



Health Equity Report

Cardiovascular Disease

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Introduction

Cardiovascular Disease is a category of diseases that affect the heart and circulatory system and includes heart disease and stroke. Specific categories of cardiovascular disease included in this Equity Report are coronary heart disease (CHD) which includes acute myocardial infarction, acute myocardial infarction (heart attack), congestive heart failure (CHF), cerebrovascular disease or stroke, and a major cardiovascular disease risk factor-high blood pressure (HBP) or hypertension.

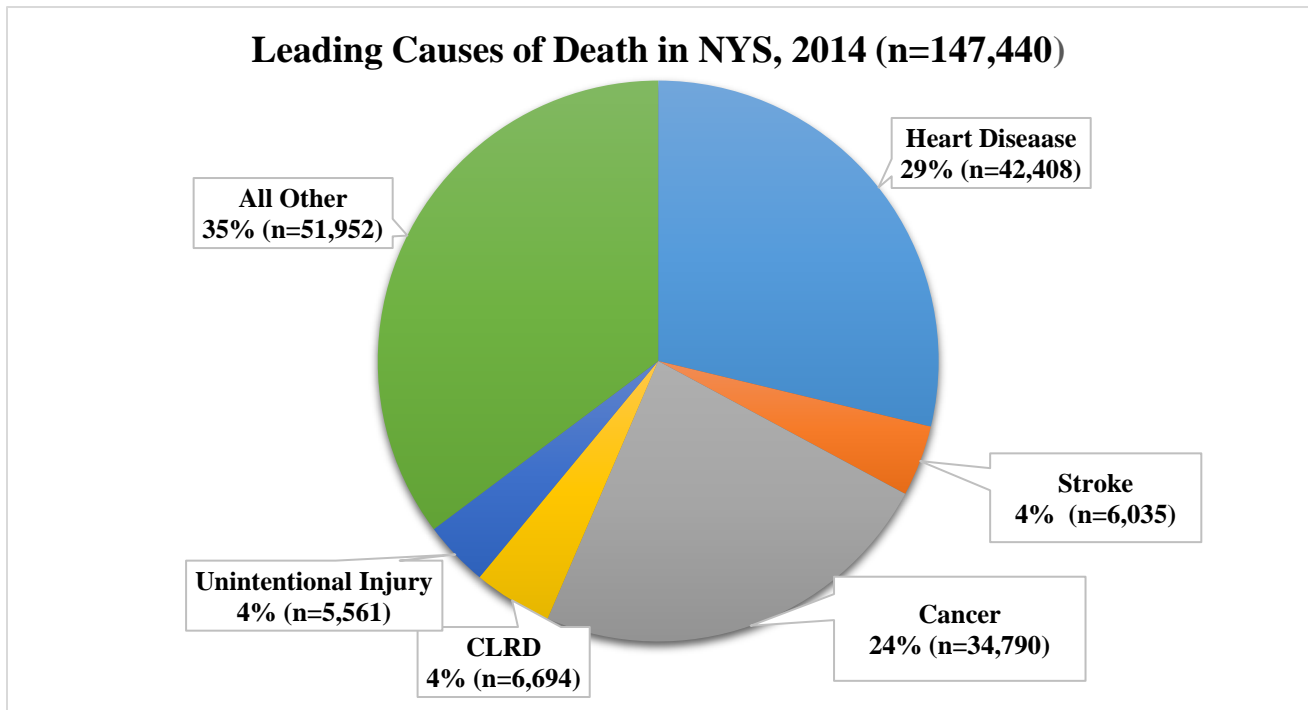
Coronary Heart Disease (CHD), the most common type of heart disease occurs when the arteries supplying blood to the heart narrow or harden from the build-up of plaque.¹ A complete cutoff of blood supply causes the death of the heart muscle cells and results in a heart attack². Congestive heart failure (CHF) is a chronic condition in which the heart doesn't pump blood as well as it should, causing congestion in the body's tissues.³ A stroke occurs when a blood vessel bringing oxygen and nutrients to the brain bursts or is cut off by a blood clot.⁴ Blood pressure is the force of blood pushing against the walls of the arteries that carry blood to your heart and other parts of the body. High blood pressure (HBP) can damage the heart if it stays high for a long time. A blood pressure of 140/90 mmHg or more is considered too high.⁵

