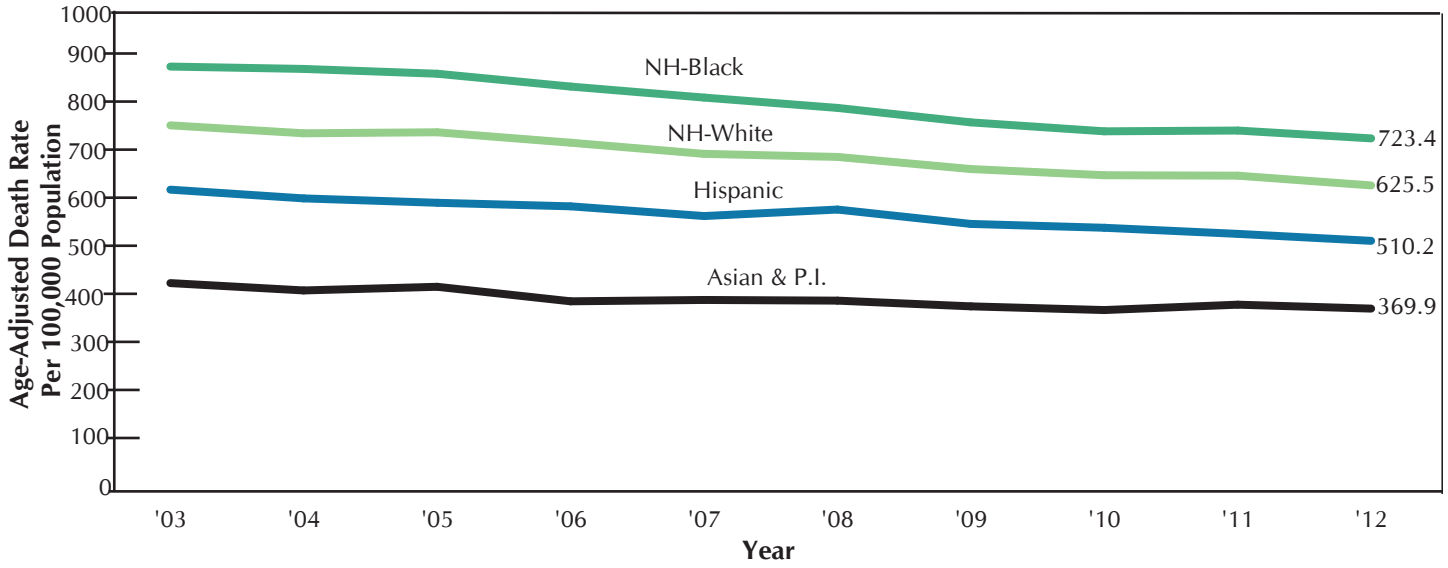
SUMMARY OF VITAL STATISTICS 2012
THE CITY OF NEW YORK
EXECUTIVE SUMMARY
WITH A SPECIAL SECTION ON DEATHS DUE TO HURRICANE SANDY

Declines in Racial/Ethnic Age-Adjusted Death Rates, New York City, 2003-2012



Health

February 2014

BUREAU OF VITAL STATISTICS, NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
125 WORTH STREET, CN 7, NEW YORK, NEW YORK, 10013

NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE

Dear Fellow New Yorker:

Each year, the New York City Department of Health and Mental Hygiene's *Summary of Vital Statistics* presents data on numerous, important health indicators, such as life expectancy, infant mortality, and leading causes of death, which are used to assess and compare the health of communities and nations. We use these vital statistics to monitor the health of New Yorkers, track our progress and identify areas that need additional attention.

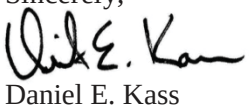
For the first time in 2012, the Health Department presents select indicators, such as age-adjusted death rates, by neighborhood-level poverty in the summary. This innovation will enable users to assess and monitor the impact of socioeconomic status on some health outcomes going forward.

Highlights from our 2012 report, which begins on the next page, include:

- The annual death rate further declined 1.6% to a new historic low of 6.3 deaths per 1,000 population, with 52,455 deaths in 2012. The decline since 2003 is 13.7%.
- From 2003 to 2012, disparities in death rates narrowed between the highest (non-Hispanic blacks) and lowest (Asian and Pacific Islanders) race/ethnic groups by more than 21.0%.
- Alzheimer's disease replaced HIV/AIDS among the 10 leading causes of death.
- Although life expectancy for New Yorkers at birth is now 80.8 years, representing a 2 year, 7 month (2.6%) increase since 2002, it decreased by approximately one month in 2011, the last year for which data are available. It remains higher than the U.S. life expectancy, which is 78.7 years at birth. The change in NYC was driven by a relative increase in deaths in the first quarter of 2011 compared to a relatively low baseline in the first quarter of 2010. The increase was mainly in deaths among women aged 80 and older and was not concentrated in a single cause of death. No single cause of death contributed to the decrease in life expectancy from 2010 to 2011. Winter mortality in NYC and other temperate cities tends to be higher and more variable than mortality during other time periods. While the causes of higher and more variable winter mortality in temperate climates are not fully understood, both influenza and winter weather may play a role.
- The 2012 infant mortality rate remained unchanged from its 2011 historic low of 4.7 infant deaths per 1,000 live births.

Analysis of birth and death certificates provides us critical information about the health of the city that we use to help New Yorkers live longer and healthier lives.

Sincerely,



Daniel E. Kass
Interim Commissioner

Recent Trends in New York City Vital Statistics

- New York City's 2012 death rate declined 1.6% from 2011 to a new historic low of 6.3 deaths per 1,000 population, with 52,455 deaths. This is a 13.7% decline since 2003 (page v).
- From 2003 to 2012, all-cause age-adjusted death rates decreased across all racial/ethnic groups: non-Hispanic blacks by 17.1%, non-Hispanic whites by 16.7%, Hispanics by 17.3%, and Asians and Pacific Islanders by 12.8%. Though rates were consistently highest among non-Hispanic blacks followed by non-Hispanic whites, Hispanics, and Asians and Pacific Islanders, gaps between the highest (non-Hispanic blacks) and lowest (Asian and Pacific Islanders) rates narrowed more than 21.0% since 2003 (page v).
- In 2011, New York City's life expectancy at birth was 80.8 years (preliminary data from latest year available). This is a two year, seven month increase since 2002 and an approximate one month (0.1 year) decrease since 2010. The 2011 life expectancy reflects a two year, 11 month increase to 78.1 among males, a two year, five month increase to 83.2 among females, a three year increase to 81.8 years among Hispanics, a three year, two month increase to 81.4 among non-Hispanic whites and a three year, one month increase to 77 years among non-Hispanic blacks since 2002 (page iv).
- Heart disease, cancer and influenza/pneumonia continue to rank as the three leading causes of death. Since 2003, crude death rates declined 32.0%, 5.9% and 19.2% respectively (page vi).
- New York City's 2012 infant mortality rate remained unchanged from 2011, at 4.7 infant deaths per 1,000 live births. Since 2003, it declined 27.7% from 6.5. The 2012 Take Care New York goal of a citywide infant mortality rate of 5.0 was met in 2010 and the Healthy People 2020 goal of 6.0 was met in 2005 (Infant Mortality, Figure 1).
- Infant mortality rates were highest in the city's poorest neighborhoods; while there were 3.0 infant deaths per 1,000 live births in areas with $<10\%$ population below poverty, there were 5.7 infant deaths per 1,000 live births in areas with $\geq 30\%$ population below poverty (page xi).
- New York City's 2012 crude birth rate was 14.8 births per 1,000 population, the lowest rate since 1979, when the rate was also 14.8. The rate decreased 3.9% from 15.4 births per 1,000 population in 2003 and 0.7% from 14.9 births per 1,000 population in 2011 (Pregnancy Outcomes, Figure 1).
- In 2012, 39.4% of women giving birth were either overweight (23.4%) or obese (16.0%) pre-pregnancy. Disproportionately more non-Hispanic black (58.1%) and Hispanic (51.0%) mothers were overweight or obese pre-pregnancy (page xii).
- From 2003 to 2012, teen birth rates declined 32.4% to 23.6 teen births per 1,000 female population (page xii).

