

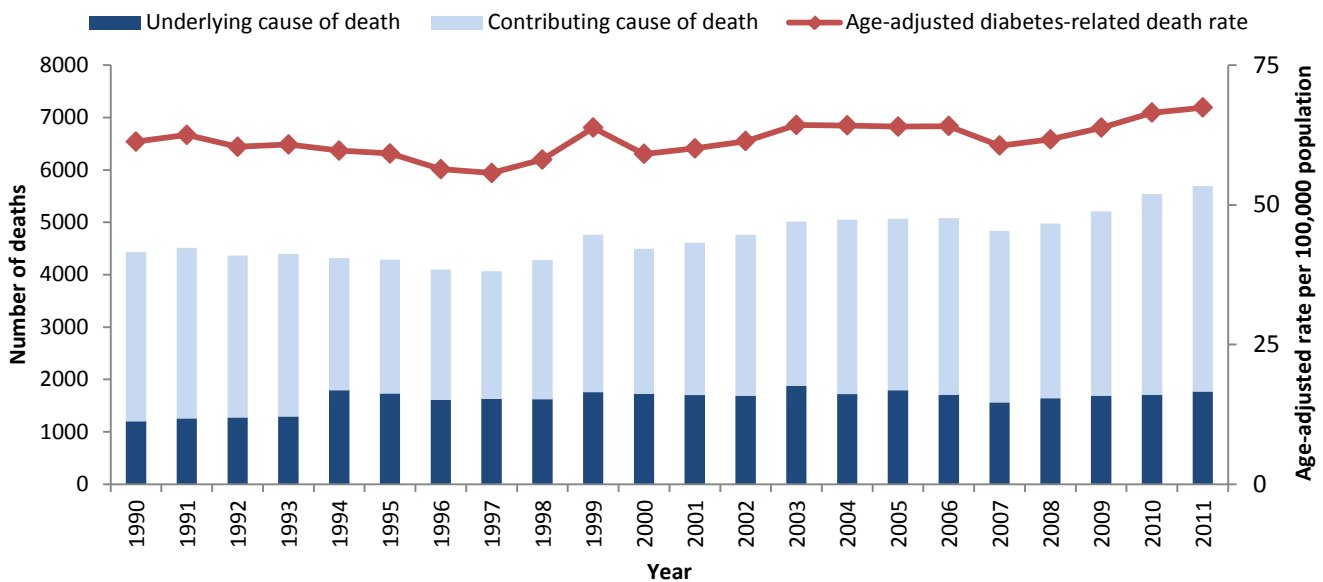


Diabetes-related Mortality in New York City

Diabetes is a chronic illness with many life-threatening complications, including heart disease, stroke and kidney failure. Overall, people with diabetes are about twice as likely to die as people of a similar age but without diabetes.¹ In 2011, 5,695 deaths (11%) in New York City (NYC) were diabetes-related (see Definitions). Thus, approximately one person dies of diabetes-related causes every 90 minutes in New York City. Two important modifiable risk factors for diabetes include being overweight or obese and physical inactivity.

- The age-adjusted diabetes-related death rate reached an all-time high in 2011 (67 deaths per 100,000 population), while the overall death rate in New York City has been decreasing.²

Number and rate of diabetes-related deaths, New York City, 1990-2011

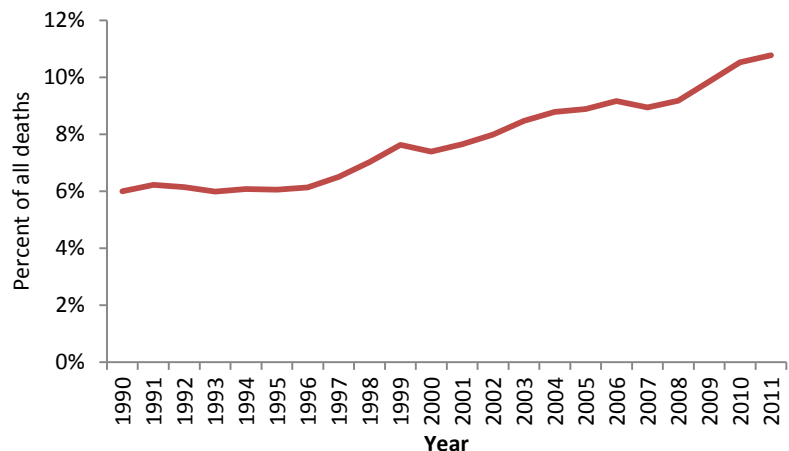


Sources: NCHS; Bureau of Vital Statistics, NYC DOHMH; US Census Bureau

Percentage of all New York City deaths related to diabetes is on the rise

- While the overall number of deaths in New York City is declining,² diabetes-related deaths are increasing.
- Since 1990, the proportion of all New York City deaths that were related to diabetes nearly doubled, from 6.0% in 1990 to 10.8% in 2011.