Federal and State Context

Improving cardiovascular health and quality of life is a Healthy people 2020 Goal, with objectives for reduction of CHD and stroke mortality, and the prevalence of HBP in adults.⁶ New York State's Prevention Agenda also identifies heart disease and stroke as a focus area with objectives including the reduction of CHD, heart attack, and CHF hospitalizations, and stroke mortality.⁷

Heart disease is the leading cause of death in the United States, while stroke is the 5th leading cause of death. Heart disease was the leading cause of death for most racial/ethnic groups in the US including black non-Hispanic, white non-Hispanic, and Hispanic populations. In addition, heart disease and stroke result in serious illness and disability, and low quality of life.⁶ An estimated 92.1 million American adults are living with some form of cardiovascular disease or the after effects of stroke.⁸ Over 360,000 Americans die each year from CHD. About 790,000 people in the US have heart attacks each year. Of those, 114,000 will die. Each year, about 795,000 Americans experience a new (610,000) or recurrent (185,000) stroke. In the US, nearly 133,000 people die of stroke each year. An estimated 85.7 million, or 34% of US adults have high blood pressure, with only 54% of them having it under control.⁸ The direct and indirect costs of cardiovascular disease are estimated to total more than \$316 billion a year, including both health expenditures and loss of productivity. The estimated direct and indirect cost of heart disease was \$199.6 billion.⁸

Heart Disease was the leading cause of death, and stroke the 4th leading cause of death in New York State (NYS) in 2014. Heart disease (42,408) and stroke (6,035) accounted for 48,443 deaths or 33% of all NYS deaths in 2014. Heart Disease was the leading cause of death for both male and female New Yorkers as well as white non-Hispanic, black non-Hispanic and Hispanic NY residents. Stroke was the 5th leading cause of death for male, and the 3rd for female New Yorkers. Stroke was also the 4th leading cause of death for white non-Hispanic, black non-Hispanic and Hispanic New York residents. For the Asian non-Hispanic population, heart disease was the 2nd and stroke the 3rd leading cause of death.⁹

