affect people's ability to engage in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases and risky behaviors, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.

BURDEN and DATA TRENDS

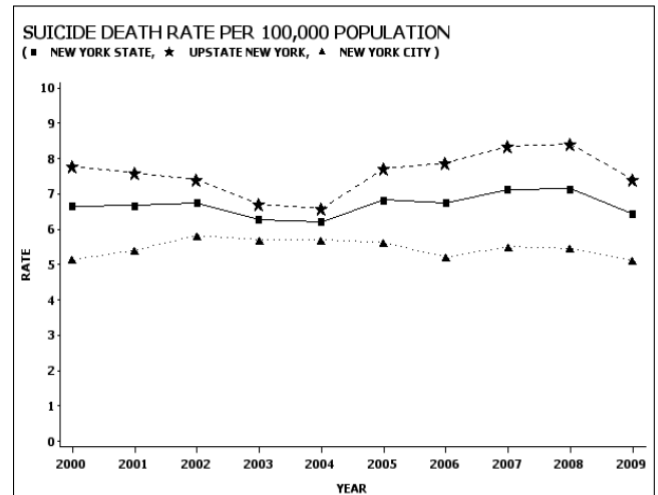
According to the National Institute of Mental Health,^{1,2} in any year, an estimated 13 million American adults (approximately one in 17) have a seriously-debilitating mental illness. Mental health disorders are the leading cause of disability in the United States, accounting for 25 percent of all years of life lost to disability and premature mortality.³ Mental illness accounts for more than 15 percent of the total cost burden of disease exceeding the disease burden caused by all cancers.

People in the US public mental health system with serious mental illness are dying 25 years earlier than the general population.⁴ Increased morbidity and mortality are often due to treatable medical conditions, such as hypertension and diabetes. Suicide is the 11th leading cause of death in the US, accounting for approximately 30,000 deaths each year,⁵ of which 1,257 were suicides in NYS in 2009.

Every year, more than one in five New Yorkers has symptoms of a mental health condition. Moreover, one in 10 adults and children experiences mental health challenges serious enough to affect functioning in work, family and school life.⁶ In NYS, an estimated 1,400 people die from suicide each year.⁷ An estimated 11 non-fatal suicide attempts occur per every suicide death. The suicide rate is decreasing with NYC rate lower than in the rest of the State (Figure 1).

Figure 1:

New York State Suicide Death Rate Per 100,000 Population



SOURCE: NYSDOH Vital Statistics

RISK AND PROTECTIVE FACTORS

Factors that protect people from mental illness and adverse outcomes are varied, including an individual's knowledge, attitudes and behaviors, as well as attributes of the environment and culture.⁸

Information about risk and protective factors for attempted suicide is more limited than for actual suicide. One problem in studying non-lethal suicidal behaviors is a lack of consensus about what constitutes suicidal behavior.⁹ The most important risk and protective factors for suicide are outlined below:

Risk Factors for Suicide

Bio-psychosocial Risk Factors

- Mental disorders, particularly mood disorders, schizophrenia, anxiety disorders and certain personality disorders
- Alcohol and other substance use disorders
- Hopelessness
- Impulsive and/or aggressive tendencies
- History of trauma or abuse
- Some major physical illnesses
- Previous suicide attempt

- Family history of suicide

Environmental Risk Factors

- Job or financial loss
- Relational or social loss
- Easy access to lethal means
- Local clusters of suicides that have a contagious influence

Social cultural Risk Factors

- Lack of social support and a sense of isolation
- Stigma associated with help-seeking behavior
- Barriers to accessing health care, especially mental health and substance abuse treatment
- Certain cultural and religious beliefs (e.g., the belief that suicide is a noble resolution of a personal dilemma)
- Exposure to a suicide, including through the media, and “copycat” suicides

Protective Factors for Suicide

- Effective clinical care for mental, physical and substance use disorders
- Easy access to clinical interventions and support for people seeking
- Restricted access to highly lethal means of suicide
- Strong connections to family and community support
- Support through ongoing medical and mental health care relationships;
- Skills in problem-solving, conflict resolution and nonviolent handling of disputes
- Cultural and religious beliefs that discourage suicide and support self-preservation

Positive resistance to suicide is not permanent, so programs that support and maintain protection against suicide should be ongoing.

DISPARITIES

Disparities in Mental Health Status

Mental health status disparities exhibit a decidedly different pattern than other health disparities.¹⁰ The findings derive from the Collaborative Psychiatric Epidemiology Survey program¹¹ funded by the National Institute of Mental Health, which used common core questions and unified sampling weights to estimate the prevalence of mental health problems.¹²

Hispanics (with the exception of those from Puerto Rico), Asian American non-Hispanics, and Black non-Hispanics have fewer mental disorders than White non-Hispanics. For Mexican, African, and Caribbean immigrants, rates of disorders increase with time spent in the US. Similarly, compared with a nationally representative sample of the US population, American Indians are at heightened risk for post-traumatic stress and alcohol dependence, but at lower risk for depression. However, more Black non-Hispanics may have schizophrenia, a rare but very serious condition, than White non-Hispanics. While substantial evidence suggests that clinicians over-diagnose schizophrenia and under-diagnose mood disorders in Black non-Hispanics; clinical decisions do not account for all the observed differences.

Although minorities have fewer psychiatric disorders than White non-Hispanics, both Black non-Hispanics and Hispanics are more likely to suffer with persistent impairments. Similarly, depression is more likely to be chronic, severe, disabling, and untreated among Black non-Hispanics compared with White non-Hispanics.

Disparities in Mental Health Care

Most research compares mental health care across ethnic groups and finds evidence of disparities in access, use and quality of care,¹³ documented in *Mental Health: A Report of the Surgeon General*¹⁴ and its supplement, *Mental Health: Culture, Race, and Ethnicity*.¹⁵ Evidence shows racial and ethnic minority groups have less access to mental health services than White non-Hispanics, are less likely to receive needed care and are more likely to receive poor quality care when treated. Minorities in the US are more likely than White non-Hispanics to delay or fail to seek mental health treatment.^{16,17,18,19} Two studies examining trends in mental health care, using the Institute of Medicine’s definition of disparities,^{20,21} found no progress toward eliminating disparities in mental health care provided in primary care or psychiatric settings.

CHALLENGES

■ Address Stigma

Stigma is perhaps the single largest barrier to getting people into mental health treatment.

■ Connect to Care

After patients are discharged from in-patient stays, the rates of follow-up care in the community are unacceptably low. As a result, people have multiple inpatient hospitalizations and encounters with the criminal justice system as well.

■ Increase Accountability for Care

A recent root cause analysis of the causes of suicides¹¹ identified areas in need of improvement that included clearer and more frequent communication, including record documentation, by physicians and clinicians, staffing allocation and training, environmental modifications, and changes in policies and procedures. Deficiencies in communication and patient assessments are two of the most common contributors to inpatient suicides.

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Substance Abuse

BACKGROUND

The New York State Office of Alcoholism and Substance Abuse Services (NYS OASAS) estimates that one in 13 NYS residents suffers from a substance abuse disorder.¹ These figures do not fully depict the widespread impact because of the millions of others whose lives are also affected, including children, spouses and extended families. The cost to society is compounded by the consequences of alcohol and substance abuse addiction, which impact public safety, health, welfare, and education of NYS residents.

BURDEN and DATA TRENDS

More than 1.9 million New Yorker residents have a substance abuse problem, including 1.77 million adults and 156,000 youths (12-17 years), based on NYS OASAS 2010 estimates.² Nationally, the prevalence of self-reported alcohol use (in the past 30 days among youths) decreased slowly between 1999 and 2009, from 51 percent to 44 percent for high school seniors.³ In NYS, the rate declined from 62 percent to 57 percent.¹ The prevalence of alcohol use among adults at least 18 years of age in 2009 (16.3 percent) met the HP2020 goal of 24.3 percent, but did not meet the HP2010 goal of 13.4

percent. Women reported lower lifetime alcohol use than men, with a smaller gender difference between younger adults (18-24 years). Non-Hispanic Whites and Native Americans younger than 26 years reported the highest rates of binge drinking, followed by Hispanics.

Alcohol use increases sharply from the early teens to the mid-twenties with a steady decline thereafter. The prevalence of alcohol use, binge drinking (five or more drinks per occasion), and heavy drinking is higher among men than women, and higher among young adults than older adults. Among adults, the proportion reporting binge drinking did not change from 2001 to 2010. People over 65 years report drinking less alcohol and have fewer alcohol-related problems than younger adults.

Binge drinking of alcoholic beverages among high school seniors declined nationally over the last decade, from 31 percent to 25 percent. However, the percentage of NYS high school seniors who reported binge drinking did not change during from 1997 to 2009⁴ (Figure 1). The rates were higher in Upstate New York than in NYC.

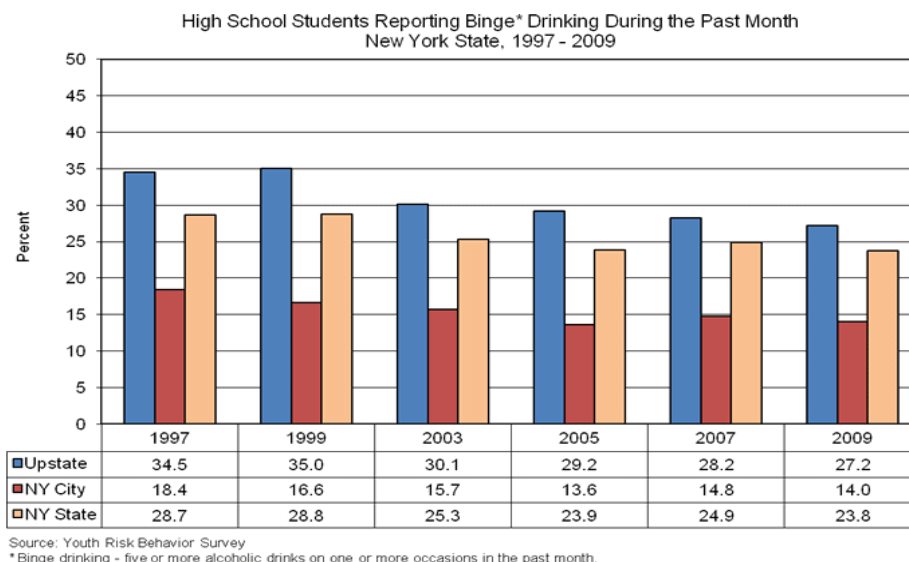
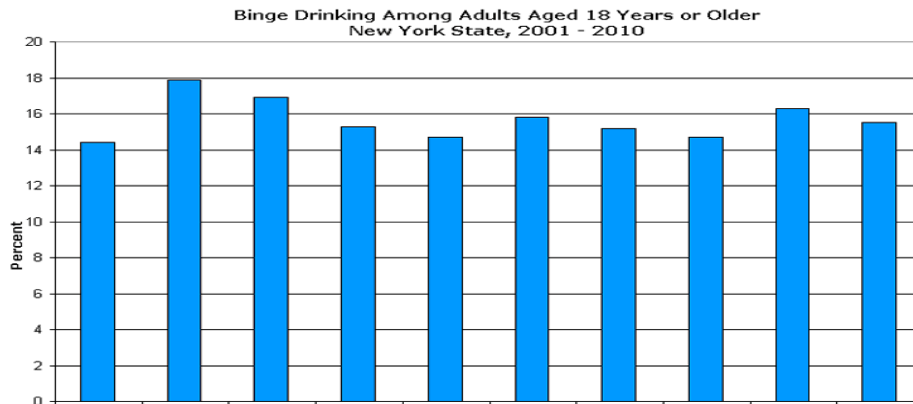


Figure 1:

Binge drinking among adults varied between 14.4 and 15.5 percent during the period 2001-2010, indicating no consistent trend (Figure 2).