Percent of citywide deaths related to diabetes, New York City, 1990-2011



Sources: NCHS; Bureau of Vital Statistics, NYC DOHMH

Demographic characteristics of diabetes-related deaths

- Non-Hispanic blacks had the highest diabetes-related mortality rate of any racial/ethnic group at 116 deaths per 100,000 population, followed by Hispanics (81/100,000), non-Hispanic whites (45/100,000), and Asian/Pacific Islanders (41/100,000).
- Diabetes-related mortality rates were 2.7 times higher among individuals living in very high-poverty neighborhoods (see Definitions) than among those in low-poverty neighborhoods (114 vs. 42 deaths per 100,000 population).
- The diabetes-related mortality rate was 1.4 times higher for males than for females (80 vs. 58 deaths per 100,000 population).

Definitions

Underlying cause of death:

The condition indicated on the death certificate as starting the sequence of events leading to death.³

Contributing cause of death:

A condition other than the underlying cause that is included on the death certificate as contributing to the death.

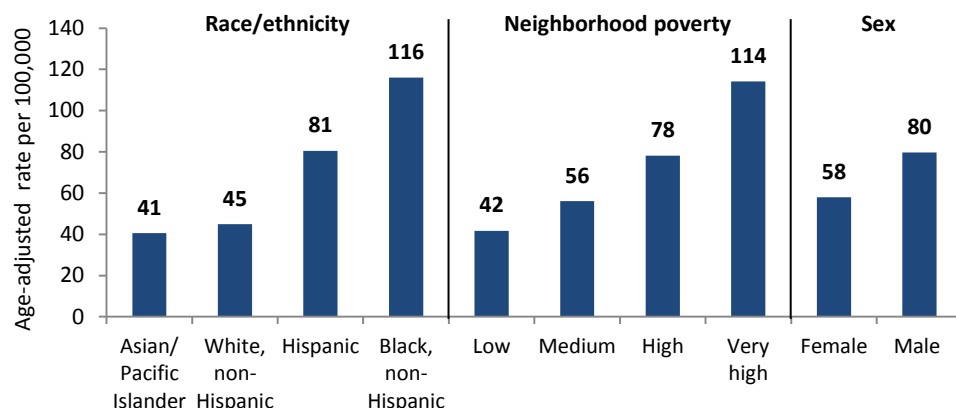
Diabetes-related cause of death:

Diabetes was documented on the death certificate as either an underlying or contributing cause of death.

Neighborhood poverty:

The percent of individuals in a New York City Census Tract area with incomes below 100% of the federal poverty level (Census 2010), separated into four groups: low (<10%), medium (10%–<20%), high (20%–<30%) and very high (≥30%).

Age-adjusted diabetes-related death rates, by demographic characteristics, New York City, 2011