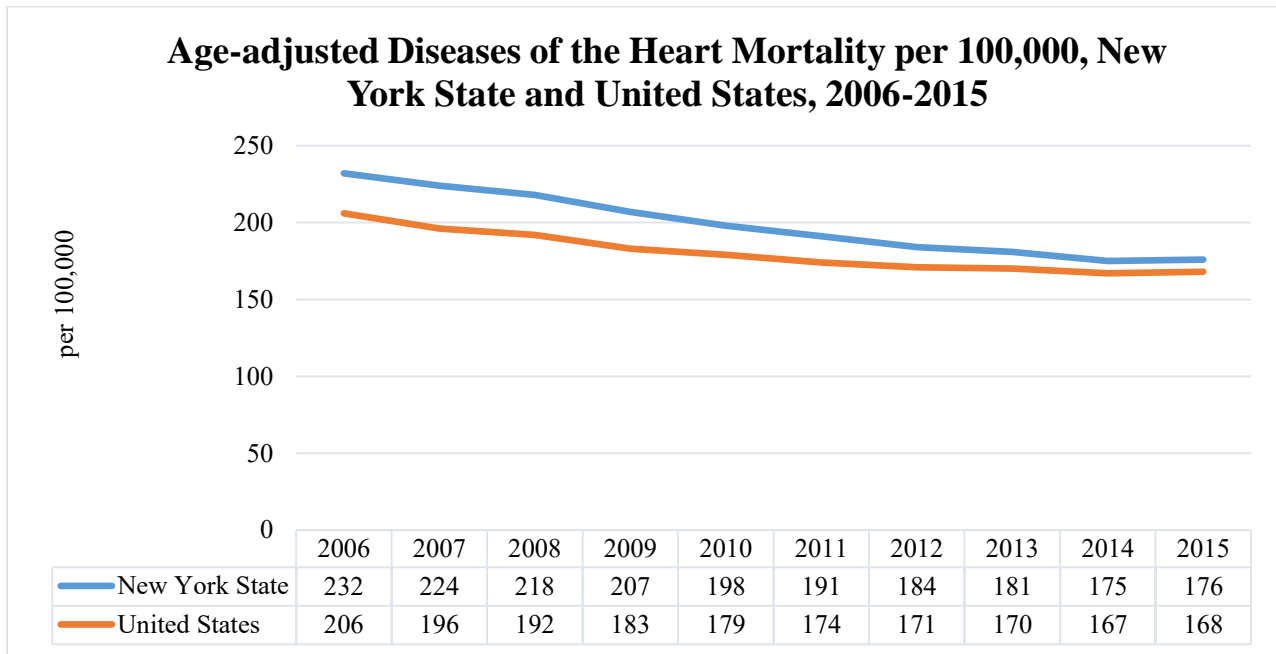


Of the annual NYS heart disease mortality, 33,500 deaths were due to CHD, 7,000 due to heart attack, and 3,150 due to CHF. Cardiovascular disease is also the cause of a large number of hospitalizations in NYS each year; 72,300 due to CHD, 33,250 due to heart attack, 56,300 due to CHF and 52,350 due to stroke.¹³

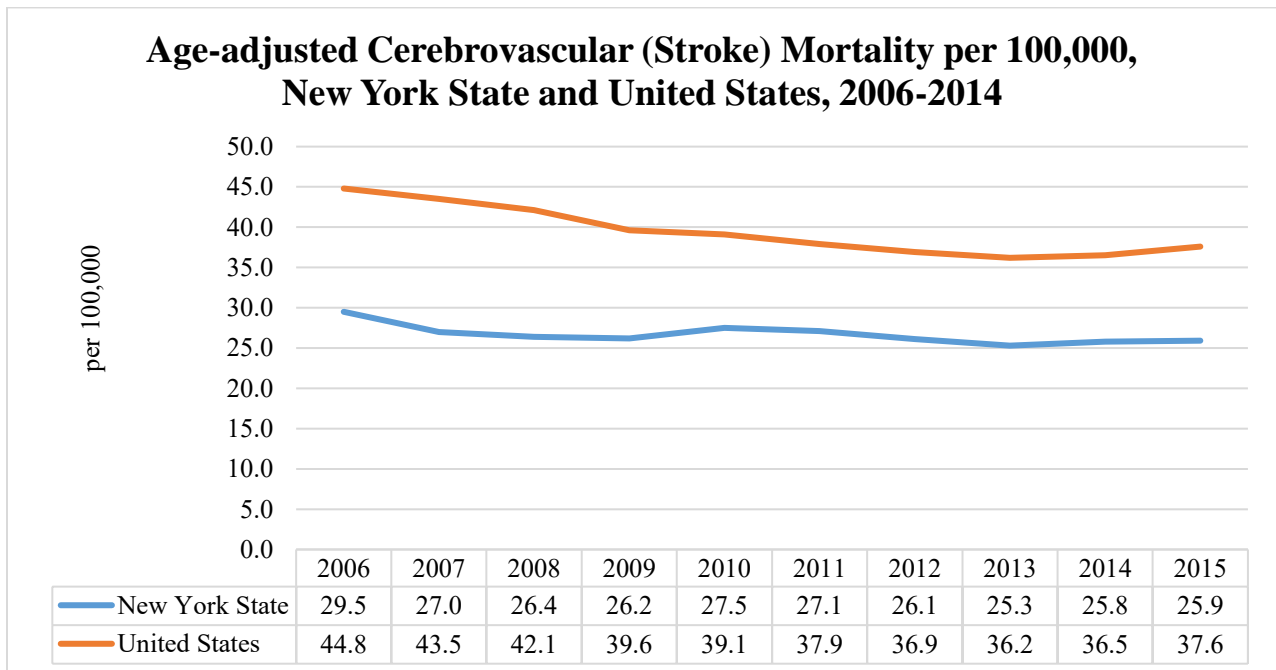
An estimated 1,142,000 New York State adults (7.4%) reported that a doctor or health professional had indicated that they have had a heart attack (3.8%), angina/CHD (4.2%) and/or a stroke (2.4%) in 2014. For New Yorkers 65+ years of age, 20.9% indicated that they had some type of cardiovascular disease. The adult male (8.6%), white non-Hispanic (8.4%), annual income of <\$15000 (10.8%), and < high school education (10.8%) populations had the highest reported cardiovascular prevalence rates.¹⁰