For more detailed information please see Vital Event Specific Reports: Mortality, Pregnancy Outcomes, and Infant Mortality or EpiQuery. Please email VSdata for additional data needs.

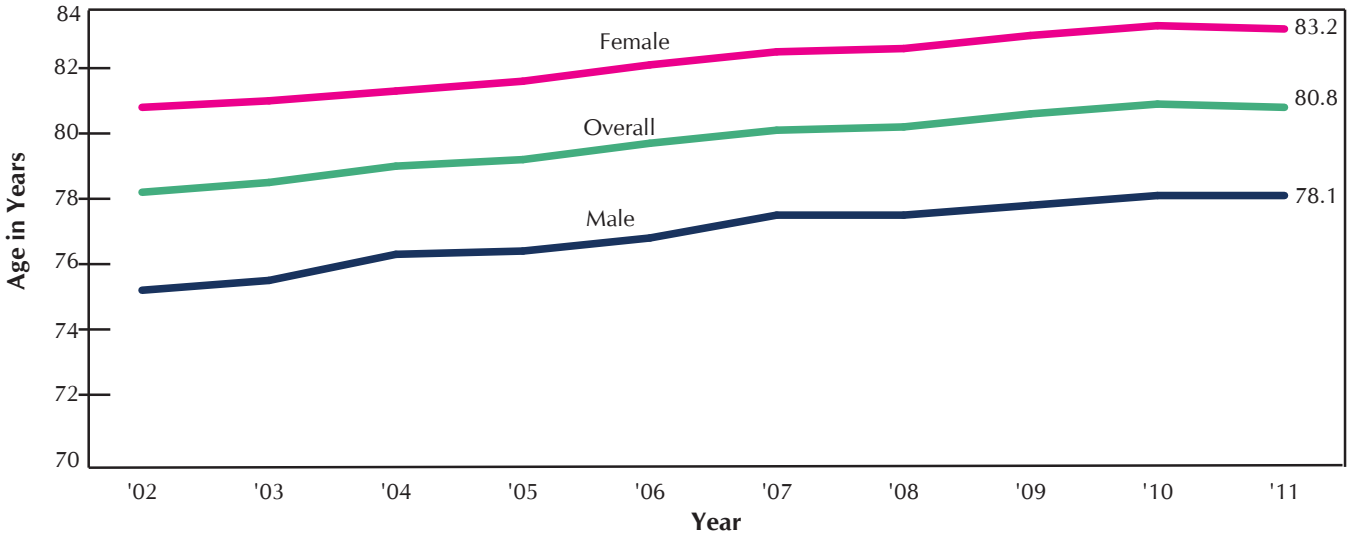
This report was prepared by the Department of Health and Mental Hygiene, Office of Vital Statistics staff under the direction of Regina Zimmerman, PhD, MPH and Wenhui Li, PhD.

Suggested citation: Zimmerman R, Li W, Gambatese M, Madsen A, Lasner-Frater L, Van Wye G, Kelley D, Kennedy J, Maduro G, Sun Y. *Summary of Vital Statistics, 2012: Executive Summary*. New York, NY: New York City Department of Health and Mental Hygiene, Office of Vital Statistics, 2014.

This publication along with the 2012 Infant Mortality, Pregnancy Outcomes. and Mortality Reports are available online at http://www.nyc.gov/vitalstats.

LIFE EXPECTANCY IN NEW YORK CITY

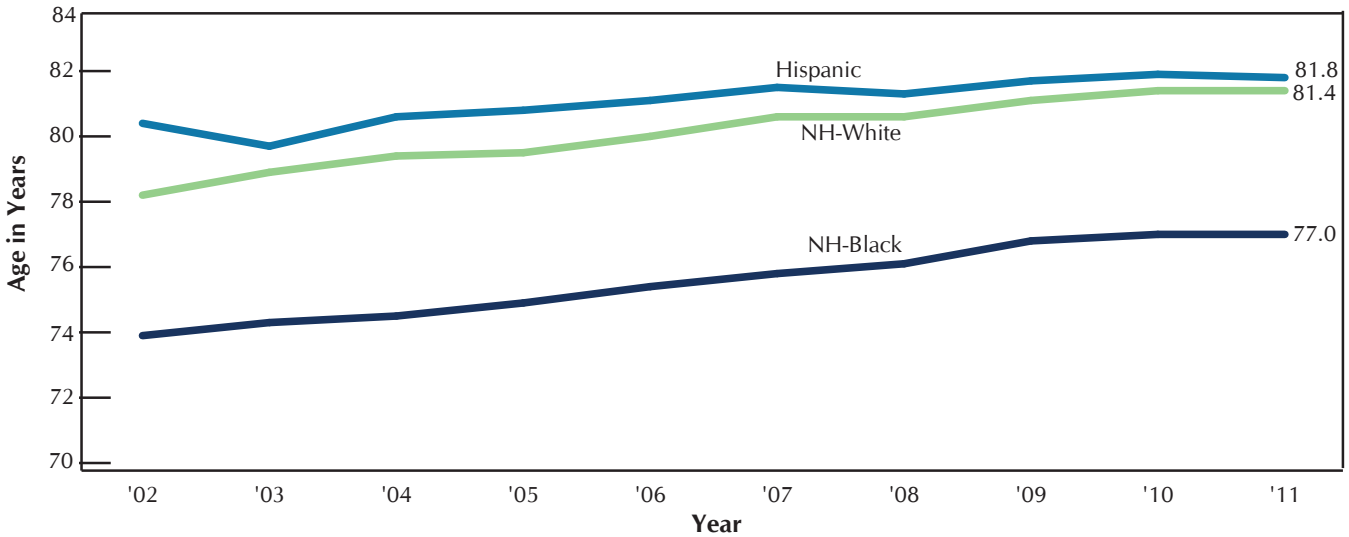
Life Expectancy at Birth, Overall and by Sex, New York City, 2002–2011



*Life Expectancies for the years 2001-2008 have been updated from previous published Summaries by using interpolated population data from 2000 and 2010 US Census counts (See Technical Notes: Population).

- New York City's 2011 life expectancy at birth was 80.8 years (preliminary data for latest year available). This represents a two year, seven month increase since 2002 and an approximate one month (0.1 year) decrease since 2010.
- Among males, life expectancy increased two years, 11 months to 78.1 since 2002 and remained unchanged since 2010. Among females, it increased two years, five months to 83.2 since 2002 and decreased approximately one month since 2010.

