



Epi Data Brief

New York City Department of Health and Mental Hygiene

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Diabetes and Its Complications

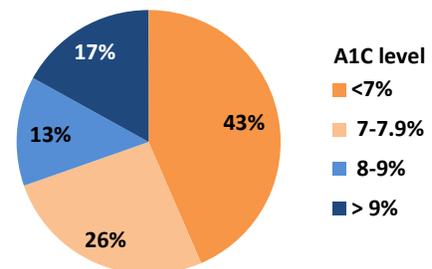
One in nine adults in New York City (NYC) reports having diabetes.¹ Diabetes can lead to a number of health complications because of the impact that high blood sugar and co-existing conditions like obesity, high blood pressure, and high cholesterol have on the body. Diabetes is a leading cause of lower extremity amputations, kidney failure, and new cases of blindness, and people with diabetes are at least twice as likely to die of heart disease than people without diabetes.² Good control of blood sugar, blood pressure, and cholesterol through lifestyle modification and medication management can prevent complications.³

Nearly one in five adults with diabetes who are receiving medical care has very high blood sugar levels

An A1C test measures average blood sugar over the past three months.⁴ Current guidelines recommend that non-pregnant adults with diabetes maintain their A1C level at less than 7%, although for some individuals a higher treatment target may be appropriate. The risk for complications rises with higher A1C levels.^{3,4}

- 81,513 (17%) adults with diabetes have an A1C level greater than 9% and an additional 39% have an A1C level between 7% and 9%.
- 31% of adults 18 to 44 years old have an A1C level greater than 9% compared with 11% of those 65 years and older.
- Adults with diabetes living in very high poverty neighborhoods* are more likely to have an A1C level greater than 9% than those living in low poverty neighborhoods (20% vs. 13%).
- In seven neighborhoods* more than 20% of adults with diabetes have an A1C level greater than 9%: Fordham-Bronx Park, Crotona-Tremont, Hunts Point-Mott Haven, Bedford Stuyvesant-Crown Heights, East New York, Williamsburg-Bushwick, and East Harlem.

A1C levels among adults with diabetes who received medical care in 2012, New York City



N=480,923; percentages do not add to 100 due to rounding.
Source: New York City A1C Registry 2012, crude estimates

*The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous zip codes. Neighborhood income levels are defined as: very high poverty (30% or more residents living at or below Federal Poverty Level [FPL]), high poverty (20 to <30% residents living at or below FPL), medium poverty (10 to <20% residents living at or below FPL), low poverty (0 to <10% residents living at or below FPL).

Definitions:

A1C is a blood test which measures average blood sugar levels over the past three months. This test is used to diagnose people with diabetes but is also used to monitor average blood sugar in people who have diabetes. An A1C level that is greater than 9% is estimated to correspond to an average blood sugar over 212 mg/dl.^{3,4} The National Committee for Quality Assurance defines poor control of A1C as an A1C greater than 9%.⁵

Dialysis is a medical treatment that removes waste, salt, and extra water from the body; keeps certain chemicals at the right levels; and helps control blood pressure in a person whose kidneys are not functioning properly.⁶

Hospitalizations among adults with diabetes are hospitalizations where diabetes is mentioned in any diagnosis field. These include hospitalizations with diabetes as a principal diagnosis and hospitalizations with diabetes as a secondary diagnosis or co-existing condition.

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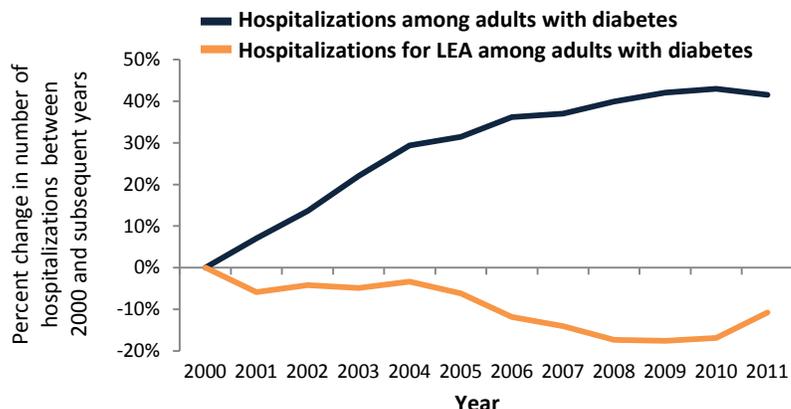
- For complete tables of data prepared for this Brief, visit nyc.gov/html/doh/downloads/pdf/epi/datatable36.pdf
- Visit EpiQuery – the Health Department’s online, interactive health data system at nyc.gov/health/EpiQuery

