

ED MANGANO
COUNTY EXECUTIVE



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DIABETES: FROM THE NATIONAL, STATE AND LOCAL PERSPECTIVE

Diabetes is a serious life-long disease which can lead to medical complications and even premature death if uncontrolled. It is important that people with diabetes and those at risk for diabetes take steps to be aware of and take control of their health.

The following report details information on diabetes prevalence, risk factors, morbidity and mortality. The goal of this report is to raise awareness of residents' risk for diabetes and preventive steps they can take.



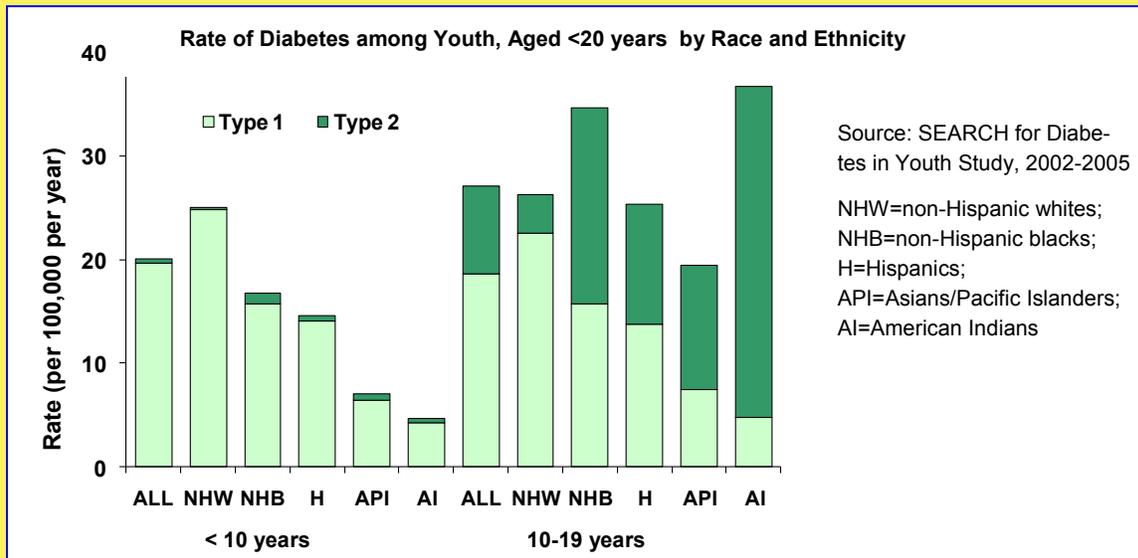
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Definition of Diabetes

Diabetes is a group of diseases characterized by high levels of blood glucose due to defects in insulin production, insulin action or both. Diabetes is a chronic disease which can lead to serious complications and premature death; however, with the help of health care providers and self-care, people with diabetes can control the disease and lower their risk of complications.

Type 1 Diabetes: Previously called juvenile-onset diabetes, Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, which are the only cells in the body that produce insulin, which regulates blood glucose. People with Type 1 Diabetes must have insulin delivered by injection or a pump. Type 1 Diabetes is usually diagnosed in children and young adults, though onset can occur at any age. Risk factors for type 1 Diabetes may be autoimmune, genetic or environmental. Unfortunately, there is no known way to prevent Type 1 Diabetes¹.

Type 2 Diabetes: Previously called adult-onset diabetes, Type 2 diabetes usually starts as insulin resistance, meaning the cells in the body do not use insulin properly. As the need for insulin rises, the pancreas loses its ability to produce it. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity and race/ethnicity. African Americans, Hispanics, American Indians, some Asian Americans and Native Hawaiians/ Pacific Islanders are at particularly high risk for type 2 diabetes. Type 2 diabetes in children and adolescents, although rare, is being diagnosed more frequently among these minority groups (see graph below)¹.



Diabetes Prevalence: Nationwide In 2010, 25.8 million children and adults in the United States—8.3% of the population—have diabetes. Of those with diabetes, 18.8 million people are diagnosed and 7 million people have undiagnosed diabetes. This means that they are unaware that they have diabetes. People with diabetes may have mild or no symptoms and have it for 4 to 7 years before being diagnosed¹.