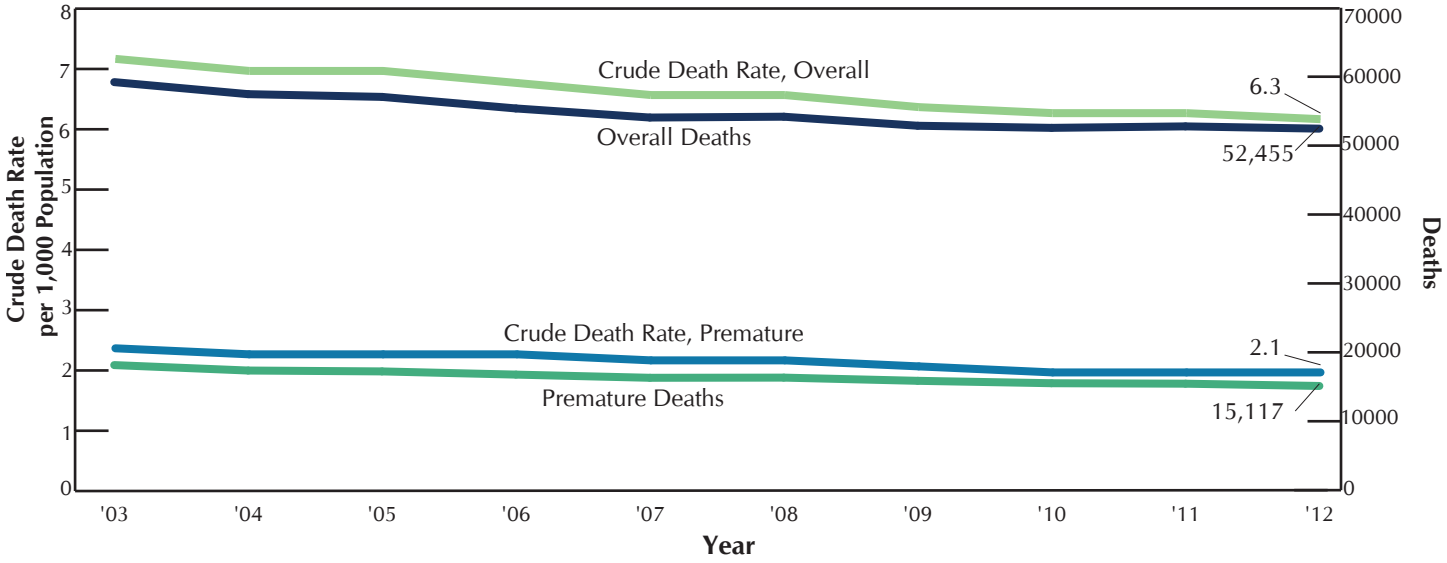
Life Expectancy at Birth by Racial/Ethnic Group, New York City, 2002–2011



- The 2011 life expectancy at birth among Hispanics was 81.8 years (preliminary data for latest year available) and reflects a three year increase since 2003 and an approximate one month (0.1 year) decrease since 2010. The 2011 life expectancy among non-Hispanic whites was 81.4 and reflects a three year, two month increase since 2002 and an approximate one month (0.1 year) increase since 2010. Among non-Hispanic blacks, the 2011 life expectancy was 77 years, a three year, one month increase since 2002 and no change since 2011.
- Life expectancy for Asian and Pacific Islander is not displayed because the required single year of age population denominators are too small to produce reliable estimates (See Technical Notes, Life Expectancy).

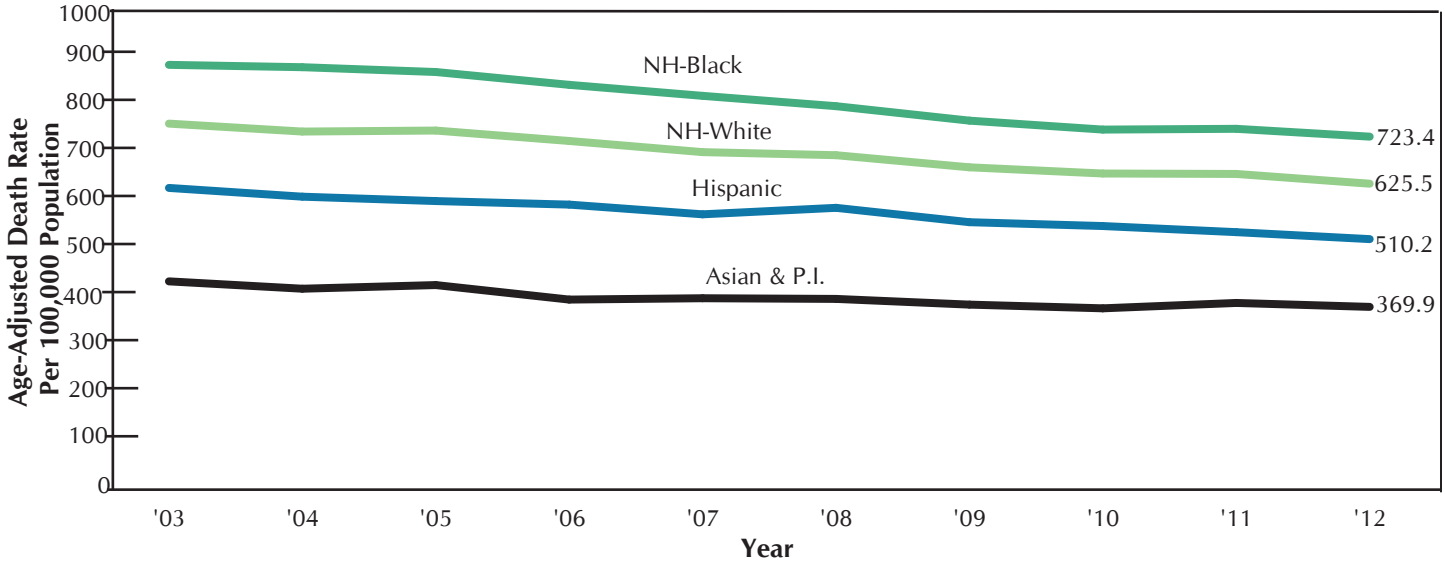
DEATHS IN NEW YORK CITY

Number of Deaths and Crude Death Rates, Overall and Premature (Age <65 Years), New York City, 2003–2012



- The New York City 2012 death rate declined 1.6% from 2011 to a new historic low of 6.3 deaths per 1,000 population, with 52,455 deaths. This is a 13.7% decline since 2003.
- Premature deaths (before age 65) accounted for 28.8% of all deaths in New York City in 2012. The crude premature death rate declined 16.0% since 2003 to 2.1 deaths per 1,000 population.

Age-adjusted Death Rates by Racial/Ethnic Group, New York City, 2003–2012



- From 2003 to 2012, all-cause age-adjusted death rates decreased across all racial/ethnic groups: non-Hispanic blacks by 17.1%, non-Hispanic whites by 16.7%, Hispanics by 17.3%, and Asians and Pacific Islanders by 12.8%. Though rates were consistently highest among non-Hispanic blacks, followed by non-Hispanic whites, Hispanics, and Asians and Pacific Islanders, gaps between the highest (non-Hispanic blacks) and lowest (Asian and Pacific Islanders) rates narrowed more than 21.0% since 2003, a reduction in health disparities.