Figure 2:



RISK AND PROTECTIVE FACTORS

Age of Onset

Alcohol and drug use tends to begin in mid to late adolescence, though reported use is greater among individuals who experience early puberty.⁵ The risk of alcohol-related problems is greater if a person starts drinking at a young age. A delay in drinking until age 20 or 21 reduces the risk of developing alcohol-related problems.⁶

Youth Perception Their Parents Approve of Their Alcohol or Drug Use.

One of the most consistent risk factors for adolescent drinking is perceived parental approval.⁷

Peers Engaging in Problem Behavior

Associating with peer users of drug or alcohol, and/or rejection by peers can create problem behaviors and influence attitudes and norms related to substance use.⁸ Exposure to peer problem behavior is correlated with increased alcohol and other substance use in the same month.⁹ Those who drink in a social setting, or who have peers who do so, are more likely to abuse alcohol later in life.¹⁰ Moreover, a family history of alcoholism was a significant risk factor for the development of adolescent problem drinking.¹¹

Low Perception of Harm

Having a low perception of harm from alcohol and drug use is a risk factor for use.¹² Individuals with

attitudes or values favorable to alcohol or drugs are more likely to initiate substance use.¹³

Strong Parent and Adolescent Relationship and Family Cohesion

Adolescents who have a close relationship with their parents are less likely to use alcohol.¹⁴

Youth Access and Availability

Most alcohol consumed by youth is obtained through social sources, such as parents and friends, at underage parties and at home.¹⁵ Greater availability of alcohol or illegal drugs leads to increased use.¹⁶

Poor School Achievement and Low School Bonding

Adolescents who have a low commitment to school or do poorly are more likely to consume alcohol.¹⁷

Early and Persistent Problem Behaviors, Risk-Taking, and High Sensation Seeking

Aggressiveness or antisocial behavior in children and adolescents predicts later adolescent aggressiveness, drug abuse and alcohol problems.¹⁸

Parental Monitoring (or Perception of Monitoring)

Adolescents who report low parental monitoring are significantly more likely to use a variety of substances.¹⁹ Positive parental style and close monitoring by parents are proven protective factors for adolescent's use of alcohol and other drugs.²⁰

DISPARITIES

Black non-Hispanic and Asian non-Hispanic respondents reported the lowest rates of heavy drinking in the 18-25 year age group. Among drinkers, the highest proportion of binge and heavy drinkers was observed among American Indians.

Some different drinking patterns were reported by adults older than 26 years. White non-Hispanic

drinkers reported the highest level of alcohol consumption. The proportion of binge and heavy drinking was much lower among younger adults across all ethnic groups. American Indians aged 26 years or older also reported a much lower rate of alcohol consumption than their younger counterparts. Similar rates of binge drinking were reported among non-Hispanic White, Black and American Indian respondents in this age group, and were lower than the rates for Hispanic drinkers. Asians reported the lowest rates of alcohol use, binge drinking and heavy drinking during the month prior to the survey. Among subjects 26 years or older, the rates of current heavy drinking for all ethnic groups ranged from 3.4 percent to 5.3 percent except for Asians who reported 1.4 percent.

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**Prevention Agenda Toward the Healthiest State
Progress Report 2012**

Lead Hazards

OCCUPATIONAL HEALTH

NYSDOH is committed to the prevention of workplace illnesses, injuries and fatalities. Surveillance is conducted to identify occupational illnesses, and then develop and provide outreach and prevention services. Workplace injuries and illnesses can be prevented by control or elimination of hazards.

Adult Blood Lead Levels

BACKGROUND

Lead is a common element that has no biologic function; the human body has no need or use for it. Screening, prompt environmental assessments, control of lead hazards and effective treatment for elevated lead levels in blood have virtually eliminated deaths and the most severe poisoning, called lead encephalopathy. However, elevated blood lead levels (BLLs) in adults can damage the nervous, blood, reproductive, renal, cardiovascular and digestive systems.¹ The majority of adult cases are workplace-related. The US Department of Health and Human Services recommends that BLLs among adults be reduced to less than 25 micrograms (μg) per deciliter (dL). The geometric mean BLL of all adults in the United States should be less than $2\mu\text{g}/\text{dL}$.

According to the NYS Department of Labor, there were 8,755,800 people employed in the State in 2011. Of those, 394,000 employees were at-risk for lead exposure through employment in industries, such as construction and manufacturing. These workers potentially expose others, including family members, to lead dust carried home in cars and on clothes.

Although there have been substantial reductions in adult BLLs in NYS, some populations continue to be exposed. The Hispanic population consistently has

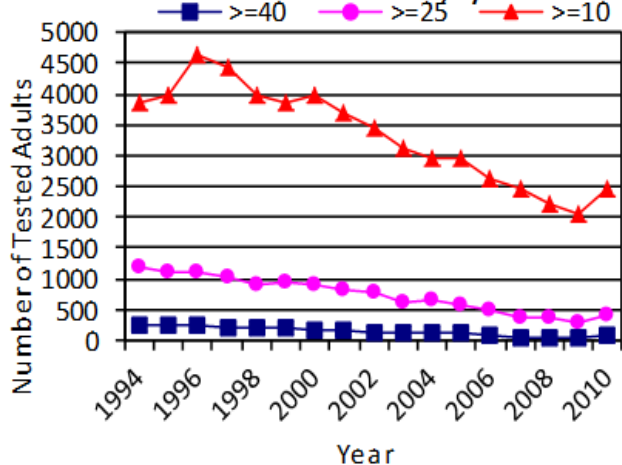
the highest BLLs and construction workers, particularly those working on bridges and homes, continue to have elevated BLLs.

NYSDOH established the Heavy Metals Registry (HMR) in the State Sanitary Code, and reporting began in 1982. All clinical laboratories, in NYS and elsewhere, must report test results. From 1982-1986, BLLs of $40\mu\text{g}/\text{dL}$ or higher were reportable. In 1986, the reportable BLL was lowered to $25\mu\text{g}/\text{dL}$ or higher. Then, in 1992, as part of a major childhood lead poisoning initiative, legislation and regulation were established to require the reporting of all blood lead results for all age groups, regardless of level. This reporting has helped to track adult BLLs over time by verifying trends in individuals and companies, and has allowed staff to proactively identify adults potentially at risk before their BLLs become more elevated.

DATA TRENDS

HMR data indicate that BLLs have declined significantly (Figure 1). From 2000-2009, there was a 47 percent decrease in the incidence of adult BLLs of $10\mu\text{g}/\text{dL}$ and higher. In 2000, the incidence of BLLs was 42.1 per 100,000 workers. By 2009, the incidence declined to 21.5 per 100,000 workers.

Figure 1. Number of Tested Adults Incorporated into the Heavy Metals Registry for Lead and Blood Lead Level, by Year



SOURCE: Heavy Metals Registry

GOALS

Healthy People 2020

The HP2020 goal is to reduce the proportion of people who have elevated blood lead concentrations (greater than or equal to 10µg/dL) from work exposures to 20.2 persons per 100,000 employed adults. NYS’s rate was 21.5 per 100,000 adults in 2009.

The NYS goal is to reduce the incidence of elevated BLLs (greater than or equal to 25µg/dL) per 100,000 employed persons to 0 by 2013. The 2003-2005 rate was 6.4 per 100,000 workers which fell by 25 percent to rate of 4.5 per 100,000 by 2007-2009.

DISPARITIES

Geographic

There is considerable variation in the incidence rate of BLLs over 10µg/dL throughout the State, from 0.9 per 100,000 in Schenectady County to 201.2 per 100,000 employed in Lewis County (Table 1). These rates vary principally due to the industrial make-up of the county. Rates in NYC are slightly lower than in the rest of the State.

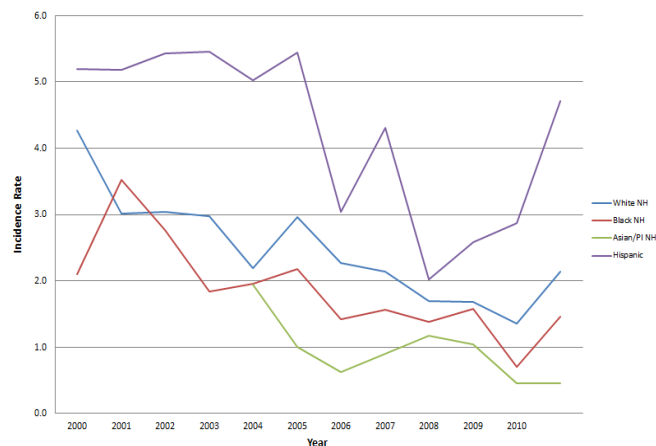
Gender

From 2006-2010, 14 percent of those reported to the HMR with BLLs of 10 and above were female. The percentage had increased slightly from 2000 through 2005 when 11.5 percent were female. The majority of the women tested were younger than 30 years of age.

Race and Ethnicity

Hispanics have a higher rate of lead poisoning than non-Hispanics. Hispanic females made up almost 40 percent of all females reported to the HMR with BLLs of 25µg/dL or greater between 2000 and 2010 with a known ethnicity. For all females reported with BLLs of 10µg/dL or greater, 23 percent were Hispanic. More than 75 percent of these Hispanic women had a non-occupational exposure from folk medicine, and approximately 80 percent live in NYC. Hispanic men, 70 percent of whom live in NYC, are exposed to lead primarily through jobs as house painters.

Figure 2: Incidence Rate of NYS Residents with a Blood Lead Level of ≥25 mcg/dL, per 100,000 Employed Persons, by Ethnicity



PI – Pacific Islander (non-Hispanic)
NH – Non-Hispanic

SOURCE: NYS Heavy Metals Registry, Bureau of Labor Statistics' Current Population Survey

Table 1: Elevated Blood Lead Levels among Adults (10 µg/dL) per 100,000 Employed Persons Ages 16 and Older

Region/County	Elevated Blood Lead Levels				Employed	
	2007	2008	2009	Total	2008	Rate
Western Total	213	219	199	631	746,217	28.2
Allegany	10	14	13	37	22,517	54.8
Cattaraugus	15	20	20	55	39,118	46.9
Chautauqua	11	8	9	28	63,423	14.7
Erie	112	117	108	337	445,328	25.2
Genesee	18	14	10	42	31,574	44.3
Niagara	39	33	29	101	106,083	31.7
Orleans	3	7	5	15	18,165	27.5
Wyoming	5	6	5	16	20,009	26.7
Finger Lakes Total	163	189	126	478	606,471	26.3
Chemung	30	58	18	106	39,044	90.5
Livingston	6	13	15	34	30,513	37.1
Monroe	70	59	52	181	356,456	16.9
Ontario	18	17	11	46	53,898	28.4
Schuyler	16	20	9	45	9,542	157.2
Seneca	18	14	10	42	16,194	86.5
Steuben	2	7	5	14	43,016	10.8
Wayne	2	1	6	9	45,249	6.6
Yates	1	0	0	1	12,559	2.7
Central Total	227	174	156	557	667,446	27.8
Cayuga	50	34	12	96	39,377	81.3
Cortland	1	2	0	3	22,563	4.4
Herkimer	33	29	23	85	29,321	96.6
Jefferson	10	4	7	21	45,792	15.3
Lewis	19	25	27	71	11,764	201.2
Madison	14	15	13	42	34,319	40.8
Oneida	26	13	19	58	105,016	18.4
Onondaga	57	35	32	124	222,786	18.6
Oswego	4	5	9	18	56,164	10.7
St Lawrence	7	8	12	27	46,594	19.3
Tompkins	6	4	2	12	53,750	7.4
New York-Penn Total	15	25	19	59	140,393	14.0
Broome	9	19	12	40	92,444	14.4
Chenango	3	2	0	5	23,043	7.2
Tioga	3	4	7	14	24,906	18.7