Over 4,320,000 (28.3%) adult New Yorkers indicated that they had physician-diagnosed high blood pressure in 2013-14. The 65+ year (60.4%), male (29.0%), and black non-Hispanic (34.2%) populations had the higher rates. Of NY adults with high blood pressure, 75.2% were taking high blood pressure medications. The lowest HBP medication rates were in the 18-24 year (8.4%), male (72.2%), and Hispanic (69.1%) populations.¹¹

The annual US age-adjusted death rate due to diseases of the heart showed a consistent decrease over the last decade (declining 18%) from 2006 to 2015. New York State’s death rate was higher than the US rate over the last decade, but also showed a larger decline of 24%.^{9,12,13}



The US age-adjusted stroke mortality rate declined 16% from 2006 to 2015. New York State’s rate was consistently lower than the national rate, with the 12% decline over the last decade.^{9,12,13}



Cardiovascular Disease Data Summary

Highlights:

Heart disease and stroke are leading causes of death in NYS, accounting for about a third of all State deaths. About 244,000 Capital Region adults have high blood pressure with almost a quarter not taking their medications.

The Region averaged about 1,400 deaths and 2,500 hospitalizations due to coronary heart disease per year and 345 deaths and 2,345 hospitalizations due to stroke.

Except for Congestive Heart Failure (CHF) mortality, the Capital Region had better rates of cardiovascular disease indicators compared to Upstate NY. Over the last decade, Capital Region trends have shown a 20% to 50% decrease for all these indicators.

With the exception of stroke mortality, Capital Region males had 30% to 100% higher cardiovascular disease rates than their female counterparts.

Black non-Hispanic residents usually had higher mortality and hospitalization rates compared to the white non-Hispanic population, with the exceptions of CHF and stroke mortality. Hispanic residents enjoyed lower cardiovascular mortality and hospitalizations than their white counterparts with the exception of CHF, where the rates were similar.

Capital Region residents living in lowest socioeconomic neighborhoods (SES 1) had 15% to 130% higher cardiovascular mortality and hospitalization rates compared to residents of the highest socioeconomic neighborhoods (SES 5).

High Blood Pressure (HBP)

- About one-third of Capital Region adults (n=244,000) were estimated to have high blood pressure (HBP), higher than the State prevalence. (*Appendix I, p. 3*)
- HBP prevalence increased with age. (*Appendix I, p. 3*)
- Capital Region males had higher prevalence rates compared to females. (*Appendix I, p. 3*)
- Black non-Hispanic residents had about 40% higher HBP rates compared to white non-Hispanics. Hispanic residents had 35% lower HBP rates than white non-Hispanics. (*Appendix I, p. 3*)
- Saratoga was the only Capital Region County with an age-adjusted HBP prevalence lower than NYS. (*Appendix I, p. 4*)
- Over 75% of Capital Region adults with HBP were taking their medications, slightly higher than the State average. (*Appendix I, p. 3*)
- Taking HBP medication increased with age. (*Appendix I, p. 3*)
- There was little difference by gender or race/ethnicity in taking HBP medication. (*Appendix I, p. 3*)
- Columbia and Saratoga had age-adjusted HBP medication rates lower than NYS. (*Appendix I, p. 4*)

Coronary Heart Disease (CHD)