DEATHS IN NEW YORK CITY

LEADING CAUSES OF DEATH

Ten Leading Causes of Death, Crude Death Rates per 100,000 Population, New York City, 2012, 2011 and 2003

	2012		2011			2003		
Cause	Rank	Crude Death Rate	Rank	Crude Death Rate	Change to 2012 (%)	Rank	Crude Death Rate	Change to 2012 (%)
Diseases of Heart*	1	200.7	1	204.4	-1.8%	1	295.1	-32.0%
Malignant Neoplasms	2	160.8	2	162.6	-1.1%	2	170.9	-5.9%
Influenza and Pneumonia	3	26.9	3	30.1	-10.6%	3	33.3	-19.2%
Diabetes Mellitus	4	21.7	5	21.4	1.4%	4	23.4	-7.3%
Chronic Lower Respiratory Diseases	5	19.8	4	21.5	-7.9%	6	20.7	-4.3%
Cerebrovascular Diseases	6	19.8	6	21.2	-6.6%	5	22.9	-13.5%
Accidents Except Poisoning by Psychoactive Substances†	7	12.4	7	12.3	0.8%	8	14.2	-12.7%
Essential Hypertension and Hypertensive Renal Diseases	8	11.8	8	11.7	0.9%	10	8.8	34.1%
Use of or Poisoning by Psychoactive Substance†	9	9.7	10	9.2	5.4%	9	11.9	-18.5%
Alzheimer's Disease	10	8.3	11	7.6	9.2%	20	3.1	167.7%

*2010 Summary of Vital Statistics: Mortality – Special Section: Cause of Death Quality Improvement Initiative for information on the recent trends in cause of death reporting, particularly heart disease.

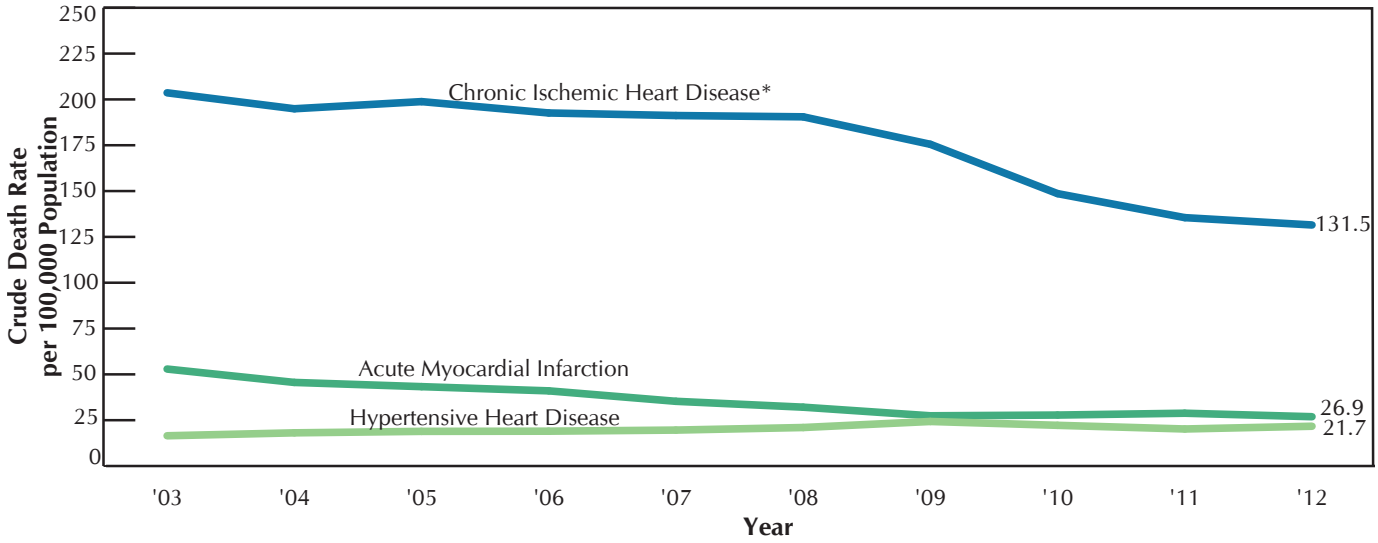
†Technical Note, Summary of Vital Statistics, Appendix B: Drug-Related Deaths for definition.

- Heart disease, malignant neoplasms (cancer), and influenza/pneumonia continue to rank as the 3 leading causes of death. Since 2003, crude death rates declined 32.0%*, 5.9%, and 19.2%, respectively.
- Diabetes mellitus moved from the fifth to the fourth leading cause of death at 21.7 deaths per 100,000 population, in 2012, followed by chronic lower respiratory disease (19.8) and cerebrovascular diseases (mostly stroke) (19.8). These death rates have remained relatively stable since 2003, ranging from a low of 19.5, 17.3, and 17.3 to a high of 23.6, 21.5, and 23.2 deaths per 100,000 population, respectively.
- The essential hypertension and hypertensive renal disease death rate increased approximately 30% from 2003 to 2009 and has remained relatively stable since then, at 11.8 deaths per 100,000 population in 2012.
- In 2012, Alzheimer's disease ranked 10th replacing HIV among the top ten leading causes, at 8.3 deaths per 100,000 population, up 167.7% since 2003. The sharp increase in Alzheimer's disease since 2008 coincides with efforts to improve cause of death accuracy in New York City.*

DEATHS IN NEW YORK CITY

HEART DISEASE DEATHS

Crude Death Rates for 3 Leading Causes of Heart Disease* Death, New York City, 2003–2012