Region/County	Elevated Blood Lead Levels				Employed	
	2007	2008	2009	Total	2008	Rate
Northeastern Total	131	144	126	401	733,466	18.2
Albany	20	18	21	59	152,350	12.9
Clinton	4	10	3	17	37,269	15.2
Columbia	9	16	20	45	30,261	49.6
Delaware	7	5	9	21	21,492	32.6
Essex	4	6	2	12	17,330	23.1
Franklin	5	2	0	7	21,407	10.9
Fulton	6	9	9	24	25,739	31.1
Greene	12	4	7	23	22,878	33.5
Hamilton	1	1	0	2	2,879	23.2
Montgomery	1	4	1	6	23,003	8.7
Otsego	4	3	3	10	29,821	11.2
Rensselaer	12	17	17	46	79,761	19.2
Saratoga	15	23	21	59	116,051	16.9
Schenectady	1	0	1	2	72,892	0.9
Schoharie	3	0	1	4	14,782	9.0
Warren	16	13	6	35	34,534	33.8
Washington	11	13	5	29	31,017	31.2
Hudson Valley Total	414	386	382	1,182	1,101,575	35.8
Dutchess	43	43	43	129	138,809	31.0
Orange	209	219	212	640	171,320	124.5
Putnam	13	4	6	23	53,439	14.3
Rockland	13	8	14	35	148,374	7.9
Sullivan	26	33	29	88	33,251	88.2
Ulster	19	23	19	61	85,543	23.8
Westchester	91	56	59	206	470,839	14.6
New York City Total	931	808	732	2,471	3,718,842	22.1
Bronx	168	149	121	438	485,894	30.0
Kings	275	217	207	699	1,043,335	22.3
New York	81	76	67	224	889,050	8.4
Queens	339	321	290	950	1,068,014	29.7
Richmond	68	45	47	160	232,549	22.9
Long Island Total	235	170	163	568	1,423,625	13.3
Nassau	103	75	80	258	665,740	12.9
Suffolk	132	95	83	310	757,885	13.6
New York State Total	2,329	2,115	1,903	6,347	9,138,035	23.2

SOURCE: NYS Heavy Metals Registry, Bureau of Labor Statistics' Current Population Survey

IMPACT AND BURDEN

Lead toxicity can affect every organ system, but the most sensitive target is the nervous system. Among adults, symptoms may include reduced visual motor performance, slower reaction time, fatigue, forgetfulness, decreased libido, depression and mood changes, diminished cognitive performance, irritability and lethargy. Many studies show a strong association between lead exposure and kidney dysfunction. Recent research indicates that chronic low-dose exposures (less than 20µg/dL) may contribute to high blood pressure. Because lead inhibits the body's ability to make hemoglobin, anemia may result.² The effects of lead in children generally occur at lower BLLs than in adults. Children are at risk of "take-home" lead exposures from their parent's employment.³

CHALLENGES

To make the HMR more efficient in identifying high-risk industries, employer and occupation information should be included in the data received electronically from clinical laboratories. Within the next year, NIOSH will release coding software it has developed to identify occupations. The software would help code the records, easing the burden on prescribing physicians and laboratories. In addition, a high proportion of interviews are not completed, in part because many workers live in temporary housing while on job assignments.

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Prevention Agenda Toward the Healthiest State Progress Report 2012

Lead Hazards

BACKGROUND

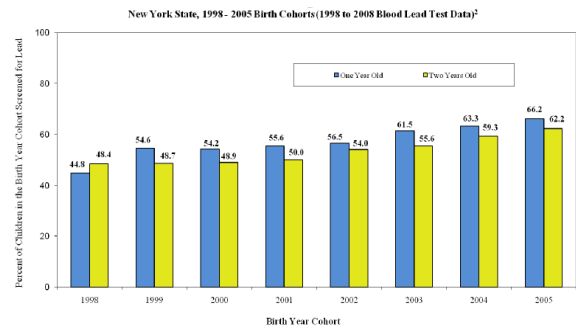
Lead is among the most common environmental toxins for young children in NYS. Children are most often exposed to lead by eating paint chips or dirt that is contaminated with lead. In 2008, 3,010 children were diagnosed with lead poisoning. Lead poisoning causes learning disabilities, anemia and growth problems. Children exposed to lead may have problems paying attention and may become aggressive. Elimination of childhood lead poisoning is essential to improving the lives of NYS children, especially those in low-income families who are disproportionately affected. NYS has made significant progress toward reducing the incidence and severity of childhood lead poisoning, but it remains a serious public health problem.

Because lead poisoning damage cannot be reversed, it is critical that children be protected from lead exposure before they become lead poisoned. Routine blood lead testing helps identify children early, and is essential to ensure coordination of follow-up services to minimize harmful effects and prevent further lead exposure. Health care providers are required to test all children for lead at or around age one and again around age two. Providers are also required to assess all children ages 6-72 months at least once annually for lead exposure, with blood lead testing for all children found to be at risk based on those assessments. Of children born in 2005, approximately 66 percent of children born in 2005 were tested for lead at or around age one and about 62 percent at or around age 2 years. About 88 percent of children received at least one lead test by age three, and 47.5 percent received at least two tests by age 3 years.

DATA TRENDS

The percentage of children 6 years or younger tested for lead continues to increase. The following charts depict blood lead testing data for 1998-2005 birth cohorts:

Figure 1: Percentage of Children Tested for Lead at or Around Age 1 and at or Around Age 2

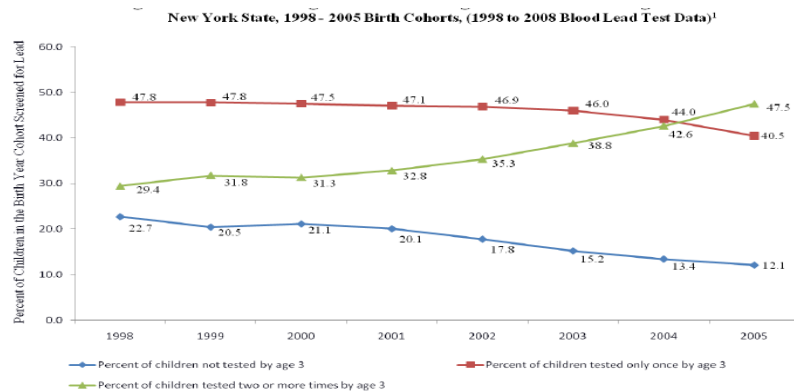


¹ At or around age one year is defined as 9 months to < 18 months and at or around age two years is defined as 18 months to < 36 months.
² Birth cohorts beyond 2005 are not included in this analysis because those children had not yet reached 36 months of age by 2008.

SOURCE: Reducing Lead Exposures in Children, Lead Testing and Lead Poisoning Among NYS Children, 2008 report

At the same time, the numbers of children receiving multiple blood tests before their third birthday similarly improved.

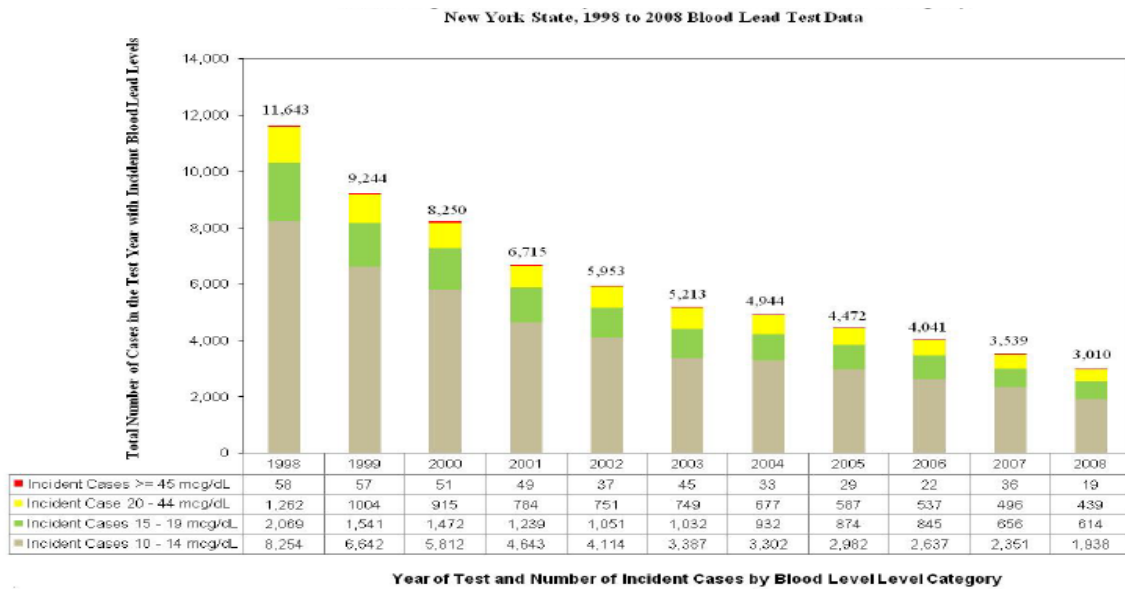
Figure 2: Lead Testing Patterns among Children Under Age Three



¹ Birth cohorts beyond 2005 are not included in this analysis because those children had not yet reached 36 months of age by 2008.

SOURCE: Reducing Lead Exposures in Children, Lead Testing and Lead Poisoning Among NYS Children, 2008 report

Figure 3: Summary Trends in the Number of Incident Cases amount Children under 6 Years by Blood Lead Level (BLL) Category



SOURCE: Reducing Lead Exposures in Children, Lead Testing and Lead Poisoning Among NYS Children, 2008 report.

According to a 2009 study, every dollar invested nationally in lead paint hazard control results in a return of \$17-221, or a net savings of \$181-269 billion. The benefits are higher lifetime earnings, increased tax revenue, lower health care costs the direct costs for crime, and reduced need for special education.¹

IMPACT and BURDEN

A child with lead poisoning is not usually symptomatic. Lead poisoning must be diagnosed through blood tests. Lead can harm a young child's growth, behavior and ability to learn. Children under age 6 are more likely to get lead poisoning than any other age group. Most often, children get lead poisoning from ingesting dust from old lead paint that gets on floors windowsills, hands and toys. Lead can also be passed from mother to baby during pregnancy.

CHALLENGES

Compared to other states, NYS bears an especially heavy burden from childhood lead poisoning, with low-income families and communities of color affected disproportionately. NYS has the highest number (3,303,770) and the highest percentage (43 percent) of homes at risk for lead exposure in children. Recently, the CDC Advisory Committee on Childhood Lead Poisoning recommended the use of a lower reference value for lead poisoning of 5mcg/dL. If adopted, this would significantly increase the number of children needing case management services and would require additional resources at the State level. At the same time, federal grant money dedicated to lead poisoning prevention has been eliminated, posing a significant challenge to NYS and other states.

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**Prevention Agenda Toward the Healthiest State
Progress Report 2012
Foodborne Diseases**

BACKGROUND

NYSDOH is committed to preventing foodborne disease outbreaks. All foodborne disease outbreaks are investigated, including all disease agents and the places where foods are prepared or eaten, and identifying the food sources. Outreach and prevention strategies are implemented based on analyses of surveillance information. Foodborne disease outbreaks can be prevented by control or elimination of hazards.

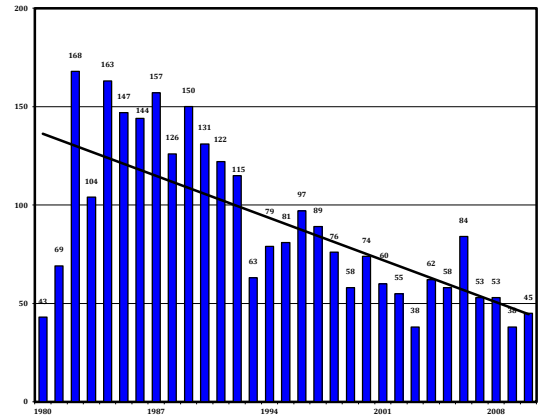
The CDC defines a foodborne disease outbreak as an incident in which two or more persons experience a similar illness resulting from the ingestion of a common food.¹ The origins of foodborne disease outbreaks include bacterial, viral, chemical, parasitic, fungal and natural toxins.