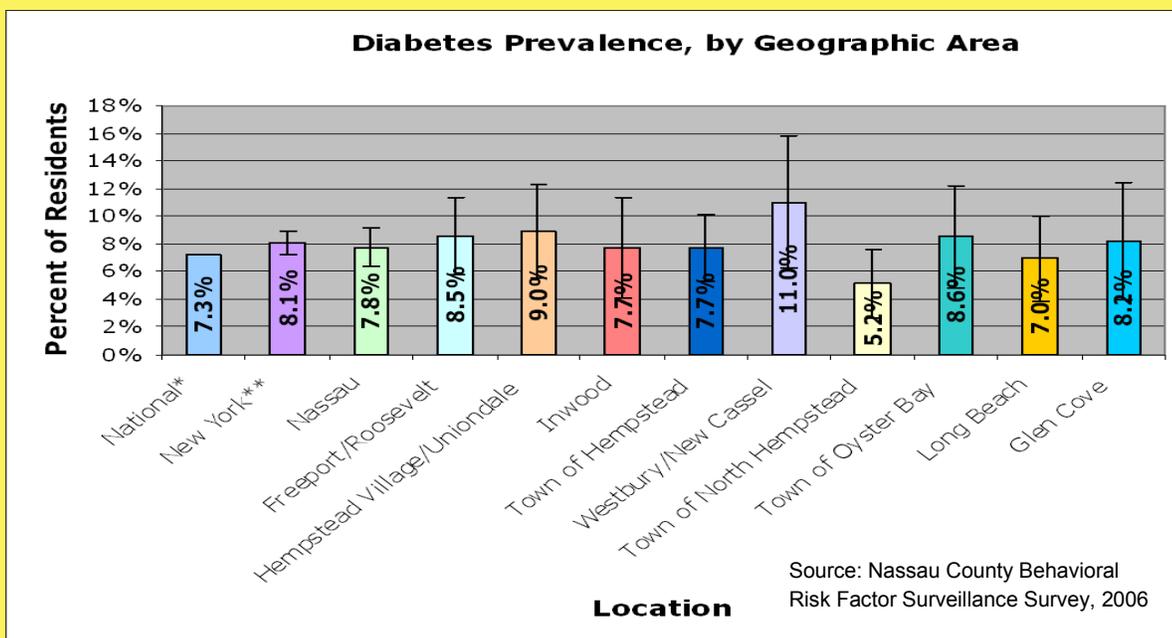


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Diabetes Prevalence: Nassau County

Overall, 7.8% of Nassau County residents have ever been told by a health professional that they have diabetes. This percentage falls between the national (7.3%) and New York (8.1%) diabetes prevalence in 2006 ².

Of the communities in Nassau County, Westbury/ New Cassel reported the highest percentage (11%) of diabetes, followed by Hempstead Village/Uniondale (9%), and Town of Oyster Bay (8.6%) ².



- Diabetes prevalence increases with age. Nassau County residents 55-64 years old reported higher lifetime prevalence of diabetes than all younger age groups².
- College graduates reported lower lifetime prevalence than those with less than high school education².
- Residents with annual household incomes less than \$15,000 were significantly more likely to report having diabetes than those making more than \$75,000 ².
- Hispanics (11%) were more likely to report having ever been told they have diabetes than all other races (White, non Hispanic=7.3%, Black non Hispanic= 6.4%, and Other= 9.9%). However, these differences were not statistically significant².

Although the county as a whole reports relatively low prevalence of diabetes, certain communities report higher prevalence, hospitalizations and mortality (discussed later).



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Diabetes Risk Factors

*If you are at risk for diabetes it is **essential** that you take control of your health by improving your diet, physical fitness, and self-care!*

Risk factors for Type 1 Diabetes include autoimmune, genetic and environmental factors and thus are harder to prevent than Type 2 Diabetes.

By contrast, risk factors for Type 2 Diabetes include behaviors such as physical inactivity, poor diet leading to obesity. In addition, older age, family history of diabetes, prior gestational diabetes diagnosis and impaired glucose tolerance are all risk factors for Type 2 Diabetes. In addition, certain racial and ethnic groups are at a higher risk for type 2 diabetes including African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islanders¹.