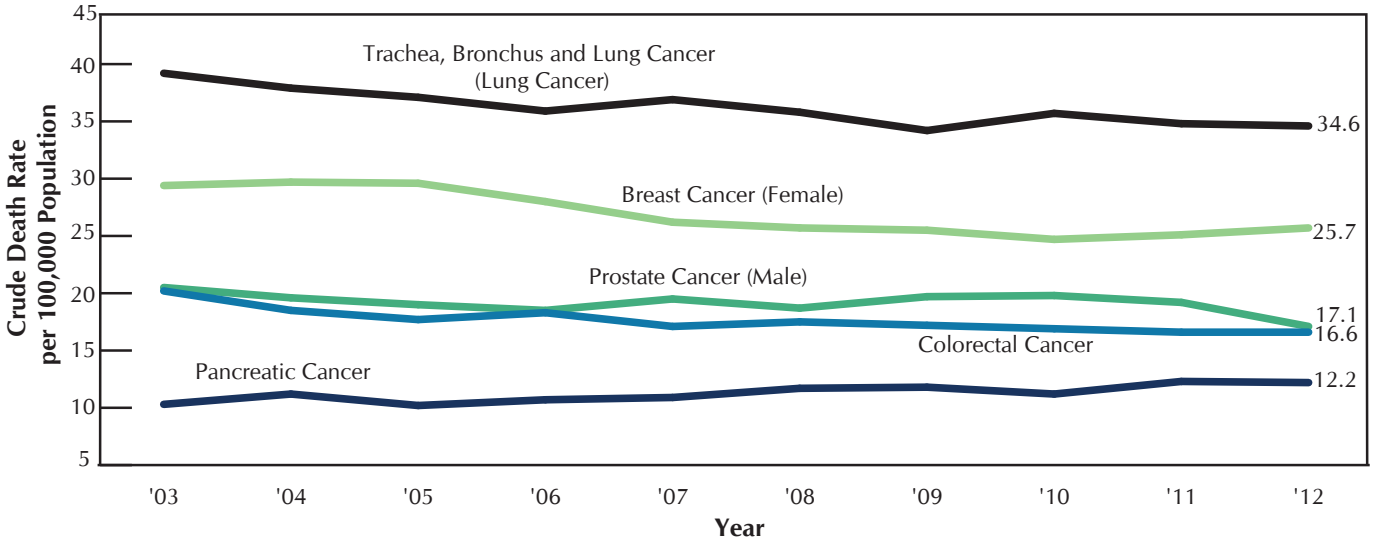


*2010 Summary of Vital Statistics: Mortality – Special Section: Cause of Death Quality Improvement Initiative for information on recent trends in cause of death reporting, particularly heart disease reporting.

- The rate of chronic ischemic heart disease death, the leading cause of heart disease deaths, decreased 35.4% since 2003. The steep decline from 190.5 deaths per 100,000 population in 2008 to 131.5 in 2012 is partly due to efforts to improve the accuracy of cause of death reporting.*
- Since 2003, acute myocardial infarction also decreased 49.1% to 26.9 deaths per 100,000 population, while hypertensive heart disease increased 31.5% to 21.7.

CANCER DEATHS

Crude Death Rates for 5 Leading Causes of Cancer Death, New York City, 2003–2012

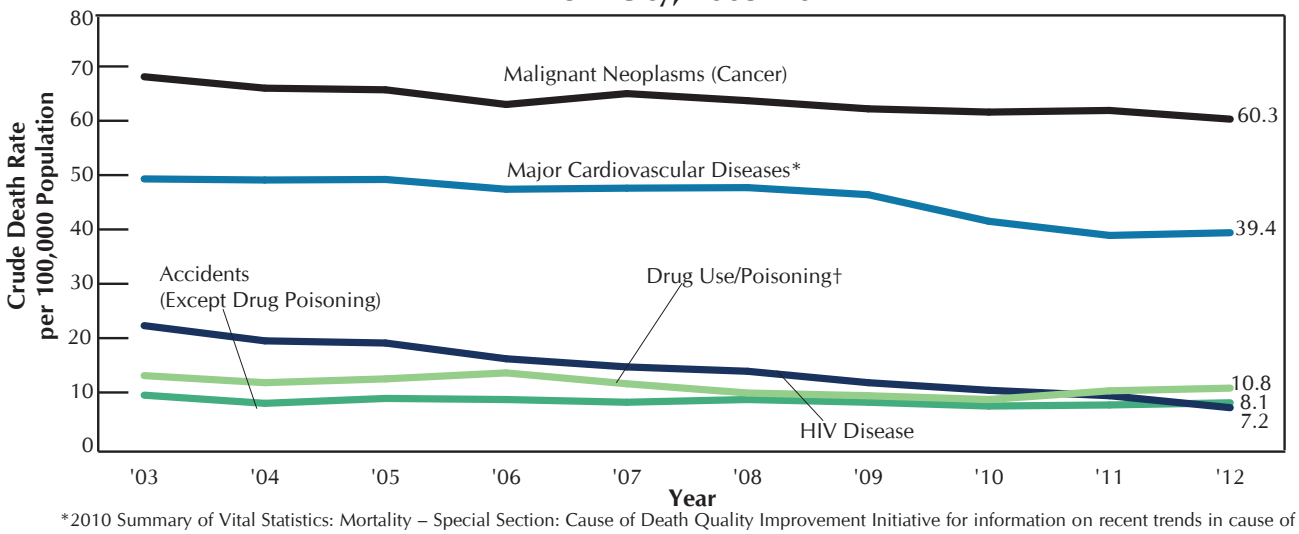


- Since 2003, rates of four of the five leading causes of cancer death decreased: lung cancer (includes the trachea, bronchus and/or lung) (11.7%), female breast cancer (12.6%), male prostate cancer (16.6%), and colorectal cancer (17.8%).
- Pancreatic cancer the fifth leading cause of cancer death increased 18.4% to 12.2 deaths per 100,000 population from 2003.

DEATHS IN NEW YORK CITY

PREMATURE DEATHS

Crude Death Rates for 5 Leading Causes of Premature Death (Age <65 Years), New York City, 2003–2012



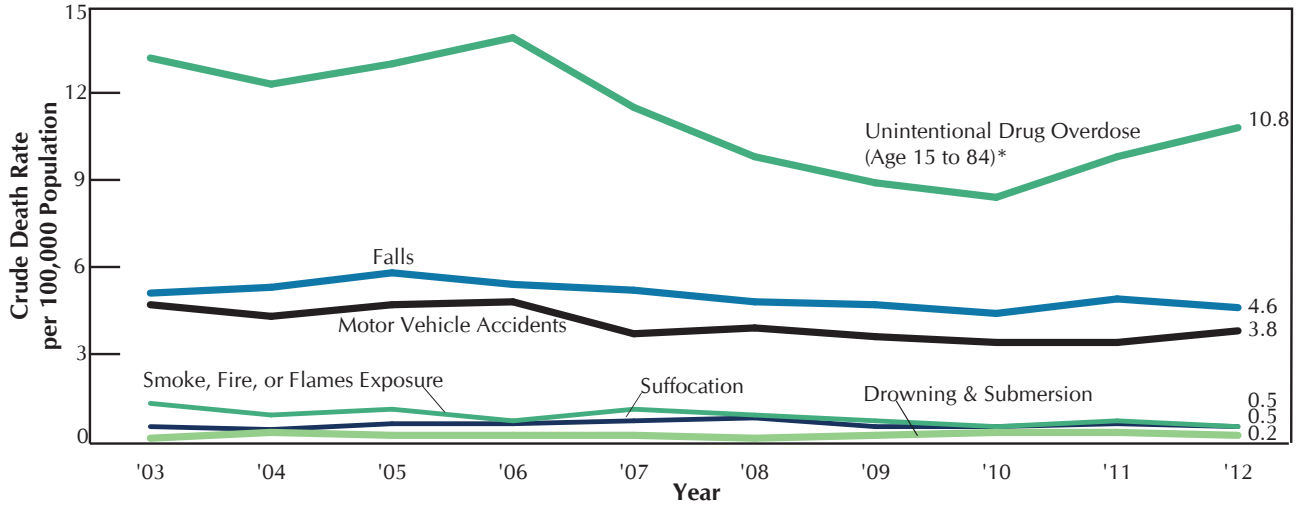
*2010 Summary of Vital Statistics: Mortality – Special Section: Cause of Death Quality Improvement Initiative for information on recent trends in cause of death reporting, particularly heart disease reporting.

†Technical Note in Summary of Vital Statistics, Appendix B: Drug-Related Deaths.