DATA TRENDS

According to the CDC, each year 48 million people (or one in six Americans) get sick, 128,000 are hospitalized and 3,000 die of foodborne diseases.² Approximately 38 million illnesses (or 80 percent), 72,000 hospitalizations (56 percent) and 1,700 deaths (56 percent) associated with foodborne disease can be attributed to an unspecified agent.³ In NYS, from 1980-2010, there were about 90 foodborne disease outbreaks, resulting in approximately 1,900 illnesses, 70 hospitalizations and two deaths each year. Approximately 11 percent of these outbreaks were caused by the handling of food by an infected person, and 31 percent of these outbreaks and 22 percent of the illnesses were caused by an unspecified agent or unknown pathogen.

Depending on the model used, the average cost per case of foodborne illness is approximately \$1,068-\$1,626, and the annual cost of illness is approximately \$51.0 billion to \$77.7 billion.⁴

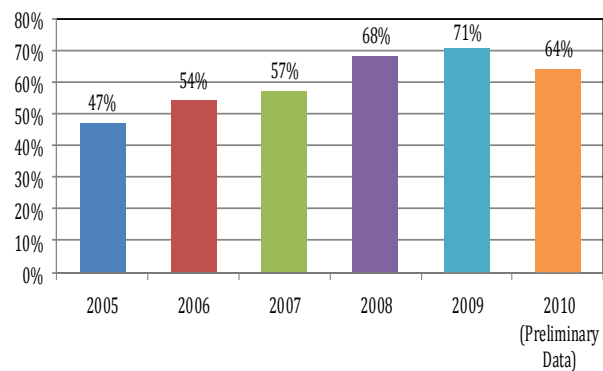
Figure 1: NYS Food borne Disease Outbreaks, 1980-2010



SOURCE: Foodborne Disease Outbreak Surveillance Data

Data from the NYS Foodborne Disease Surveillance database show that from 1980-2010 there was an annual average of 90 foodborne disease outbreaks. In earlier years, there were more outbreaks. However, improved food safety practices and changed regulations may have reduced foodborne disease outbreaks (Figure 1).

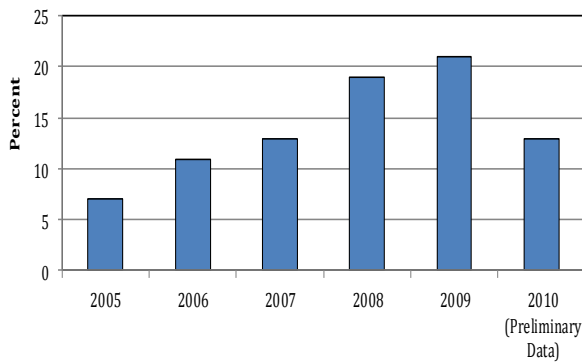
Figure 2: NYS Percentage of Foodborne Disease Outbreaks with Confirmed Etiology, 2005-2010



SOURCE: Foodborne Disease Outbreak Surveillance Data

The percentage of foodborne disease outbreaks with a confirmed etiology in NYS has gradually increased. In 2005, only 47 percent of reported outbreaks had a confirmed etiology; by 2009, that number increased to 71 percent. There was a slight decrease from 2009 to 2010: 71 percent to 64 percent. About 20 outbreaks with an unknown etiology were reported from 2005-2009. Not knowing the etiology of the foodborne outbreak can affect the control measures needed to prevent future illness, to stop the outbreak and to prevent future outbreaks.

Figure 3: NYS Percentage of Outbreaks With Infected Food Worker Identified as a Contributing Factor, 2005-2010



SOURCE: Foodborne Disease Outbreak Surveillance Data

Food handling by an infected person is one of the leading contributing factors to foodborne disease outbreaks in NYS, and has increased from 2005-2009. During this period, there was an average of eight outbreaks per year due to an infected food handler identified, as a contributing factor. In 2010, this was the second-highest contributing factor, after contaminated ingredients. Food service establishments may not be able to control or prevent outbreaks from a contaminated ingredient, since most involve an establishment receiving ready-to-eat products already contaminated then served to consumers with limited or no additional preparation. If good food safety practices, by food service establishments or food handlers, were followed, the handling by infected persons could be better controlled.

CHALLENGES

- Less funding for addressing foodborne diseases will require the development of electronic versions of questionnaires and outbreak investigation forms.

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**Prevention Agenda Toward the Healthiest State
Progress Report 2012
Hazardous Waste Sites**

BACKGROUND

Exposure to improperly disposed hazardous waste and spilled petroleum or chemicals can injure people or make them sick. NYSDOH aims to protect the public from harmful exposures to chemicals at hazardous waste sites.

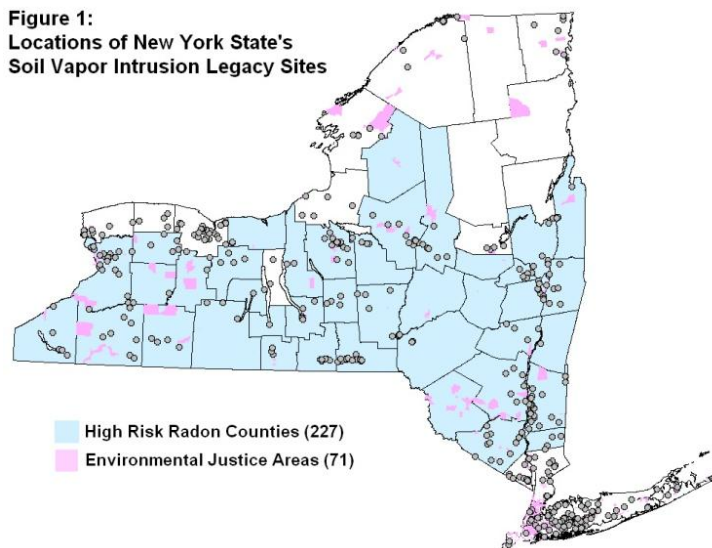
In the early 2000s, NYSDOH and similar agencies nationwide took a new look at the risk of underground gases and volatile chemicals seeping into nearby buildings after hazardous waste sites have been remediated. In NYS, a multi-agency effort is under way to evaluate this risk, known as soil vapor intrusion.

NYSDOH is collaborating with the NYS Department of Environmental Conservation (NYSDEC) and the US Environmental Protection Agency (USEPA) to re-evaluate soil vapor intrusion at hazardous waste sites where remedial activities have been implemented. This effort, which includes 421 hazardous waste sites, is critical for verifying that the remedies selected for the sites protect the public's health.

Location of Sites

- The 421 sites are in 55 counties across the State (Figure 1) in both urban and rural settings.
- 227 of the sites are located in high-risk radon counties.
- 71 sites are located in Potential Environmental Justice Areas, as defined by the NYSDEC at the 2000 US Census block group level (Figure 1).

**Figure 1:
Locations of New York State's
Soil Vapor Intrusion Legacy Sites**



SOURCE: Legacy Site Index

Types of Buildings Included

Any building — whether it is old or new, has a basement, dirt floor, or crawlspace, or is built on a slab — located at hazardous waste sites with volatile contaminants can be affected by soil vapor intrusion. Depending upon the extent of contamination, residential, commercial and industrial buildings on and off the site are evaluated.

IMPACT AND BURDEN

Most of our knowledge of health effects associated with inhaling volatile contaminants comes from human and animal studies examining long-term exposures at high levels. In comparison, exposures to soil vapor intrusion are often characterized as long-term, low-level exposures. The health effects of these exposures are not known.

CHALLENGES

- Sampling and mitigation may be more costly, particularly in areas of widespread environmental contamination and in some types of buildings.
- Difficulties have been encountered in soliciting the participation of property owners in sampling, monitoring and mitigation.
- The rate at which evaluations are undertaken will depend upon whether parties are willing to revisit sites they believed were completed, and their ability to obtain additional funding for consultants, sampling and intervention.

Prevention Agenda Toward the Healthiest State Progress Report 2012

Mercury

BACKGROUND

In 2001, mercury was recognized as among the 10 chemicals most frequently involved in hazardous substances spills and releases in NYS. From 1993-2001, 307 mercury spills were reported to NYSDOH's Hazardous Substances Emergency Events Surveillance program (6 percent of all spills reported during that period). Mercury is an element that has acute and chronic health effects on the nervous system. Children are especially vulnerable to the neurotoxic effects of mercury. Exposure to mercury vapor is particularly insidious because it lacks warning properties such as color or odor. Also, people may be familiar with liquid mercury and mercury beads, but may not realize that mercury is toxic. Therefore, they may have insufficient concern about handling mercury or about diligently cleaning up all traces of a liquid mercury spill.

There are many uses for liquid metallic mercury. In schools, mercury is used primarily in thermometers, barometers, thermostats, batteries, electrical switches and gauges. Historically, mercury has been used in schools in scientific demonstrations and experiments.

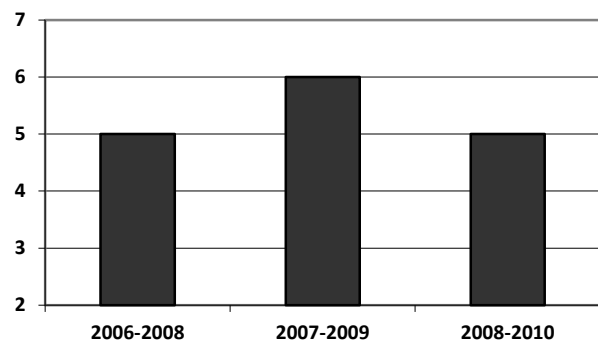
In 2001 and 2002, NYSDOH worked with stakeholders to establish a "Partnership to Reduce Mercury in Schools." Stakeholders included NYS DEC's Pollution Prevention Unit and Division of Solid and Hazardous Materials; the State Education Department's Curriculum Development and Facility Planning groups; the Orange-Ulster Board of Cooperative Educational Services (BOCES); the State Parent Teacher Association; the Citizens Campaign for the Environment; and groups representing science teachers and school nurses. The objective of the Partnership was to eliminate or reduce exposure to mercury among children and others by reducing mercury in schools. Partnership members critically evaluated the usefulness of existing mercury education materials with school

personnel, identified key messages and noted those with the highest quality. In 2002, NYSDOH and Partnership members collaborated to identify the primary audiences to target for mercury education in schools, and define the optimal content and format for the planned mercury education materials.

DATA TRENDS

The number of mercury spills reported in schools (Figure 1) has been consistent in recent years. Typically, mercury spills in schools do not result in health effects because school personnel respond quickly to remove students and staff from the area of the spill. However, evacuations due to mercury spills have been very disruptive. From 2001-2010, NYSDOH received reports of 43 mercury spills in schools. Half these incidents involved evacuations. Of the 14 incidents for which evacuation data were available, 5,546 people were evacuated from the schools. Thus, eliminating or reducing mercury spills and potential mercury exposure in schools is a NYS priority.

Figure 1: Three-Year Average of Mercury Spills Reported in Schools



SOURCE: NYS Hazardous Substances Emergency Events Surveillance Program

IMPACT AND BURDEN

Breathing high levels of mercury in air can damage the nervous system and kidneys. Short-term exposure (up to a few weeks) to high levels of mercury can cause cough, shortness of breath, chest pain, nausea, vomiting, diarrhea, fever and hypertension. Longer-term exposure (more than a few weeks) to lower levels can cause tremors, insomnia, irritability, headache and memory loss. Exposure to mercury vapor is of particular concern for children and unborn babies because their nervous systems are still developing and may be more vulnerable. Other potentially vulnerable individuals include those with medical conditions of the nervous system, kidneys, or heart and vascular

system. These conditions may be worsened by exposure to mercury. Biological sampling for mercury can serve as a valuable indicator of a person's exposure.

CHALLENGES

Reduced budgets and decreased staff resources make it more difficult for schools to focus on removal of mercury and other chemicals. The cost of a mercury cleanup depends on the amount of contamination and the types of surfaces that need to be cleaned, but a past cleanup in a NYS school cost about \$24,000 for two classrooms and the connecting hallway.