Diet:

- Only one quarter of Nassau County residents (25.7%) reported eating five or more fruits and vegetables daily ².
- Although not statistically significant, Nassau County was lower than the New York State level but better than the nation for daily consumption of 5 or more fruits and vegetables ².
- Women were significantly more likely than men to eat five or more servings of fruits and vegetables each day. Whites were significantly more likely than Hispanics to consume five or more fruits and vegetables per day. Although not significant, Whites also reported consuming 5 or more fruits and vegetables per day than Blacks².
- The Town of North Hempstead had the highest percentage of residents eating five or more fruits and vegetables daily. Inwood (18.9%) and Hempstead Village/Uniondale had the lowest. Recommended fruit and vegetable consumption in Hempstead Village/Uniondale was significantly lower than New York State, Nassau County and the Town of North Hempstead ².

Obesity:

- Overall, 19.6% of Nassau County residents were obese, 38.9% were overweight, and 41.4% were considered to have a healthy weight. While the county's level of obesity falls below that of New York State's (22.2%) and the nation (24.4%), the magnitude is still cause for concern. The estimate of overweight in the county (38.9%) exceeded both state and national estimates (37.6% and 36.7%, respectively)².
- Males were significantly more likely to be overweight than females. Blacks were significantly more likely to be obese compared to Whites ².
- The highest level of overweight was reported in Westbury/New Cassel and the lowest in Glen Cove. There were no statistically significant differences in levels of overweight between Nassau County jurisdictions. Inwood had the highest level of obesity, while the Town of North Hempstead had the lowest. However, there were no statistically significant differences between Nassau County jurisdictions. Of note, while the Town of Oyster Bay had low levels of obesity, it ranked second only to Westbury/New Cassel in overweight ².



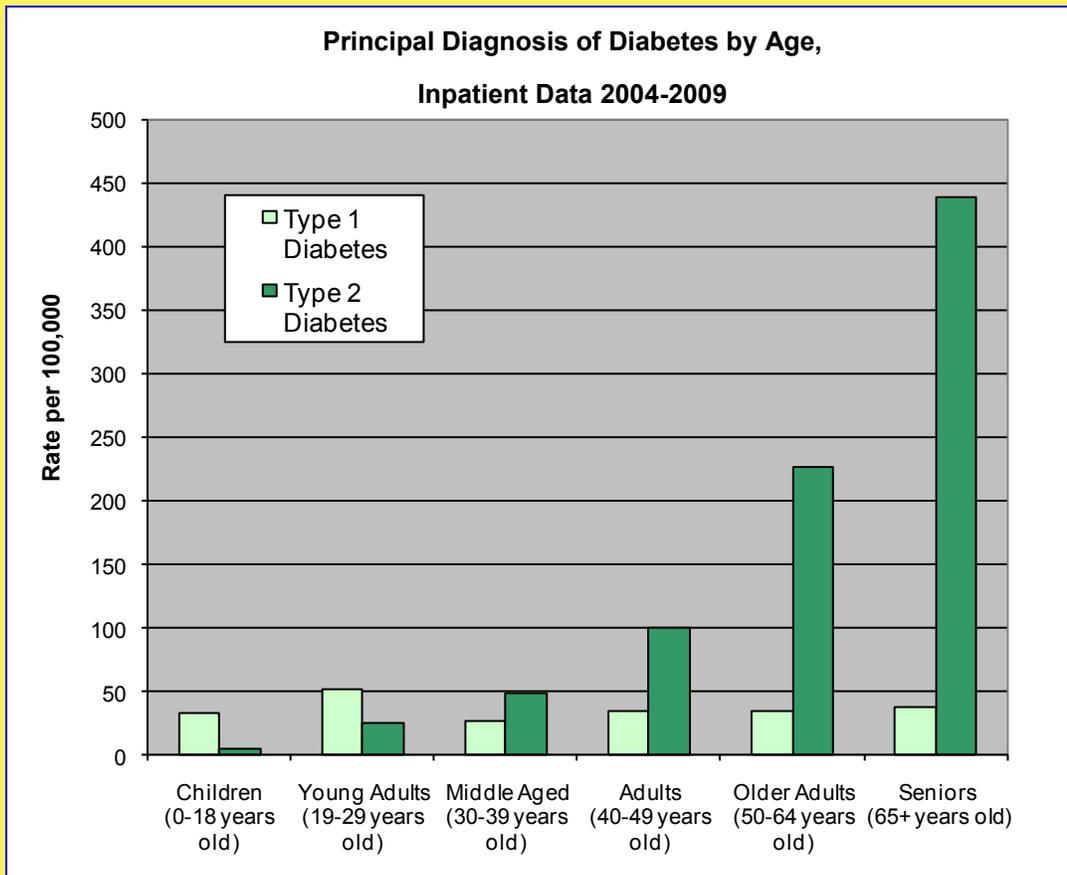
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Diabetes Morbidity: Hospitalizations in Nassau County