- In 2012, the five leading causes of premature death (before age 65) were cancer, followed by heart disease, use of or poisoning by psychoactive substance (drug use/poisoning), accidents except drug use/poisoning, and HIV disease.
- All declined since 2003: cancer 11.5%, heart disease 20.1%, drug use/poisoning 17.6%, accidents except drug use/poisoning 14.7%, and HIV-related mortality rate 67.7%.
- The continuing decline in HIV-related mortality is attributed to HIV prevention efforts and increased use and effectiveness of antiretroviral drugs. The recent decline in heart disease is partly due to efforts to improve the accuracy of cause of death reporting.*

ACCIDENTS

Crude Death Rates for Selected Accident Deaths, New York City, 2003–2012



*Technical Note, Appendix B: Drug-Related Deaths.

- In 2012, the three leading causes of accidental deaths were unintentional drug overdose* at 10.8 deaths per 100,000 population, followed by falls at 4.6, and motor vehicle accidents at 3.8. Since 2003, rates for all three have fluctuated with overall declines of 18.2%, 9.8% and 19.1% respectively.
- Rates of accidental death due to smoke, fire or flame exposure; suffocation; and drowning and submersion were all less than 1 death per 100,000 population in 2012.

SPECIAL SECTION
HURRICANE SANDY RELATED DEATHS

- This special section highlights the effects of Hurricane Sandy on 2012 mortality. Future publications will describe the methods of surveillance and results in more detail.
- On October 29, 2012, post-tropical cyclone Sandy made landfall approximately 100 miles south of New York City, causing a record breaking storm surge.* Extensive flooding and wind damage caused widespread power outages, transportation shutdowns, residential and hospital evacuations, and billions of dollars of damage.†
- In total, there were 44 deaths in New York City that were identified by the Office of the Chief Medical Examiner as due to Hurricane Sandy. Most of the deaths were identified within one week of the storm; however, one body was not discovered until April 2013, and is included among 2012 reported deaths.

*Service Assessment: Hurricane/Post-Tropical Cyclone Sandy, October 22-29, 2012, 2013, National Weather Service: Silver Spring, Maryland.
†New York City Mayor's Office. Hurricane Sandy After Action: Report and Recommendations to Mayor Michael R. Bloomberg, May 2013.

Characteristics of Hurricane Sandy Deaths, 2012

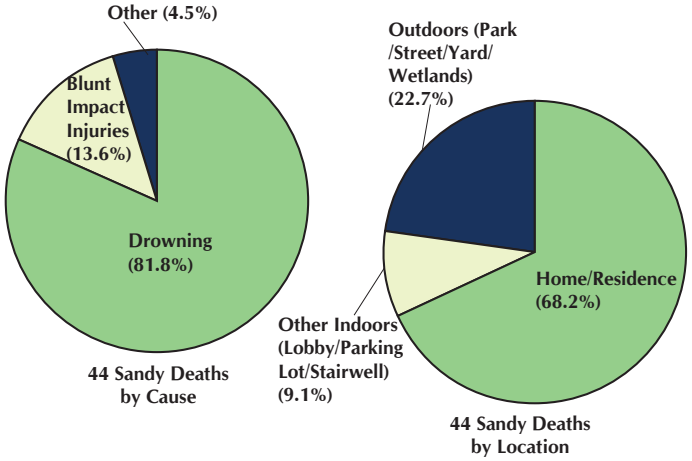
	All Deaths	Percent
Total	44	100.0%
Sex		
Male	31	70.5%
Female	13	29.5%
Age		
<20 years	4	9.1%
21-54 years	9	20.5%
55-75 years	20	45.5%
>75 years	11	25.0%
Race/Ethnicity		
Non-Hispanic White	35	79.5%
Non-Hispanic Black	7	15.9%
Asian & Pacific Islanders	1	2.3%
Hispanic	1	2.9%
Education		
<High School	6	17.1%
High School Graduate	17	38.6%
Some College/Graduate	21	47.7%
Date of Hurricane Sandy Death*		
October 29, 2012	2	4.5%
October 30, 2012	26	59.1%
October 31, 2012	5	11.4%
November 1, 2012	5	11.4%
November 2-9, 2012	6	13.6%

*Most dates of death are actual. Others are the date when the body was discovered or estimated based on the Office of the Chief Medical Examiner investigation.

- Of the 44 deaths, the majority were male (70.5%) and non-Hispanic white (79.5%).
- The median age of decedents was 62 and ranged from 2 to 90 years. Decedents were more likely to be 55-75 years of age (45.5%) and >75 years of age (25.0%).
- Roughly half of the decedents (47.7%) had some college or a college degree.
- Deaths occurred from October 29 through November 9, 2012 with the majority (59.1%) on October 30th.*

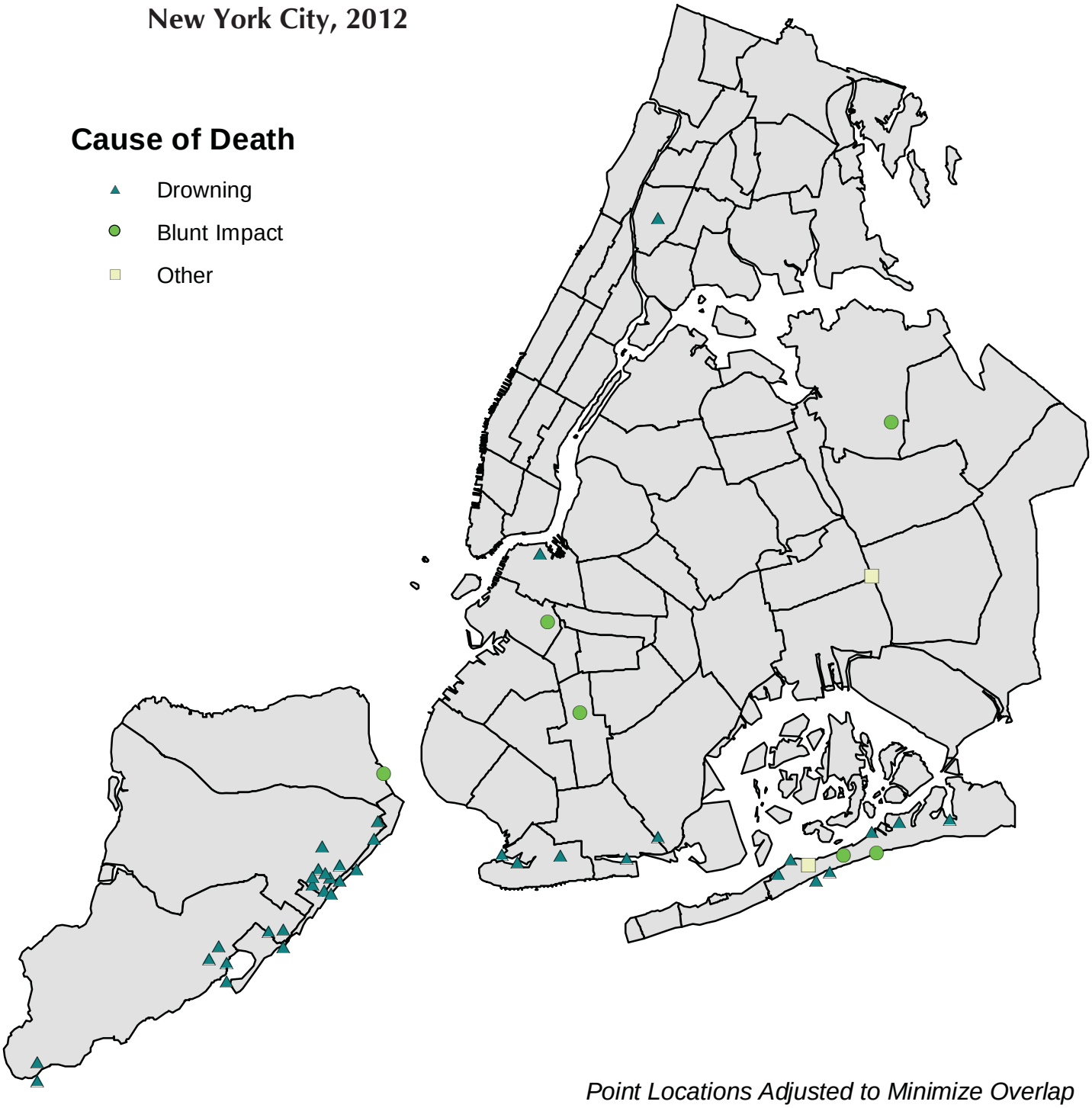
- Deaths due to Hurricane Sandy primarily occurred as a result of drowning (81.8%) and blunt impact (13.6%).
- Nearly seventy percent (68.2%) of deaths occurred in the decedent's home.