Prevention Agenda Toward the Healthiest State Progress Report 2012

Public Water Supply

BACKGROUND

Maintaining high quality drinking water that meets standards is essential to protect the public's health. In cooperation with LHDs, NYSDOH regulates the operation, design and quality of public water supplies, ensures water sources are protected adequately and provides financial and technical assistance to public water suppliers.

About 93 percent of New Yorkers receive water from a public water supply system. These systems include large municipal systems such as NYC's water supply serving nearly 9 million people, privately owned companies serving municipalities, schools with their own water supply, and small stores in rural areas serving customers water from their own wells. NYS has more than 9,500 public water suppliers (Figure 1).

Table 1: Public Water Systems by System Type

Water System Type	No. of Systems	Population Served
Community	3008	17,855,926
Transient Non-Community	5830	2,826,250
Non-Transient Non-Community	736	303,126
TOTALS	9,587	20,985,579

SOURCE: Safe Drinking Water Information System

Of these systems, roughly 3,000 are community water systems that serve a residential population of nearly 18 million people year-round. More than 700 public water systems are non-transient, non-community water systems, such as schools, hospitals or factories, which have their own water supply and serve more than 300,000 people for more than six months but not year-round. Another 5,800 systems are transient, non-community water systems, such as restaurants, campgrounds or gas stations with their own water systems, which

provide water to nearly 3 million people.

CHALLENGES

- Public water systems face many challenges ahead, including aging drinking water infrastructure, an aging workforce, climate-change, modifications to federal regulations, increased public concern over emerging contaminants, and society's tendency to undervalue water.
- According to US EPA, outdated and deteriorated drinking water infrastructure poses a fundamental long-term threat to drinking water safety. In many communities, basic infrastructure costs could far exceed compliance costs. A 2008 NYSDOH report placed a conservative cost estimate of repairing, replacing and updating NYS's drinking water infrastructure at \$38.7 billion over the next 20 years.³
- Water utilities are facing retirement of water operators and the challenge of replacing them with trained and qualified replacements.
- Maintaining reliable supply and delivery of safe drinking water will require security enhancements and emergency preparedness.

The events of September 11, 2001 and, more recently, Hurricane Irene, Tropical Storm Lee, and Super Storm Sandy have increased awareness of vulnerabilities of drinking water systems to intentional acts of terrorism and natural disasters. Aging drinking water infrastructure becomes more susceptible to failure, particularly during extreme circumstances. The enhancement of security and emergency preparedness is essential to maintaining a reliable supply and delivery of safe drinking water.

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**Prevention Agenda Toward the Healthiest State
Progress Report 2012**

Unintentional Injuries

BACKGROUND

Unintentional injuries are a leading cause of death and disability among all age groups in NYS and are the top killers of New Yorkers aged 1-34 years. More than 4,700 New Yorkers die every year as a result of an unintentional injury. But injury deaths are only part of the picture. The consequences of non-fatal injuries range from temporary pain and inconvenience to long-term disability, chronic pain, and a diminished quality of life. Hospitalization and rehabilitation services are often needed. Injuries are consistently among the leading causes of hospitalization for New Yorkers of all ages. More than 130,000 individuals annually are injured severely enough to require hospitalization. Another 1.3 million unintentionally injured New Yorkers are treated and released from emergency departments each year.

An injury is any act that damages cells and organs, whether intentional or unintentional. Injuries are predictable and preventable events. An injury may affect family members who are called on to care for an injured person. This can result in stress, time away from work and, sometimes, lost income. The economic impact of injuries includes the costs associated with medical treatment and lost productivity, such as wages and accompanying fringe benefits, or the ability to perform one's normal household responsibilities. In 2000, the estimated lifetime economic impact of all US injuries exceeded \$406 billion.¹

NYSDOH works to reduce the burden of unintentional injuries through surveillance and programs such as traffic safety, fall prevention, fire prevention, and traumatic brain injury prevention.

DATA TRENDS

Males are twice as likely to die from an unintentional injury as females (Table 1, Figure 1). The highest rates of unintentional injury deaths are for children less than a year old and those aged 65 years and older. Traumatic brain injuries are associated with 27.3 percent of all unintentional injury deaths. The rate of unintentional injury deaths has remained somewhat consistent, with increases in 2007 and 2008.

Females have a slightly higher rate of hospitalizations due to unintentional injuries, primarily fall-related injuries for people age 65 years and older (Table 2, Figure 2). This age group also accounts for the highest number and rate of unintentional injury hospitalizations. Annually, an average of \$4.1 billion in hospitalization charges is attributed to unintentional injuries. The rate of unintentional injuries declined in the late 1990s, but has steadily increased since then, with an 18.1 percent increase between 1999 and 2008.

Males are more likely to be treated in an emergency department due to an unintentional injury, with younger age groups more likely to be seen there. Although there was an increase in ED visits from 2005-2008, NYSDOH began collecting ED data in 2005, and time trends are not well established (Table 3, Figure 3).

Table 1: Incidence of Unintentional Injury Deaths NYS Residents, 2006-2008

Deaths		
Characteristics	Mean Annual Frequency	Rate per 100,000 Residents
Total	4,782	24.7
Age Group		
0<1	38	15.5
1-4	44	4.6
5-9	32	2.8
10-14	43	3.4
15-19	191	13.7
20-24	306	22.0
25-44	1,079	20.1
45-64	1,275	25.5
65+	1,773	69.3
Gender		
Male	3,109	33.1
Female	1,673	16.8
Unknown	0	n/a
Percent Traumatic Brain Injury	27.3%	
Year of Discharge / Death	Annual Frequency	Rate per 100,000 Residents
1995	4,269	23.0
1996	4,052	21.8
1997	4,120	22.1
1998	3,867	20.6
1999	4,217	22.3
2000	3,947	20.8
2001	4,397	23.0
2002	4,317	22.5
2003	4,379	22.9
2004	4,101	21.3
2005	4,416	22.9
2006	4,413	22.9
2007	4,941	25.6
2008	4,992	25.6

Rate = Frequency/Population *100,000

SOURCE: NYSDOH Vital Statistics

Table 2: Incidence of Unintentional Injury Hospitalizations, NYS Residents, 2006-2008

Hospitalizations		
Characteristics	Mean Annual Frequency	Rate per 100,000 Residents
Total	134,381	693.9
Age Group		
0<1	963	389.3
1-4	3,163	329.1
5-9	2,361	201.1
10-14	2,938	234.9
15-19	4,639	332.5
20-24	4,748	342.1
25-44	20,179	374.9
45-64	29,247	584.1
65+	66,144	2,584.8
Gender		
Male	64,568	687.4
Female	69,813	700.1
Unknown	*	n/a
Percent Traumatic Brain Injury	12.3%	
Mean Charge per Hospitalization	\$30,519	
Three Year Total Hospitalization	\$12.3 Billion	
Average Length of Hospital Stay (days)	7	
Year of Discharge / Death	Annual Frequency	Rate per 100,000 Residents
1995	124,088	669.9
1996	119,285	641.7
1997	116,498	624.4
1998	113,108	603.1
1999	110,927	587.5
2000	116,021	610.7
2001	115,540	605.2
2002	117,365	612.4
2003	125,170	651.0
2004	128,199	664.9
2005	131,211	681.5
2006	132,895	688.4
2007	135,043	699.8
2008	135,206	693.7

Rate = Frequency/Population *100,000

*Data based on frequencies less than six not reported

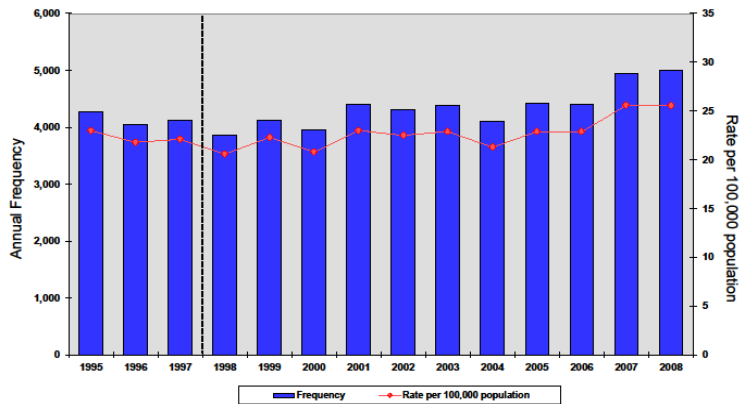
SOURCE: SPARCS

Table 3: Incidence of Unintentional Injuries Emergency Department[†] Visits, NYS Residents, 2006-2008

Emergency Department Visits		
Characteristics	Mean Annual Frequency	Rate per 100,000 Residents
Total	1,361,361	7,031.5
Age Group		
0<1	13,171	5,325.7
1-4	103,077	10,723.4
5-9	90,248	7,685.4
10-14	119,199	9,532.1
15-19	134,253	9,623.8
20-24	119,284	8,594.4
25-44	381,666	7,091.5
45-64	262,041	5,232.9
65+	138,695	5,420.1
Gender		
Male	731,689	7,790.1
Female	629,907	6,316.7
Unknown	36	n/a
Percent Traumatic Brain Injury	5.3%	
Mean Charge ED[†] Visit	\$1,068	
Three Year Total ED[†] Visit Charges	\$4.4 Billion	
Average Length of Hospital Stay (days)	n/a	
Year of Discharge / Death	Annual Frequency	Rate per 100,000 Residents
1995	n/a	n/a
1996	n/a	n/a
1997	n/a	n/a
1998	n/a	n/a
1999	n/a	n/a
2000	n/a	n/a
2001	n/a	n/a
2002	n/a	n/a
2003	n/a	n/a
2004	n/a	n/a
2005	1,323,554	6,874.0
2006	1,344,677	6,965.0
2007	1,340,294	6,945.4
2008	1,399,923	7,182.7

†The incidence of ED visits does not include patients who were subsequently admitted into the hospital
 Rate = Frequency/Population *100,000
 SOURCE: SPARCS

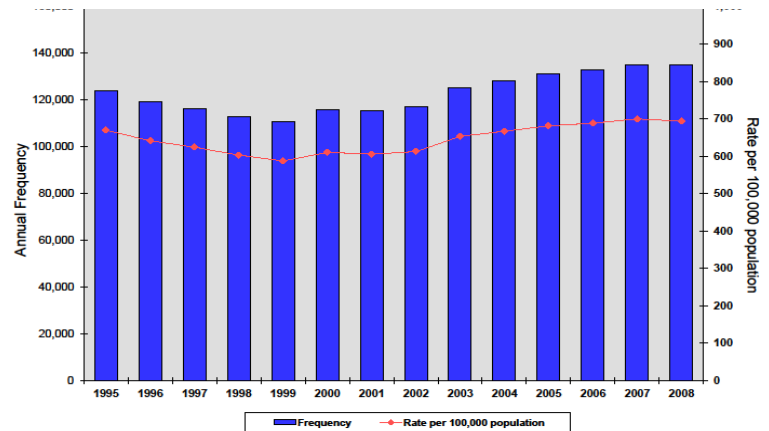
Figure 1: Incidence of Unintentional Injury Deaths NYS Residents, 1995-2008



*In 1999 the United States began using the World Health Organization's revised International Classification of Diseases coding book (ICD 10) for mortality data. Differences seen between data coded using the 9th revision (ICD 9) and ICD 10 may be due to coding changes and not actual differences in injury causes.