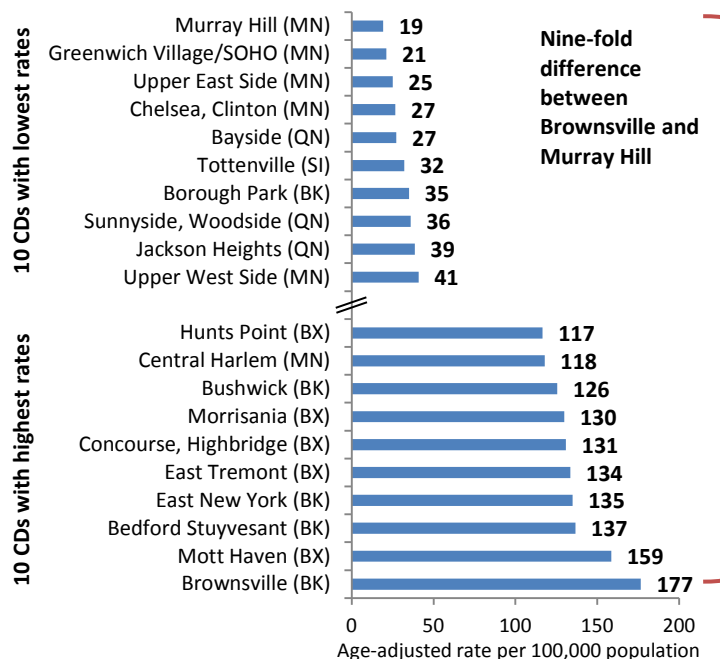


Sources: NCHS; Bureau of Vital Statistics, NYC DOHMH; US Census Bureau

Neighborhood differences in diabetes-related deaths across New York City

- Considerable disparity in diabetes-related mortality exists across New York City communities, with age-adjusted death rates as low as 19 deaths per 100,000 population in Murray Hill, Manhattan, and as high as 177/100,000 in Brownsville, Brooklyn – a nine-fold difference.
- Of the 10 community districts with the highest rates of diabetes-related mortality, four were in Brooklyn (BK), five were in the Bronx (BX), and one was in Manhattan (MN), while none were in Queens (QN) or Staten Island (SI).
- In the past decade, the diabetes-related mortality rate has increased more than 25% in half of New York City’s community districts, while the rate has decreased in only seven community districts (see Map in [Data Tables](#)).

NYC community districts (CDs) with highest and lowest age-adjusted diabetes-related death rates, 2011

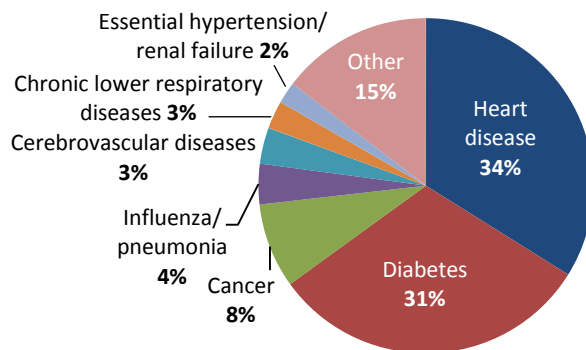


Sources: NCHS; Bureau of Vital Statistics, NYC DOHMH; NYC DOHMH population estimates

Underlying causes of diabetes-related deaths

- Diabetes damages large blood vessels, contributing to heart attacks and strokes, and injures small blood vessels, causing kidney failure and serious leg ulcers.⁴ It also impairs the body's ability to fight infection, increasing the risk of acquiring and dying from infections, such as pneumonia and influenza.¹
- Of the 5,695 diabetes-related deaths in 2011, 1,770 (31%) had diabetes as the underlying cause of death, while the remaining 69% had other underlying causes.
- Aside from diabetes, the most frequent underlying causes were heart disease (34%), cancer (8%), influenza and pneumonia (4%), cerebrovascular diseases, including stroke (3%), chronic lower respiratory diseases (3%), and essential hypertension and renal failure (2%).

Leading underlying causes of diabetes-related deaths, New York City, 2011



Source: Bureau of Vital Statistics, NYC DOHMH

Data Sources

Bureau of Vital Statistics: Data on deaths that occurred in New York City in 2011 were from the New York City Department of Health and Mental Hygiene's Bureau of Vital Statistics mortality data file.

NCHS: Data on deaths in New York City between 1990 and 2010 were from the National Center for Health Statistics (NCHS) mortality data files.

US Census Bureau: Rates were calculated using intercensal population estimates from the US Census, except for (1) community district rates, which used NYC DOHMH population estimates, modified from US Census Bureau intercensal estimates, file date November 2012, and (2) 2011 neighborhood poverty rates, which used estimates extrapolated (linear) from 2000 and 2010 Census counts.

Methods

Cause of death was coded according to the International Statistical Classification of Disease and Related Health Problems (ICD) – 9th (1990-1998) and 10th (1999-2011) Revisions – diabetes-related: E10-E14 (10th), 250 (9th). Rates were age-adjusted in five groups: 0-54, 55-64, 65-74, 75-84, 85+, to the 2000 US Standard Population.

References:

¹Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011.

²Zimmerman R, Li W, Begier E, Davis K, Gambatese M, Kelley D, Kennedy J, Lasner-Frater L, Madsen A, Maduro G, Sun Y. *Summary of Vital Statistics, 2011: Mortality*. New York, NY: New York City Department of Health and Mental Hygiene, Office of Vital Statistics, 2013.

³World Health Organization, Mortality (Cause of Death) data, September 2012: http://www.cdc.gov/nchs/data/icd9/MortData_InfoSheet.pdf; accessed on April 21, 2013.

⁴Forbes JM, Cooper ME. Mechanisms of diabetic complications. *Physiol Rev*. 2013 Jan; 93(1):137-88.

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MORE New York City Health Data and Publications

- For complete tables of data prepared for this Brief, visit nyc.gov/html/doh/downloads/pdf/epi/datatable28.pdf
- Visit EpiQuery – the Health Department's online, interactive health data system at nyc.gov/health/EpiQuery

Health Department Data & Statistics at nyc.gov/health/data