Causes and Locations of Hurricane Sandy Deaths, 2012



SPECIAL SECTION
HURRICANE SANDY RELATED DEATHS

Cause of Hurricane Sandy Related Deaths by Decedent's Usual Residence, New York City, 2012

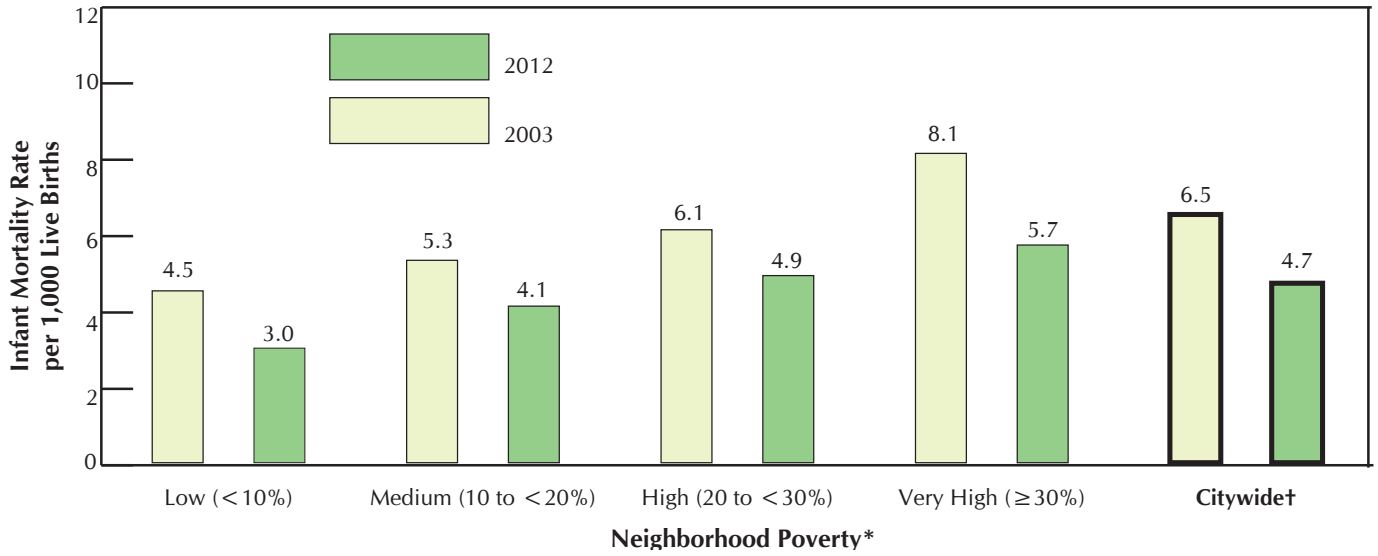


Point Locations Adjusted to Minimize Overlap

- Drowning deaths primarily occurred to residents of coastal areas of Staten Island (61.1%), Queens (19.4%), and Brooklyn (16.7%) in their homes.

INFANT MORTALITY

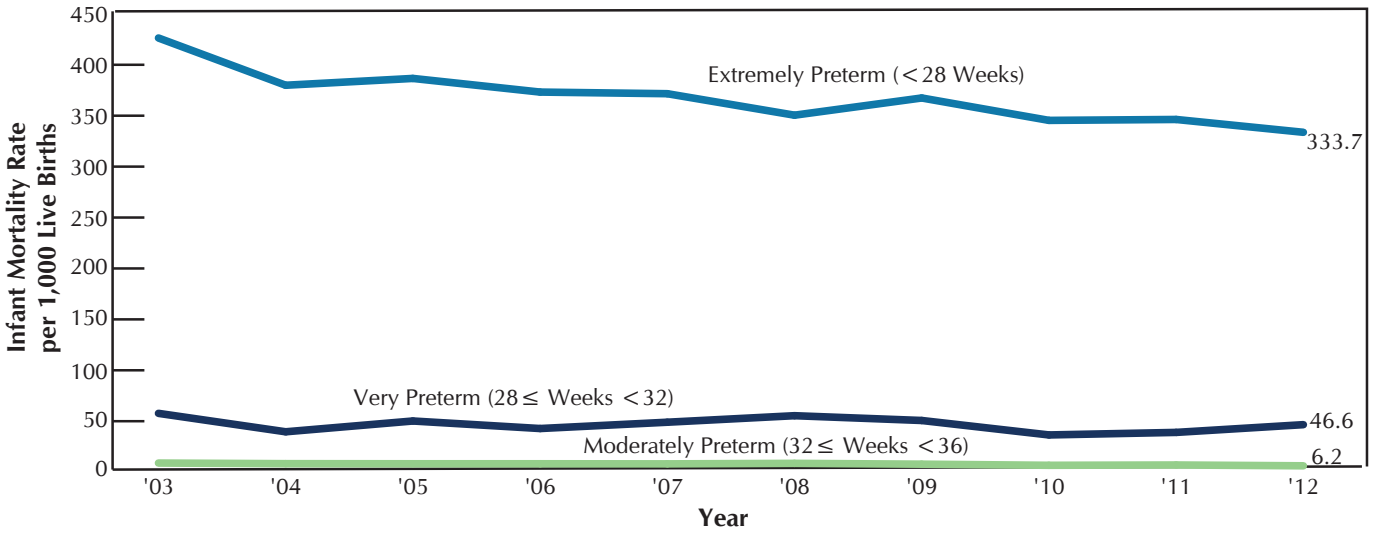
Infant Mortality Rate by Neighborhood Poverty*, New York City, 2003, 2012



- Infant mortality rates were highest in the city's poorest neighborhoods. While there were 3.0 infant deaths per 1,000 live births in areas with <10% population below poverty, there were 5.7 infant deaths per 1,000 live births in areas with ≥30% population below poverty.
- Since 2003, infant mortality rates decreased mostly in census tracts with low poverty (32.1%), followed by census tracts with very high poverty (29.4%). Infant mortality rates in areas of medium poverty and high poverty declined 21.5% and 19.5% respectively.