- About 1,400 Capital Region residents died from CHD and 2,500 were hospitalized each year. (*Appendix II, p. 5*)
- The Region's age-adjusted CHD mortality and hospitalization rates were lower than Upstate and decreased 30% and 50% respectively over the last decade. (*Appendix I, p. 6, 7*)
- Capital Region males had 65% higher age-adjusted CHD mortality and 100% higher hospitalization rates compared to female residents. (*Appendix I, p. 8*)
- Age-adjusted CHD mortality and hospitalization rates increased with age. (*Appendix I, p. 9*)
- Black non-Hispanic residents had 7% higher age-adjusted CHD mortality rates and 9% higher hospitalization rates compared to white non-Hispanic residents. Hispanic residents had 30% lower CHD mortality rates and 50% lower hospitalization rates than their white-non-Hispanic counterparts. (*Appendix I, p. 10*)
- Residents in low socioeconomic neighborhoods in the Capital Region (SES 1) had approximately 75% higher age-adjusted CHD mortality and 60% higher hospitalization rates compared to residents from high socioeconomic areas (SES 5). (*Appendix I, p. 11*)

Heart Attack (acute myocardial infarction)

- An average of 285 Capital Region residents died from heart attack and 1,550 were hospitalized each year. (*Appendix II, p. 7*)
- The Region's age-adjusted heart attack mortality and hospitalization rates were lower than Upstate and each decreased about 30% each over the last decade. (*Appendix I, p. 13, 14*)
- Capital Region males had 65% higher age-adjusted heart attack mortality and 86% higher hospitalization rates compared to female residents. (*Appendix I, p. 15*)
- Age-adjusted heart attack mortality and hospitalization rates increased with age. (*Appendix I, p. 16*)
- Black non-Hispanic residents had almost 20% higher age-adjusted heart attack mortality rates but similar hospitalization rates compared to white non-Hispanic residents. Hispanic residents had 15% lower heart attack mortality rates and 48% lower hospitalization rates than their white-non-Hispanic counterparts. (*Appendix I, p. 17*)
- Residents in low socioeconomic neighborhoods in the Capital Region (SES 1) had almost 50% higher age-adjusted heart attack mortality and 70% higher hospitalization rates compared to residents from low socioeconomic areas (SES 1). (*Appendix I, p. 18*)

Congestive Health Failure (CHF)

- An average of 227 Capital Region residents died from CHF and 2,325 were hospitalized each year. (*Appendix II, p. 9*)
- The Region's age-adjusted CHF mortality was slightly higher (4%), but hospitalization rates were lower (16%) than Upstate. (*Appendix I, p. 21*)
- Last decade's age-adjusted CHF mortality trend was static, but with a 15% decrease between 2014 and 2015. The CHF hospitalization rate decreased almost 50% over the last decade. (*Appendix I, p. 20*)
- Capital Region males had over 30% higher age-adjusted CHF mortality and hospitalization rates compared to female residents. (*Appendix I, p. 22*)
- Age-adjusted CHF mortality and hospitalization rates increased with age. (*Appendix I, p. 23*)
- Black non-Hispanic residents had a 20% lower age-adjusted CHF mortality rate but almost twice as high hospitalization rate compared to white non-Hispanic residents. Hispanic residents had a slightly higher CHF mortality rates and a similar hospitalization rates than their white-non-Hispanic counterparts. (*Appendix I, p. 24*)
- Residents in the low socioeconomic neighborhoods in the Capital Region (SES 1) had almost 15% higher age-adjusted CHF mortality and 130% higher hospitalization rates compared to residents from high socioeconomic areas (SES 5). (*Appendix I, p. 25*)

Cerebrovascular Disease (Stroke)

- An average of 345 Capital Region residents died from stroke and 2,344 were hospitalized each year. (*Appendix II, p.11*)
- The Region's age-adjusted stroke mortality was similar, but hospitalization rates were lower (13%) than Upstate. (*Appendix I, p. 28*)
- The Region's age-adjusted stroke mortality rate and hospitalization rate trends both showed an over 20% decrease over the last decade. (*Appendix I, p. 27*)
- Capital Region males had similar age-adjusted CHF mortality rates, but 23% higher hospitalization rates compared to female residents. (*Appendix I, p. 29*)
- Age-adjusted stroke mortality and hospitalization rates increased with age. (*Appendix I, p. 30*)
- Black non-Hispanic residents had a 4% lower age-adjusted stroke mortality rate but almost 60% higher hospitalization rate compared to white non-Hispanic residents. Hispanic residents had a 16% lower stroke mortality rates and a 34% lower hospitalization rates than their white-non-Hispanic counterparts. (*Appendix I, p. 31*)
- Residents in the low socioeconomic neighborhoods in the Capital Region (SES 1) had a 35% higher age-adjusted stroke mortality and an almost 70% higher hospitalization rate compared to residents from high socioeconomic areas (SES 5). (*Appendix I, p. 32*)