Diabetes is a common cause of hospitalizations in Nassau County. From 2004-2009, there were 178,410 hospitalizations among adults for which diabetes was mentioned in any diagnosis field, representing 16.36% of all hospitalizations. Within this figure, .85% reported any Type 1 Diabetes diagnoses, while the remaining 15.51% were Type 2⁴. Clearly the burden of Type 2 Diabetes surpasses that of type 1 and accounts for a large proportion of hospitalizations among the adult population. By comparison, New York City reported that 20.3% of all hospitalizations among adults had any mention of diabetes in any diagnoses field in 2003⁵.

Sex: The rate of both type 1 and type 2 Diabetes as a principal diagnosis in hospitalization data reveal a statistically significant difference, with males reporting a higher rate of both forms of diabetes as compared to females. These differences are small however, with males reporting a rate of 32.83 per 100,000 for Type 1, as compared to females (38.45) and males reporting a rate of 148.15 per 100,000 for Type 2, as compared to females (114.03)⁴.

Age: The rate of hospitalizations with Type 1 diabetes as a principal diagnosis remains steady over age groups with a significant increase in the young adult (19-29 year old) age bracket.



Contrasting with type 1 diagnosis, the rate of hospitalizations with type 2 diabetes as a principal diagnosis increases with age, with a dramatic and significant increase between the adult (40-49 yrs old) to older adult (50-64) age group⁴.

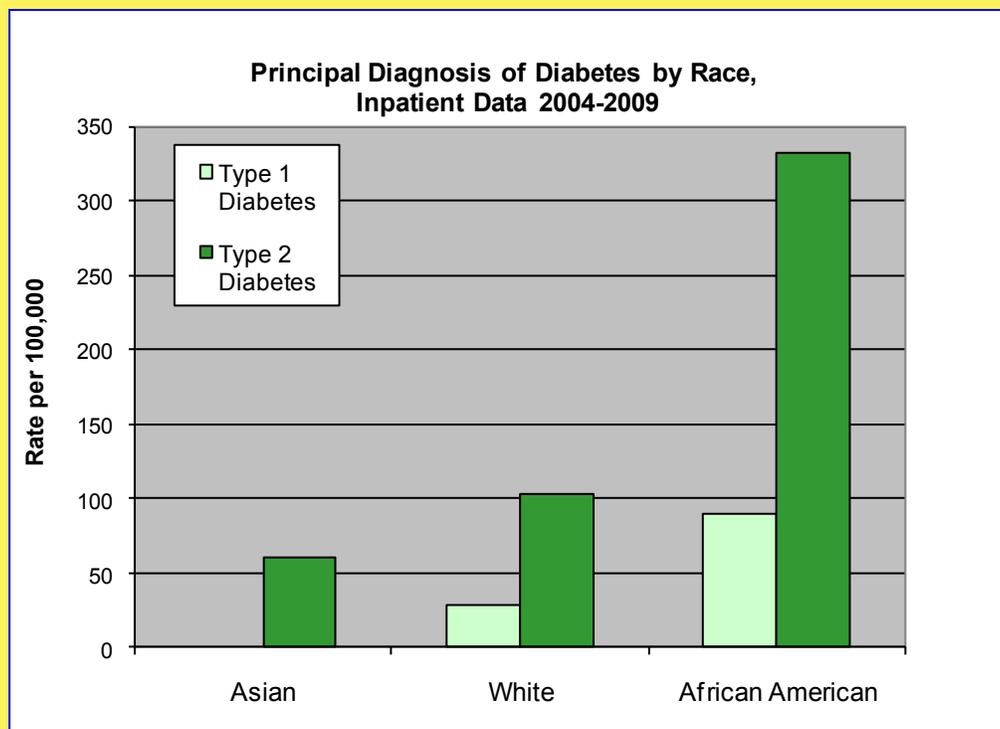
It is important that aging adults monitor their risk for Type 2 diabetes, while the parents of young children at risk for type 1 and type 2 diabetes be aware of their child's health status.