*Neighborhood poverty (based on mother's census tract) defined as percent of residents with incomes below 100% of the Federal Poverty Level, per Census 2010.
†Computed from all infant death, regardless of residence.

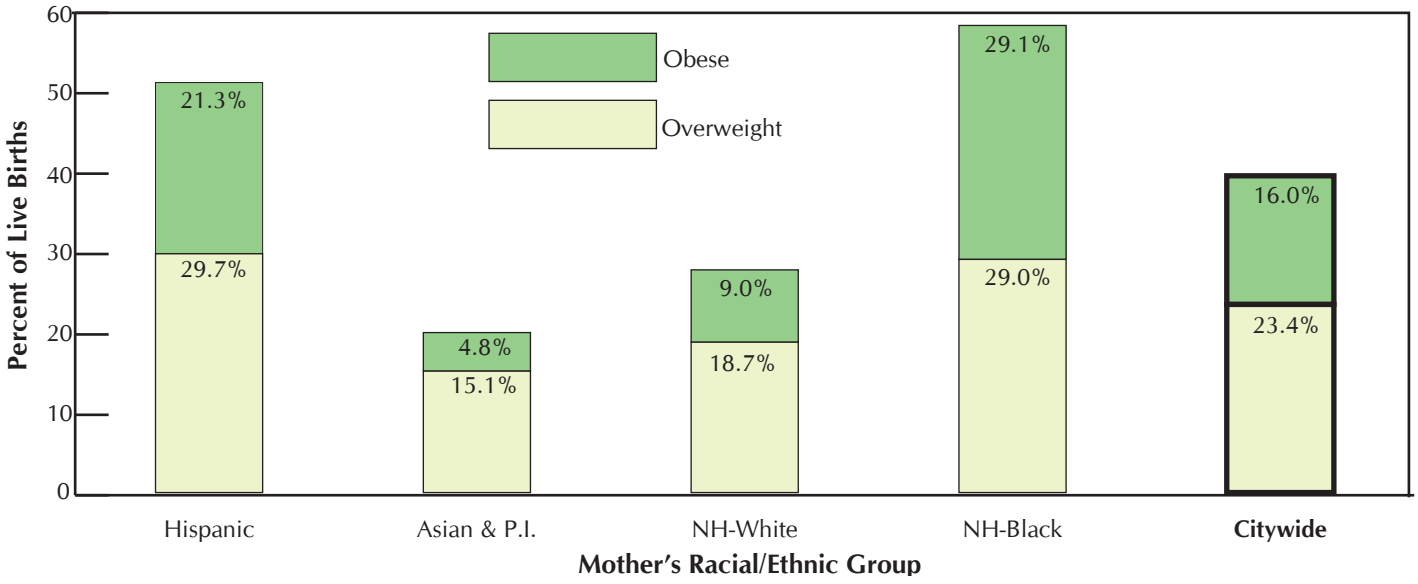
Infant Mortality Rate among Preterm Live Births, New York City, 2003–2012



- The less than two percent of infants born extremely and very preterm have very high risks for death with infant mortality rates of 333.7 and 46.6 infant deaths per 1,000 live births respectively in 2012. The rate of infant death for moderately preterm births was 6.2.
- Since 2003, infant mortality declined 21.7% among extremely preterm, 19.2% among very preterm and 30.3% among moderately preterm.

BIRTHS

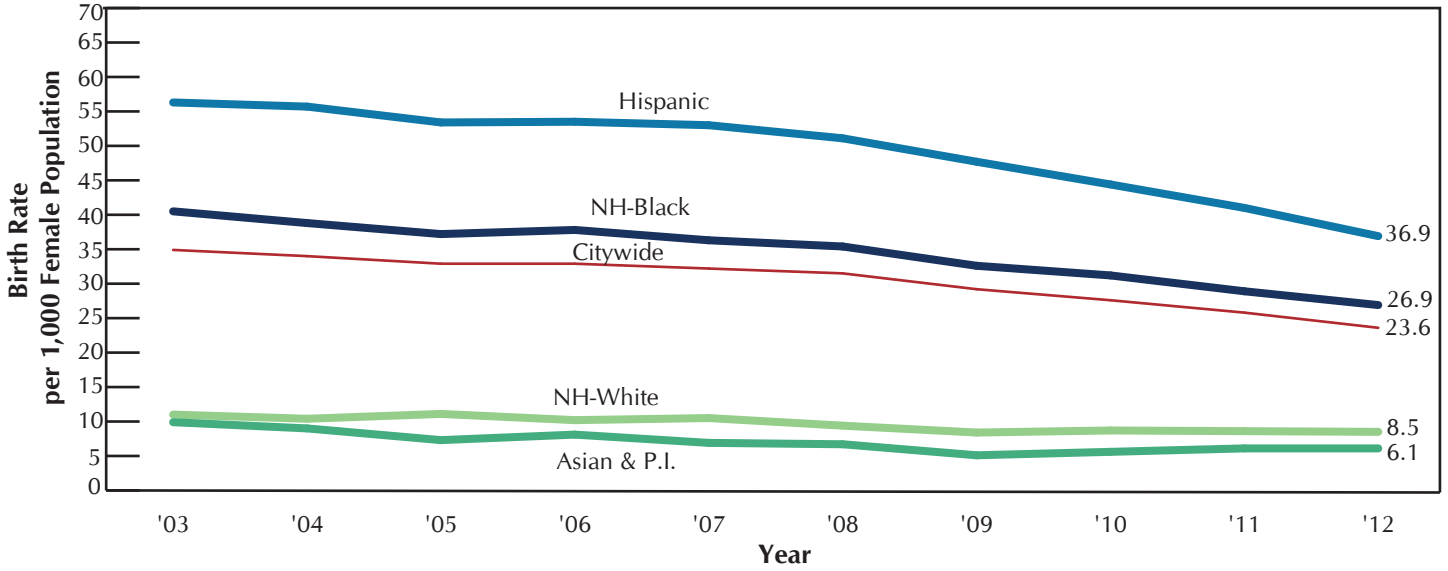
Pre-pregnancy Body Mass Index (BMI)* by Mother's Racial/Ethnic group, New York City, 2012



*Body Mass Index (BMI): Overweight: (25 BMI < 30), Obese: (BMI ≥ 30).

- In 2012, 39.4% of women giving birth were either overweight (23.4%) or obese (16.0%) pre-pregnancy.
- Disproportionately more non-Hispanic black (58.1%), and Hispanic (51.0%) women giving birth were overweight or obese pre-pregnancy.
- Asians and Pacific Islanders and non-Hispanic whites had the lowest levels of pre-pregnancy overweight and obesity at 19.9% and 27.7%, respectively.

Teen Birth Rate by Racial/Ethnic Group, New York City, 2003–2012



- From 2003 to 2012, birth rates among 15-20 year olds declined 32.4% to 23.6 births per 1,000 female teen population.
- Though rates were consistently highest among Hispanics, followed by non-Hispanic blacks, non-Hispanic whites and Asian and Pacific Islander, gaps between the highest (Hispanics) and lowest (Asian and Pacific Islanders) rates narrowed 33.6% since 2003.