Data & Statistics at nyc.gov/health/data

Hospitalizations for diabetes and its complications are more common in certain populations

- In 2011, there were 232,254 hospitalizations among adults with diabetes. These hospitalizations accounted for 24% of all hospitalizations, a 37% increase since 2000.
- In 2011, there were 2,744 hospitalizations for lower-extremity amputation (LEA) among adults with diabetes, a decrease of 11% since 2000.
- The rate of hospitalizations with diabetes as a principal diagnosis among adults or for LEA among adults with diabetes was highest among those who were older, male, or living in the Bronx. In general, populations with higher prevalence of diabetes also had higher rates of hospitalizations for diabetes.

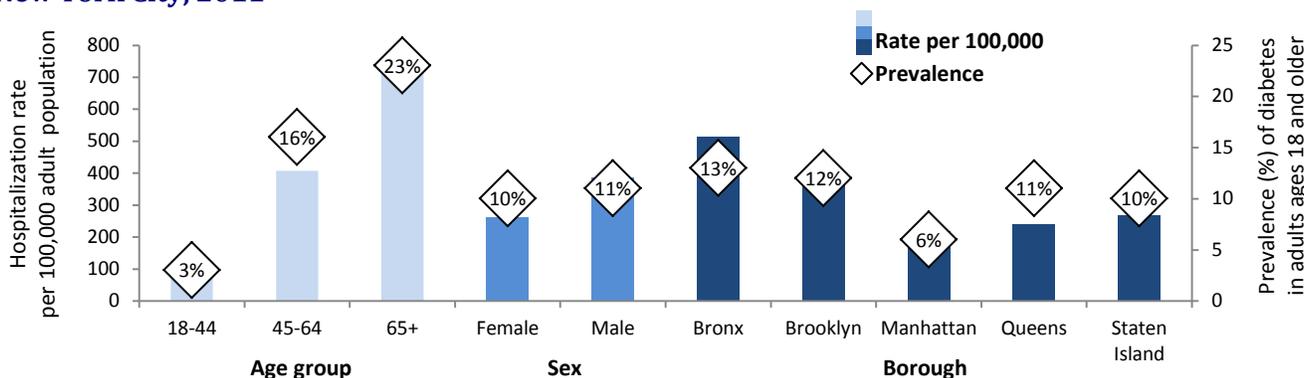
Percent change in hospitalizations among adults with diabetes and for lower extremity amputation (LEA) among adults with diabetes, New York City, 2000-2011



Sources: Statewide Planning and Research Collaborative System, 2000-2011; United States Census Bureau

- Neighborhoods with the highest rate of hospitalizations with diabetes as a principal diagnosis among adults include the South Bronx neighborhoods of Crotona-Tremont, High Bridge-Morrisania, and Hunts Point-Mott Haven (695.5, 659.5, and 721.6 per 100,000 population, respectively), and East Harlem (677.5 per 100,000 population). These rates are approximately eight times those of the neighborhoods with the lowest rates (Upper East Side and Greenwich Village-Soho, 84.3 and 84.8 per 100,000 population, respectively).

Hospitalizations with diabetes as a principal diagnosis and prevalence of diabetes among adults, New York City, 2011



Sources: Statewide Planning and Research Collaborative System, 2011; United States Census Bureau; Community Health Survey, 2011

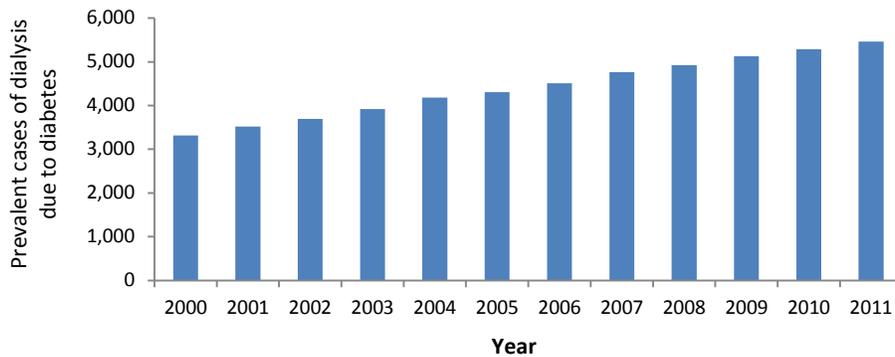
References:

- ¹ Gupta L, Olson C. Diabetes in New York City. New York City Department of Health and Mental Hygiene *Epi Data Brief*. 2013;26. <http://www.nyc.gov/html/doh/downloads/pdf/epi/databrief26.pdf>. Last accessed November 6, 2013.
- ² Centers 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. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf. Last accessed November 6, 2013.
- ³ American Diabetes Association. Standards of Medical Care in Diabetes—2013. *Diabetes Care* 2013;36(suppl 1):S11-66.
- ⁴ National Institute of Diabetes and Digestive and Kidney Diseases. U.S. Department of Health and Human Services, National Institutes of Health, NIH Publication NO. 11-7816, September 2011. http://diabetes.niddk.nih.gov/dm/pubs/A1CTest/A1C_Test_DM_508.pdf Last accessed November 1, 2013.
- ⁵ National Committee for Quality Assurance. DM Performance Measures. <http://www.ncqa.org/tabid/1109/Default.aspx>. Last accessed November 6, 2013.
- ⁶ Dialysis. National Kidney Foundation Web site. <http://www.kidney.org/atoz/content/dialysisinfo.cfm>. Last accessed November 6, 2013.

Thousands of people in New York City have kidney failure due to diabetes

People with diabetes are at increased risk for developing chronic kidney disease. If this progresses, it can result in kidney failure that requires dialysis or a transplant. Good control of blood sugar and blood pressure can decrease the risk and slow progression of kidney disease.³

Prevalent cases of dialysis among adults due to diabetes, New York City, 2000-2011



Source: United States Data Renal System, 2000-2011

- In 2011, there were 5,458 adults in NYC on dialysis due to diabetes, a 65% increase since 2000.
- In 2011, there were 1,327 new cases of dialysis among adults in NYC due to diabetes, a 23% increase since 2000.

Data Sources:

Statewide Planning and Research Collaborative System (SPARCS) 2000-2011: SPARCS is an administrative database of all hospital discharges reported by New York State (NYS) hospitals to the NYS Department of Health. Diagnoses are coded according to the International Statistical Classification of Diseases and Related Health Problems-9th Revision framework and outcomes are defined according to the Agency for Healthcare Research and Quality Prevention Quality Indicators. All data presented in this report are limited to NYC residents ages 18 and older and rates are age-adjusted to the 2000 Census.

<http://www.health.ny.gov/statistics/sparcs/>,

http://www.qualityindicators.ahrq.gov/Modules/pqi_resources.aspx

United States Census Bureau: Rates were calculated using NYC Department of Health and Mental Hygiene population estimates, modified from U.S. Census Bureau intercensal population estimates from 2000-2010 and last updated July 22, 2013.

New York City A1C Registry 2012: The NYC A1C Registry (Registry) was created in 2006 and contains A1C tests sent to clinical laboratories for NYC residents. All data presented in this report are limited to NYC adults ages 18 and older with at least one A1C test in the Registry in 2012 and at least two A1C test values of 6.5% or greater at any point in time since inception of the Registry in 2006. This definition utilizes the American Diabetes Association-recommended A1C cut-point of 6.5% for diabetes diagnosis since the Registry does not contain diagnosis codes.

United States Data Renal System (USRDS) 2000-2011: The USRDS, funded by the National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, is the national data registry that collects, analyzes, and distributes information on the end-stage renal disease (ESRD) population in the U.S., including treatments and outcomes. Data for NYC residents reported in this brief were obtained using the RenDER query system as of October 2013. The interpretation and reporting of these data are the responsibility of the authors and in no way should be seen as an official policy or interpretation of the U.S. government.

http://www.usrds.org/render/xrender_home.asp

Community Health Survey (CHS) 2011: The CHS is a survey of about 9,000 adults ages 18 and older, conducted annually by the Health Department. Estimates presented here are based on self-reported data and age-adjusted to the U.S. 2000 Standard Population. The CHS has included adults with landline phones since 2002 and, starting in 2009, also has included adults who can be reached only by cell phone. Starting in 2011, CHS weighting methods were updated to incorporate Census 2010 data and additional demographic characteristics. For survey details, visit www.nyc.gov/health/survey.

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