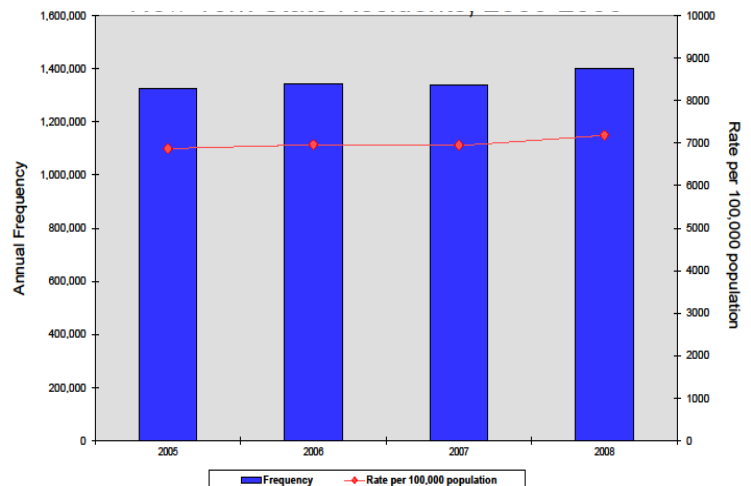
SOURCE: NYSDOH Vital Statistics

Figure 2: Incidence of Unintentional Injury Hospitalizations, NYS Residents, 1995-2008



SOURCE: SPARCS

Figure 3: Incidence of Unintentional Injury Emergency Department[†] (ED) Visits, NYS Residents, 1995-2008



†The incidence of ED visits does not include patients who were subsequently admitted into the hospital.

DISPARITIES

Males are twice as likely as females to die due to an injury. The highest rates of deaths and hospitalizations are for people aged 65 and older, whereas the highest rate of ED visits is for children aged 1-4 years. Among children, the highest rates of death and hospitalization are for those less than 1 year old. More than one-quarter of those who die from injury sustain a traumatic brain injury.

The leading causes of unintentional injury deaths, hospitalizations and ED visits are shown in Tables 4-6. Overall, falls are the leading cause of hospitalizations and ED visits for almost all age groups, and are the leading cause of death for those aged 65 years and older. Motor vehicle traffic injuries to vehicle occupants, pedestrians, bicyclists and motorcyclists, are a leading cause of deaths, hospitalizations and ED visits for all ages.

Table 4: Deaths Due to Unintentional Injury, Leading Causes by Age Group, NYS Residents, 2006-2008

Rank	1	2	3
<1	Suffocation	Fire / Flame	*
1-4	Drowning	Fire / Flame	Suffocation
5-9	Fire / Flame	MVT [^] , Pedestrian	MVT [^] , Unspecified
10-14	MVT [^] , Occupant	Drowning	Fire / Flame
15-19	MVT [^] , Occupant	MVT [^] , Unspecified	Poisoning
20-24	Poisoning	MVT [^] , Occupant	MVT [^] , Unspecified
25-44	Poisoning	MVT [^] , Unspecified	MVT [^] , Occupant
45-64	Poisoning	Fall	MVT [^] , Unspecified
65+	Fall	Unspecified	Suffocation

MVT[^] = Motor Vehicle Traffic

*Data based on frequencies less than six are not reported.

SOURCE: NYSDOH Vital Statistics

County Level Data

County comparisons for age-adjusted unintentional injury hospitalizations and ED visits can be problematic for counties that border other states, particularly Tioga County. Because there are no hospitals in Tioga County, many residents are seen in Pennsylvania hospitals, effectively lowering NYS injury rates 308.7 per 100,000 residents. The next two lowest age-adjusted hospitalization rates are for Jefferson County (483.2) and Madison County (499.6). The three highest county age-adjusted

hospitalizations rates are for the Bronx (809.3), Warren (797.8), and Montgomery (761.9). For ED visits, the lowest age-adjusted

Table 5: Hospitalizations Due to Unintentional Injury, Leading Causes by Age Group, NYS Residents, 2006-2008

Rank	1	2	3
<1	Fall	Hot Object / Scald	Unspecified
1-4	Fall	Hot Object / Scald	Poisoning
5-9	Fall	Natural / Environmental	MVT [^] , Pedestrian
10-14	Fall	Struck by / Against	MVT [^] , Pedestrian
15-19	Fall	MVT [^] , Occupant	Struck by / Against
20-24	MVT [^] , Occupant	Fall	Poisoning
25-44	Fall	Poisoning	MVT [^] , Occupant
45-64	Fall	Poisoning	Unspecified
65+	Fall	Unspecified	MVT [^] , Occupant

MVT[^] = Motor Vehicle Traffic

SOURCE: SPARCS

Table 6: ED Visits Due to Unintentional Injury, Leading Causes by Age Group, NYS Residents, 2006-2008

Rank	1	2	3
<1	Fall	Struck by, Against	Unspecified
1-4	Fall	Struck by, Against	Natural / Environmental
5-9	Fall	Struck by, Against	Natural / Environmental
10-14	Fall	Struck by, Against	Overexertion
15-19	Struck by, Against	Fall	Overexertion
20-24	Fall	Struck by, Against	MVT [^] , Occupant
25-44	Fall	Overexertion	Struck by, Against
45-64	Fall	Cut / Pierce	Overexertion
65+	Fall	Unspecified	Struck by, Against

MVT[^] = Motor Vehicle Traffic

SOURCE: SPARCS

rates are for Cortland (2,886.3), Tioga (4,194.8), and Queens (4,439.1) counties. All five NYC boroughs are in the bottom 15 for age-adjusted unintentional injury ED rates. The three highest age-adjusted ED rates are Chemung (14,283.0), Schuylar (14,271.2), and Montgomery (13,264.2) counties.

CHALLENGES

Federal and State funding has decreased, resulting in the elimination of some programs, such as the fire prevention project.

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Work-Related Injuries

The NYSDOH is committed to the prevention of workplace illnesses, injuries and fatalities. Surveillance is conducted to identify occupational illnesses, and then develop and provide outreach and prevention services. Workplace injuries and illnesses can be prevented by control or elimination of hazards.

Work-Related Hospitalizations, Fatal Work-Related Injuries and Injured Responders

BACKGROUND

In the US, 4,547 workers died from traumatic occupational injuries in 2010.¹ Another 49,000 deaths are attributed to work-related diseases each year.² In 2010, an estimated 3.1 million private-sector workers had a nonfatal occupational injury or illness. Of those workers, approximately half were transferred, restricted, or took time away from work.³ In 2009, an estimated 2.6 million workers were treated in EDs for occupational injuries. In addition, approximately 80,000 were hospitalized.⁴ The most common workplace injuries and illnesses are sprains and strains, pain, bruises and contusions, fractures, cuts and lacerations, heat burns, carpal tunnel syndrome and tendinitis, chemical burns and amputations.

In NYS, there were 8,193,900 people employed in 2010. Of those, 228,100 had recordable nonfatal occupational injuries and illnesses (rate of 3.4 per 100 full-time workers), with 127,000 of those involving days away from work, job transfer or restriction (rate of 1.9 per 100 full-time workers).

Work-related injuries and illnesses are costly. Their economic burden nationally was about \$250 billion in 2007, an amount at least as large as the cost of cancer. Workers' compensation (WC) covers less than 25 percent of these costs.¹⁰ In 2009, employers spent nearly \$73.9 billion on workers' compensation,¹¹ but this represents only a portion of total work-related injury and illness costs borne by employers, workers and society overall. In NYS, \$4.1 billion was spent on WC benefits. Some types of workers do not have this coverage, including clergy, self-employed, part-time domestic workers, farm workers and those covered by other WC systems, including public school teachers, aides,

police officers, firefighters and sanitation workers in NYC.

NYSDOH collects information on every person discharged from a NYS hospital (inpatient) or ambulatory surgery and emergency department (outpatient). The designation of WC as the expected principal reimbursement is used as a proxy for whether the condition was work-related. Individuals hospitalized for work-related injuries and illnesses have some of the most serious and costly adverse work-related health conditions.

BURDEN

Occupational diseases are under-recognized and under-reported. Failing to consider the workplace factors and their causes that may contribute to a patient's condition can result in unnecessary tests, inappropriate referrals and missed opportunities to protect others who may be at risk. Exposures to dusts, fumes, chemicals, radiation, or loud noise can increase the risks for occupational illnesses. Many occupational factors combine with other factors to cause disease.

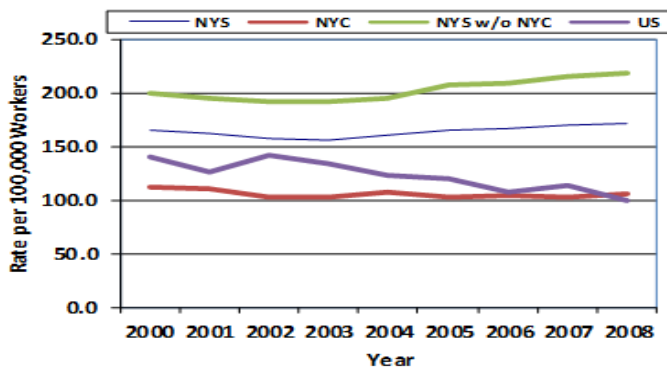
First responders are often at higher risk because they are exposed to unknown levels and combinations of chemicals while trying to maintain public safety. Firefighters are exposed routinely to carbon monoxide, acid gases, and the complex and reactive mixtures of toxic substances that are contained in fire smoke and building debris.

DISPARITIES

Geographic

Outside NYC, work-related hospitalization rates vary from a low of 47.3 per 100,000 workers in Clinton County to a high of 433.5 per 100,000 workers in Chautauqua County. The rates are relatively low in NYC with an overall rate of 104.7 per 100,000 workers. As seen in Figure 1, the rates in counties outside NYC have been steadily increasing, while the NYC rate has remained stable and the national rate has decreased.

Figure 1: Rate of Work-related Hospitalization, NYS and US, by Year



SOURCE: SPARCS, Bureau of Labor Statistics' Current Population Survey

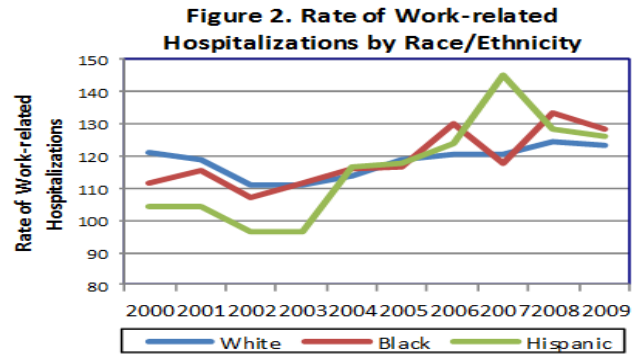
Gender

The percentage of females hospitalized for work-related conditions has increased steadily from 27 percent in year 2000 to 32 percent in 2009, even though the percentage of women in the workforce has remained stable at approximately 47 percent.

Race and Ethnicity

Figure 2 shows the gradual increase in the rate of hospitalizations for all races and ethnicities; however, there has been a more substantial increase for Hispanics.

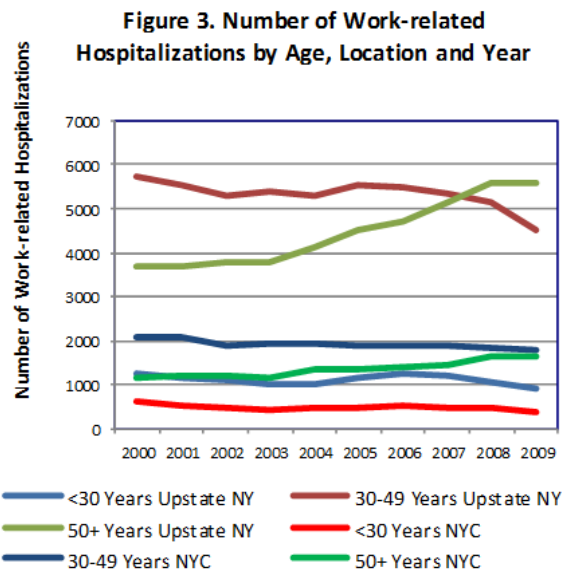
Figure 2: Shows gradual increase in rate of hospitalizations for all races/ ethnicities; however, there has been a more substantial increase for Hispanics.



SOURCE: SPARCS

Age

Figure 3 displays the number of work-related hospitalizations by age group for NYC compared to the rest of the State. Overall, the number of work-related hospitalizations is much higher outside NYC for those aged 30 years and older. There has been a significant increase in the number of workers aged 50 and older being hospitalized for work-related conditions, primarily outside NYC. This increase coincides with an increased number of older individuals working longer due to the national economic crisis. The number of hospitalizations has been consistently high for individuals aged 30-49 years living outside NYC, although these have decreased in the last few years.