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Diabetes Hospitalizations: Racial Disparities

There are clear racial disparities in diabetes hospitalizations, with African Americans hospitalized with the diagnosis of both Type 1 and Type 2 at significantly higher rates than Whites ⁴. This relationship is also seen in outpatient data. Of note, these racial differences do not follow the prevalence rates of diabetes by race, as White and African American Nassau County residents reported no significant differences in prevalence of diabetes.



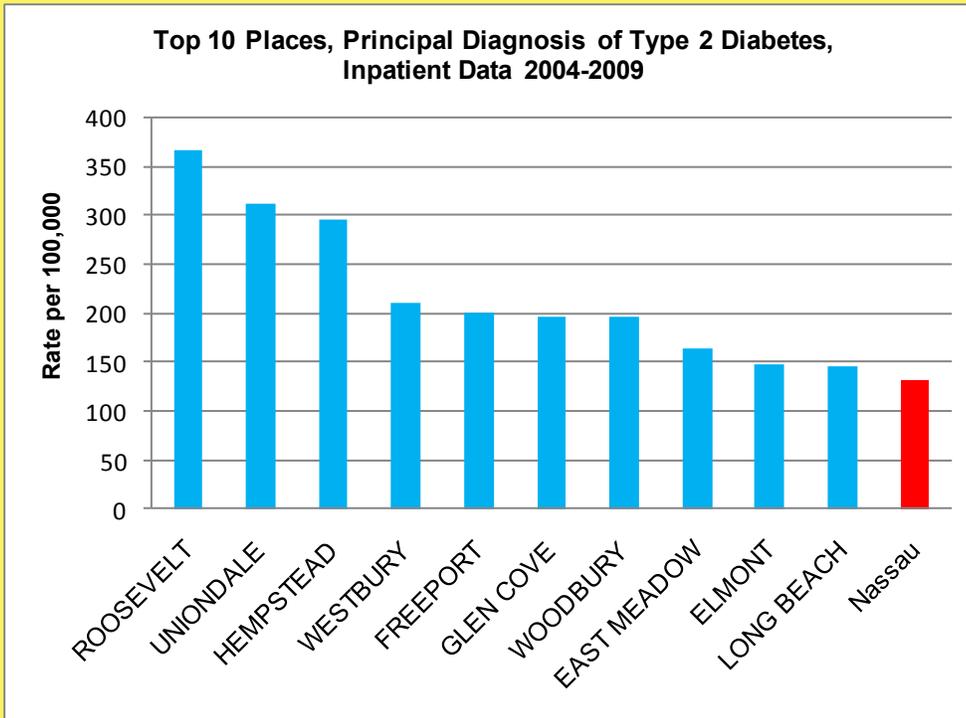
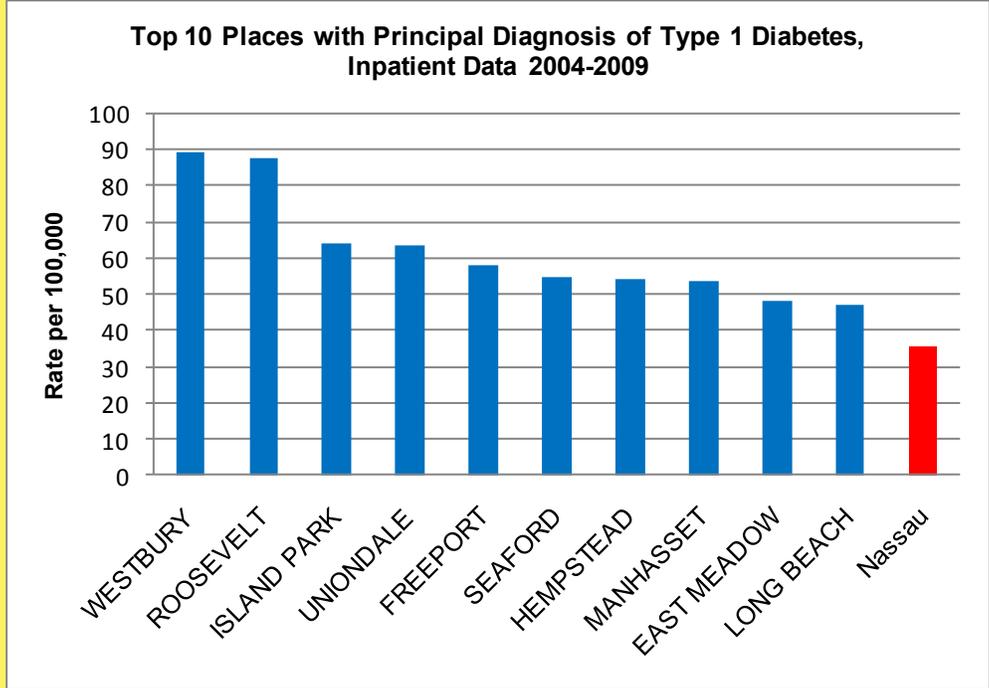
Hospitalization differences by race have been reported **nationally** as well. From 1980 through 2006, age-adjusted hospital discharge rates for diabetes as first-listed diagnosis declined 71% among whites (from 120.7 to 35.5 per 1,000 diabetetic population) and about 59% among blacks (from 157.2 to 63.3 per 1,000 diabetetic populations). The rates were higher among blacks. In 2006, the age-adjusted rate for blacks (63.3) was 78% higher than for whites (35.5) ⁵.