Data and Methods

This Health Equity Report on Cardiovascular Disease presents national, state, county, and neighborhood (Zip code aggregate) level information by health equity for heart disease and stroke. State and Regional data on high blood pressure (140/90 mmHg or more) are also available. Cardiovascular indicators were defined with the following ICD-10 codes:

Disease of the Heart--I00-I09, I11, I13, I20-I50;
Coronary Heart Disease—I11, I20-I25;
Heart Attack (acute myocardial infarction)—I21;
Congestive Heart Failure—I50;
Cerebrovascular Disease (stroke)—I60-I69.

Hospitalization data were generated from the State Planning and Research Cooperative System (SPARCS). Mortality data were generated from NYS Vital Statistics. The Common Grounds Health's SPARCS and Vital Statistics Data Portals were used to generate mortality and hospitalization data.

The Report takes a broad definition of equity that includes gender, race/ethnicity, age, and socioeconomic status. Where available, the cardiovascular indicators were generated by the following groupings:

Region-- Albany, Columbia, Greene, Rensselaer, Saratoga, Schenectady, Capital Region, Upstate;
Gender—Male, Female;
Age—25-44 yrs., 45-64 yrs., 65-74 yrs., 75+ yrs.;
Race/Ethnicity—White non-Hispanic, Black non-Hispanic, Hispanic.
Socioeconomic status—SES 1 (low), SES 2, SES 3, SES 4, SES 5 (high).

When reviewing Race/Ethnicity, the graphs present rates by “Other” categories. Because these categories include a mix of racial groups (e.g. Asian, Native American, Multi-race) and were generally low in number, these categories were not discussed in the narrative.

When analyzing the data for this Report, a 2012 undercount of hospitalizations for a number of counties was identified. Therefore, 2012 was omitted for all trend graphs using hospitalization-based indicators.

The Common Ground Health Data Portal included a SES query with analysis available at the Zip code level or by Zip Code aggregate, including county. SES was based on average income, level of education, value of housing stock, age of housing stock, population crowding, percent of persons paying more than 35% of their income on housing, and percent of children living in single parent households. The Common Ground Health Data Portal only had SES scores available for counties north and west of Westchester County. Each Zip code was assigned a value of SES 1 through SES 5, with SES 1 being the lowest and SES 5 being the highest. SES 1

and SES 5 each contain 15% of the population, SES 2 and SES 4 each contain 20% of the population, and SES 3 contains 30% of the population. Since the SES categories are Zip-code based, data generated by SES might vary from data generated by county.

National data sources included National Center of Health Statistics, National Heart Lung and Blood Institute, the American Heart Association and the American Stroke Association. New York State and County leading causes of death were taken from Leading Causes of Death in NYS, 2014, NYSDOH. High Blood Pressure prevalence were from the Expanded BRFSS, April 2013-March 2014, NYSDOH.

A series of county-specific maps, presenting data at the neighborhood (Zip code aggregate), is contained in the Appendix III- Neighborhood Atlas. The Zip Code neighborhood groupings used for the sub-county maps are available in the HCIDI 2016 Community Health Needs Assessment, pages 177-189 (http://www.hcdiny.org/content/sites/hcdi/2016_chna/2016_HCIDI_community_health_needs_assessment.pdf).

Appendices

Appendix I- Indicator comparisons by Capital Region County, Capital Region, and New York State.

Appendix II- County-specific cardiovascular disease indicator data.

Appendix III- Neighborhood Atlas-indicator maps and data at the neighborhood (Zip code-aggregate) level.

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