SOURCE: SPARCS

RISK AND PROTECTIVE FACTORS

The most common causes of work-related injury hospitalizations are:

- Falls
- Motor vehicle/other road vehicle crashes
- Accidental poisonings
- Submersion, suffocation and foreign bodies
- Injuries inflicted by others

Among the falls, more than 50 percent occurred among workers who are age 50 or older.

CHALLENGES

- Occupation and industry information is not included in electronic health records and

hospitalization data, making it difficult to conduct surveillance of occupational illnesses. Inclusion of these variables would allow more targeted analysis to identify whether certain occupations are at high risk for specific health outcomes. All databases collecting health outcome data in NYSDOH should include industry and occupation fields.

- With the aging of the population, the burden of falls is expected to rise dramatically. The number of work-related hospitalizations has increased in the oldest age group, yet there are few programs targeting workers of all ages with additional emphasis on older workers.

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HIV / STDs

BACKGROUND

HIV/AIDS and sexually transmitted diseases (STDs) continue to be significant public health concerns. NYS remains at the epicenter of the HIV epidemic in US, with more people living with HIV/AIDS than in any other states. By the end of 2010, approximately 129,000 New Yorkers were living with HIV/AIDS, with nearly 3,950 new diagnoses of HIV infection that year.¹ Furthermore, the 123,122 STDs reported to NYSDOH comprised 70 percent of all communicable diseases reported statewide in 2010.²

The same behaviors and community characteristics associated with HIV also place individuals and communities at risk for STDs and viral hepatitis. Additionally, if a person living with HIV has an STD, HIV is more likely to be passed to a partner during sex. Likewise, having an STD increases the risk of an HIV-negative person being infected with HIV if exposed to the virus. Epidemiological data increasingly point to HIV, STDs and viral hepatitis as “syndemics,” infections occurring in similar groups of persons with associated risk behaviors. Notably, in the US in 2010, the leading cause of death among people with HIV was liver disease from co-infection with Hepatitis-C virus.³

BURDEN and DATA TRENDS

The CDC estimates that 1.2 million people in the US are living with HIV infection, with one in five (21 percent) unaware of it.⁴ An estimated 50,000 Americans become infected with HIV each year. More than 17,700 people with AIDS are estimated to have died in 2009.

Preliminary 2010 NYS data on new HIV diagnoses show several trends. The proportion of newly diagnosed infections in men was 75 percent, compared to 71 percent in 2005, continuing a trend toward an increasing gender imbalance. Black non-Hispanics and Hispanics continue to be affected disproportionately; together, they account for 75 percent of new diagnoses, unchanged from 2005. An increasing proportion of new diagnoses

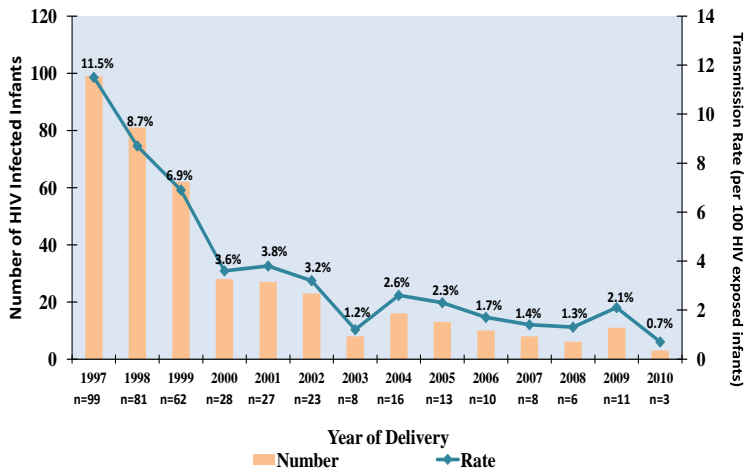
(46 percent) is seen in men who have sex with men (MSM); in 2005 they represented 36 percent of new infections. The age distribution among newly diagnosed persons has been relatively stable, with 42 percent of persons newly diagnosed at age 40 or older.

Characteristics of New Yorkers living with HIV infection remain constant year to-year. At the end of 2009, 70 percent were male. Most (61 percent) had a diagnosis of AIDS; 39 percent had HIV infection that had not progressed to AIDS. More than three-quarters (76 percent) were age 40 years or older, with 11.3 percent 60 or older. The racial/ethnic distribution included 21 percent White, 43 percent Black, 32 percent Hispanic, 1.2 percent Asian/Pacific Islander, 0.1 percent Native American and 2.8 percent of more than one racial group. Multiple risks were identified: 31 percent MSM, 19 percent injection drug users (IDU), 2.7 percent MSM and IDU, 16.7 percent heterosexual, 11.6 percent female presumed heterosexual, 17 percent unknown risk, 2.7 percent pediatric risk, and 0.2 percent blood product exposure.

The NYS epidemic has changed dramatically over the past two decades for two population subgroups that had been affected heavily by the epidemic (Figure 1). Mother-to-child transmission (MTCT) of HIV has been nearly eliminated – its rate in 2010 was less than 1 percent, which meets one of CDC’s criteria for elimination. The second CDC criteria is less than one baby born with HIV per 100,000 births, which NYS came very close to meeting in 2010, with 1.3 cases per 100,000 births.

Since 1997, at least 749 infants have been saved from lifetimes of living with HIV, averting more than \$215 million in HIV – a rate of 11.5 percent since 1997, when newborn HIV screening was initiated to 0.7 percent in 2010. Concurrently, NYS has seen a 74 percent decline in the number of HIV-positive women delivering annually since 1990, as fewer women of childbearing age were infected with HIV.

Figure 1: Number and Rate of HIV Infected Infants by Year of Delivery 1997-2010



SOURCE: NYS HIV/AIDS Surveillance Data is from the NYSDOH AIDS Institute Bureau of HIV/AIDS Epidemiology

In the late 1980s and early 1990s, most HIV infection in NYS was contracted by injection drug use. In 1992, the Commissioner of Health was given regulatory authority to approve syringe exchange programs (SEPs). In 2000, the Expanded Syringe Access Program (ESAP) was established, augmenting harm reduction efforts for IDUs by adding pharmacy sales and provision of syringes by health care professionals, while establishing safe sharps disposal programs throughout the State. The “peer-delivered syringe exchange” program was approved. After documented success, the pilot program was used as a model of exchange. A new State law added language to penal law to make it explicit that a person is not criminally liable for possessing syringes and drug residue in or on syringes that the person may legally possess based on his or her participation in the SEP or ESAP.

Currently, 21 SEPs furnish nearly 3 million sterile syringes annually, and more than 3,200 entities are ESAP-registered providers. There has been a dramatic reduction in the proportion of injection drug users (includes IDU and IDU/MSM) among new cases, from 54 percent of new AIDS cases in 1992 to 4 percent in 2010.

STDs, including but not limited to *Chlamydia*, *Gonorrhea* and *Syphilis*, significantly impact the health of NYS citizens, pose a substantial economic burden and contribute to reproductive health problems, such as infertility, pelvic inflammatory disease and ectopic pregnancy. More than half of new STDs reported each year are among individuals aged 15-24 years.

CDC reports 1,307,893 *Chlamydia* cases were reported in the US in 2010.⁶ The rate of 426.0 cases per 100,000 population is an increase of 5.1 percent over the 405.3 rate reported in 2009. In 2010, NYS had the eighth highest rate (510.8 *Chlamydia* cases per 100,000) among all states, with a five percent increase from 2009.

Gonorrhea is less common, with 309,341 cases reported nationwide in 2010 (100.8 cases per 100,000 population, a 2.8 percent increase over the 2009 rate).⁷ NYS had a 7.4 percent increase from 2009, with a rate slightly below the national average; 22 states had a higher rate than NYS.

NYS ranked eighth among states in 2010 in case rates for primary and secondary *Syphilis* per 100,000 population.⁸ The US rate was 4.5 cases per 100,000 population with 13,774 cases reported, a decrease of 1.6 percent from 2009 and the first decline in 10 years. Similarly, NYS saw a decrease of 7.0 percent, with the most cases reported in MSM. Table 1 shows the 2010 STD reported case rates and case geographic distribution.

Table 1: *Chlamydia*, *Gonorrhea* and *Syphilis* (primary and secondary) case rates (per 100,000 population) in NYS, 2010

	NYC	Rest of State	NYS
<i>Chlamydia</i>	757.2	330.8	510.8
<i>Gonorrhea</i>	147.2	53.9	93.5
<i>Syphilis</i> (1° and 2°)	11.4	1.3	5.6

SOURCE: NYS STD Surveillance Data is from the NYSDOH AIDS Institute Bureau of STD Prevention and Epidemiology

While rates of *Chlamydia*, *Gonorrhea* and *Syphilis*, in NYS excluding New York City (NYC), are lower than the national average, some areas have *Gonorrhea* and *Chlamydia* rates among the highest in the nation. In addition, these three diseases represent only a fraction of the burden of STDs.

Some common STDs, e.g., Human Papilloma virus and Herpes-Simplex virus, are not required to be reported.

DISPARITIES

Considerable variation occurs in the geographic distribution of HIV and STDs. The HIV and *Syphilis* epidemics are heavily concentrated in NYC. Consistent with past years, about 80 percent of new HIV infections were reported in NYC residents in 2010, with NYC residents accounting for 87 percent of reported primary and secondary *Syphilis* cases. Counties in the greater NYC metropolitan area have the highest numbers of cases of both infections in NYS excluding NYC. Although all areas of the State are affected, most of the remaining HIV cases are diagnosed among residents of Upstate cities. NYC residents accounted for 68 percent and 63 percent of the State’s reported *Gonorrhea* and *Chlamydia* cases, respectively, in 2010.

HIV and STDs disproportionately affect some subpopulations, particularly persons of color, persons with low incomes, and MSM. Of additional concern are the following trends:

New HIV Infections Among Young MSM of Color

New HIV infections have significantly increased among young MSM, especially Black non-Hispanic and Hispanic men. There were 227 new diagnoses of HIV infection in young MSM of color (13-24 years of age) in 2003. In 2010, 440 were diagnosed, a 94 percent increase in reported new diagnoses over this period. Given issues related to youth, poverty, race and culture, young MSM of color are more likely to be marginalized and isolated. The development of effective prevention interventions and methods of engaging this population is a challenge.

Gonorrhea

While *Chlamydia*, *Gonorrhea* and early *Syphilis* rates are higher in Black non-Hispanics than in Hispanics, with White non-Hispanics having lower rates than both groups, the most dramatic disparities are seen with *Gonorrhea*. Case rates in Black non-Hispanics are 18 times higher than in White non-Hispanics (based on case data with known race). If *Gonorrhea* becomes more difficult

to treat through anticipated new antibiotic resistance patterns, young Black non-Hispanic men and women will suffer most.

Table 2:

Year	Estimated New Infections	95% Confidence Intervals	Rate per 100,000 Population	NYS as a Percent of US Total
2006	5,126	4,290 - 5,962	32	10.5%
2007	5,025	4,292 - 5,757	31	9.0%
2008	4,439	3,725 - 5,152	27	9.3%
2009	4,040	3,351 - 4,728	25	8.4%

SOURCE: NYS HIV/AIDS Surveillance Data is from the NYSDOH AIDS Institute Bureau of HIV/AIDS Epidemiology

CHALLENGES

■ Aging of the HIV Epidemic

In 2002, 23 percent of persons living with HIV/AIDS (PLWHA) were age 50 years or older. In 2010, that percentage had grown to more than 42 percent, or 54,000 people. Nineteen percent of new HIV diagnoses are among people age 50 or over. The number of PLWHA age 50 or over in NYS will double from 2008 to 2025.add reference for this statement: New York State Department of Health. AIDS Institute. Fifty percent to 60 percent of PLWHA will be at least 50 years of age by 2025. Further, the number of PLWHA age 65 and older will increase nearly six-fold. These trends underscore the need to integrate culturally sensitive HIV/AIDS health care and supportive services with other services for older persons.

Comprehensive systems of care must address multiple medical needs. Prevention programs must not only raise HIV awareness and encourage HIV testing among older people, but also should focus on reducing the risk factors for common age-related chronic diseases among PLWHA. Similar to other chronic diseases, the treatment of HIV requires proactive care coordination across clinical settings, case management to address the full

range of patient needs and communication among disciplines, as well as supportive services that help patients access and remain in care. In addition, an analysis of the HIV population's current and future long-term care needs will be required to assure that institutional and community-based long-term care services meet the needs of an aging HIV population.

■ **Late HIV/Concurrent HIV/AIDS Diagnosis and Entry into Care**

In NYS, 25.4 percent of all persons newly diagnosed with HIV have a concurrent AIDS diagnosis. Within one year of HIV diagnosis, 32.3 percent have AIDS; these persons are considered to have a “late” diagnosis of HIV infection. Using viral load data reported to the surveillance system on persons newly diagnosed in 2005-2006 as a marker for assessing entry to HIV care, only 82 percent appeared to have entered care within 12 months of diagnosis.¹ These data are particularly disturbing given the comprehensive continuum of HIV care and services in NYS. This information demonstrates that it is critical to conduct targeted outreach and make testing, care and services more accessible to individuals who are being diagnosed and entering care very late in the course of their infection.

■ **Retention in HIV Care**

An unmet need analysis (unpublished data) indicates that as many as 34 percent of NYS residents are aware of their status (about 44,000 persons) and may not have received HIV-related primary care in the past 12 months. The importance of retaining HIV patients in care is a paramount challenge because of the demonstrated linkage of retention to viral load suppression, which correlates not only with improved health outcomes and lower health resource utilization, but with concomitant decreased transmission of HIV. Recognizing that treatment is prevention, the health care and prevention communities must focus their efforts on engaging and retaining those most likely to stop receiving care or who use the health care system sporadically. These patients, who often have several chronic problems requiring multiple interventions, demand greater resources to link effectively in a sustained relationship with

health care providers to achieve multiple health outcomes while reducing the spread of HIV. Retention in care is the single most important factor to achieve multiple positive health outcomes while reducing the spread of HIV.

■ **Viability of the HIV Uninsured Care Programs**

The programs through which uninsured and underinsured persons living with HIV/AIDS receive life-saving medications and care must further increase enrollment through payment of insurance premiums and cost sharing for eligible individuals to assure access to comprehensive medical coverage.

■ **Changing Social Contexts for Identifying Sexual Partners**

Many people with newly diagnosed HIV and STDs, especially MSM, report seeking anonymously, sexual partners through the Internet and social media. The anonymity decreases the likelihood that Partner Services, an evidence-based prevention activity that focuses on notification and appropriate medical follow-up of partners of infected persons, will be successful in assuring that partners are treated. Partner Services interrupt the chains of transmission and reduce potential long-term sequelae of HIV and STDs. New interventions such as Internet Partner Services and new social media skill sets among the Disease Intervention and Field Services workforce are needed to maintain effective prevention activities.

■ **Workforce**

The healthcare workforce faces numerous challenges including the increasing complexity of managing anti-retroviral therapy; a declining number of experienced HIV providers, particularly in Upstate and rural areas of NYS; a dearth of young practitioners choosing to specialize in HIV; decreased financial reimbursement for HIV care; and changing health care delivery models. Unfortunately, many primary care clinicians continue to be reluctant to take a sexual history or discuss sexual health with their patients, further limiting the availability of effective HIV and STD prevention interventions, screening and care.

Reference

1

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**Prevention Agenda Toward the Healthiest State
Progress Report 2012**

Vaccine-Preventable Diseases

BACKGROUND

The prevention of vaccine-preventable diseases is an important public health goal achieved through immunization. Although vaccine-preventable disease rates are low in NYS and in the US as a whole, the prevalence of certain diseases is beginning to increase due to pockets of under-immunization and global travel. Among US children, immunization rates are high because of school entry requirements, the Vaccines for Children Program, and insurance coverage for vaccines, but increasingly children are exempted from school requirements for religious reasons or concerns about vaccine safety. Among US adults, coverage is not optimal because many are not aware of the importance of immunization, or because they lack insurance coverage. Indeed, the majority of vaccine-preventable diseases now occur among adults.

Immunizations can be given across the lifespan, and thus their impact can be felt from birth to death.

DATA TRENDS*

CHILDREN

In NYS, immunization rates for children between 19 and 35 months of age who met the 4:3:1:3:3:1 benchmarks (4 DTaP, 3 polio, 1 MMR, 3 Hib, 3 Hep B, and 1 varicella) are measured as part of the National Immunization Survey (NIS). NIS data show nationwide immunization rates in 2010 were 74.9 percent, compared to 73 percent in NYS (Figure 1).

ADULTS

The Behavioral Risk Factor Surveillance System (BRFSS) is the world's largest ongoing telephone health-survey system, tracking health conditions and risk behaviors in the US yearly since 1984.

According to the 2010 BRFSS, the rate of annual influenza vaccine coverage among NYS adults aged 65 years and older was 68.3 percent. The same group reported that 66.1 percent had ever received the pneumococcal vaccine³ (Figures 2 and 3).

Figure 1:

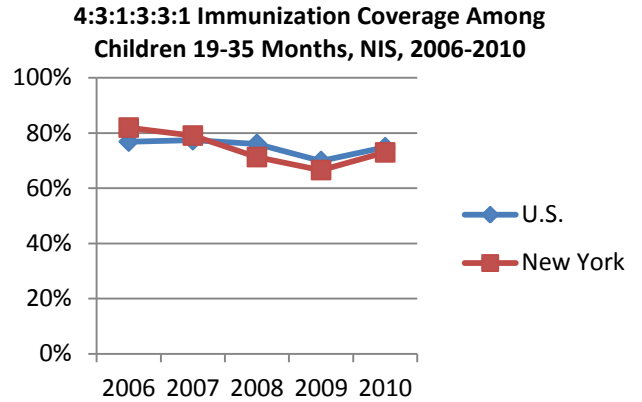


Figure 2:

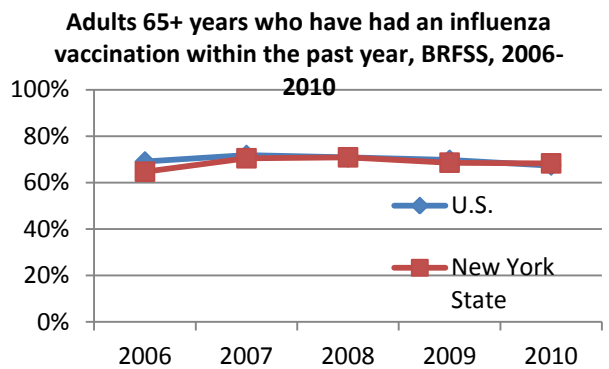
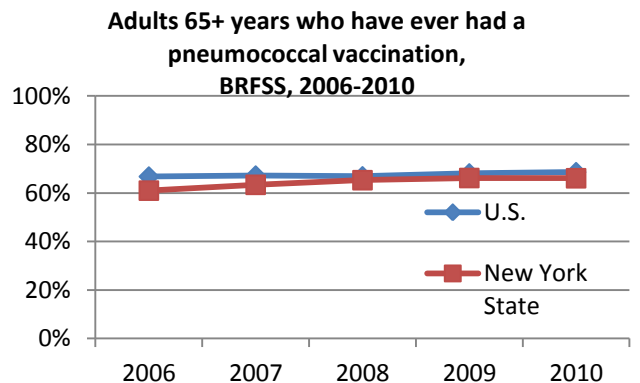


Figure 3:



*NYS (outside of NYC) and NYC have their own independent health departments, NYSDOH and NYC DOHMH, respectively.

For the purpose of this section, please note the following definitions: NYS= NYC + Upstate NY; NYC= NYC only; and NY= rest of the State, outside of NYC.

DISPARITIES

Geography

CHILDREN

Variation in immunization rates exists among children, shown by the range of total medical/religious exemptions in 2010-2011 (from a low of 0.14 percent in Orleans County to 7.23 percent in Yates County). The NYS average for total exemptions was 0.51 percent.⁵

Race and Ethnicity

ADULTS

In 2010, NYS influenza vaccination rates for adults aged 65 years and older showed significant disparities by race and ethnicity. White non-Hispanic adults had significantly higher rates of seasonal influenza vaccination compared with Black non-Hispanics and Hispanics (71.4 percent vs. 53.3 percent and 58.6 percent, respectively).³

In 2010, NYS pneumococcal vaccination rates for adults 65 years and older demonstrated disparities between White non-Hispanic adults and Black non-Hispanic adults (68.4 percent and 61.8 percent, respectively).³

Gender

According to the 2010 BRFSS, NYS males aged 65 years and older had a higher rate of influenza vaccine coverage than females in this age group (71.5 percent vs. 66.1 percent); this difference was statistically significant. Females aged 65 years and older had a higher rate of pneumococcal vaccine coverage than males (67.0 percent vs. 64.8 percent); however, this difference was not statistically significant.³

Income and Education

ADULTS

Flu vaccination rates were highest in the NYS adults 65 and older with greater incomes (>\$50,000: 73.7 percent) and lowest among those with incomes under \$25,000 (64-65 percent).³

Adults with more education were more likely to have received a flu vaccine within the last year (less than high school: 56.9 percent vs. college graduate: 71.4 percent).³ NYS adults 65 and older with incomes between \$35,000-49,999 were most likely

to have ever received a pneumococcal vaccine (69.5 percent).³

NYS adults 65 and older those who had completed at least some post-high school education were more likely to have ever had a pneumococcal vaccine (68-69 percent) than those with less than a high school education or a high school diploma/GED (58-65 percent).³

BURDEN

In NYS, there was one case of Tetanus, 721 cases of Pertussis, two cases of measles, 663 cases of mumps, and two cases of *Haemophilus Influenza Type B* (Hib) among children aged 5 years or younger (2010). Also, 73 cases of acute Hepatitis-B infection, including one perinatal Hep-B infection, and 1,232 cases of invasive pneumococcal disease were reported to NYSDOH.⁶ During the 2010-2011 influenza season, 4,519 flu hospitalizations and seven pediatric flu deaths were reported to NYSDOH.⁷

CHALLENGES

■ Medical/Religious Exemptions

An increase in the number of exemptions from NYS school mandates poses a risk to the population as whole. While the rate of exemption claims remains low overall, the county-by-county variation impacts herd immunity (also known as community immunity), which occurs when the vaccination of a significant portion of a population provides a measure of protection for individuals who have not developed immunity. As the proportion of individuals who are resistant increases, the probability that a susceptible individual will come in contact with an infectious individual becomes smaller.

With increasing diversity of the population and more travel by NYS residents, the ability to transmit vaccine-preventable diseases to people who are under-vaccinated or unvaccinated is a significant concern.

■ Vaccine Safety Misinformation

Media attention in recent years has focused more on unfounded claims of vaccine harm, with less attention to scientifically accurate studies of

vaccine safety. Lacking the full range of information, some parents delay or skip vaccinations, and vaccine-preventable diseases have begun to re-emerge with deadly results.

■ Vaccine Shortages

A nationwide shortage of Hib-containing vaccines occurred from December 2007 to July 2009.^{9,10} During that time, CDC recommended temporarily deferring the 12 to 15-month booster dose of Hib vaccine for healthy children.⁹ As a result, 4:3:1:3:3:1 immunization coverage rates declined in 2008 and 2009 at the national level, as well as in

NYS. Pediatric and adult vaccine shortages continue to occur and are unpredictable.

■ Lack of Awareness of Adult Immunizations

Despite ongoing education efforts, many older adults remain unaware of their personal risk of vaccine-preventable diseases or of the availability of vaccinations to prevent them. The lack of awareness is compounded by a perception that immunizations are intended for children, a lack of recommendations for adult immunization from their health care provider, and missed opportunities to vaccinate older adults during acute or chronic care visits.

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