Ethnic Differences: Outpatient data reveals no ethnic differences in either diabetes diagnoses, while inpatient data reveals a small difference such that Non Hispanics with a principal diagnosis of Type 2 diabetes were hospitalized at a higher rate than Hispanics ⁴.



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Hospitalization data revealed that Westbury had the highest rate of hospitalizations with a primary diagnosis of type 1 diabetes, 2.5 times higher than the county rate. Roosevelt follows closely behind with a rate of 87.64 per 1000,000 ⁴.



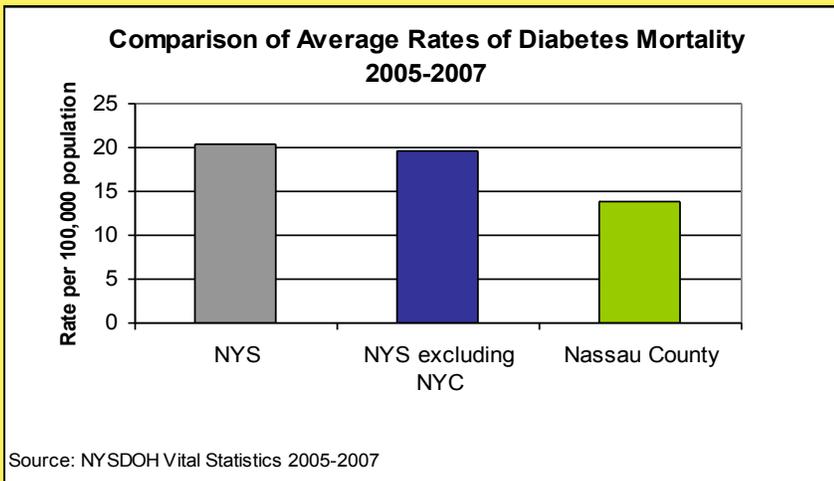
Hospitalization data with revealed that Roosevelt reported a rate of type 2 diabetes hospitalizations approximately 3 times the county level, at 376.24 per 100,000.

It is clear that residents hospitalized with a diagnosis of type 2 diabetes are disproportionately from low income areas in NC. The communities listed in this graph are among the “pockets of poverty” which consistently report poor health indicators ⁴.



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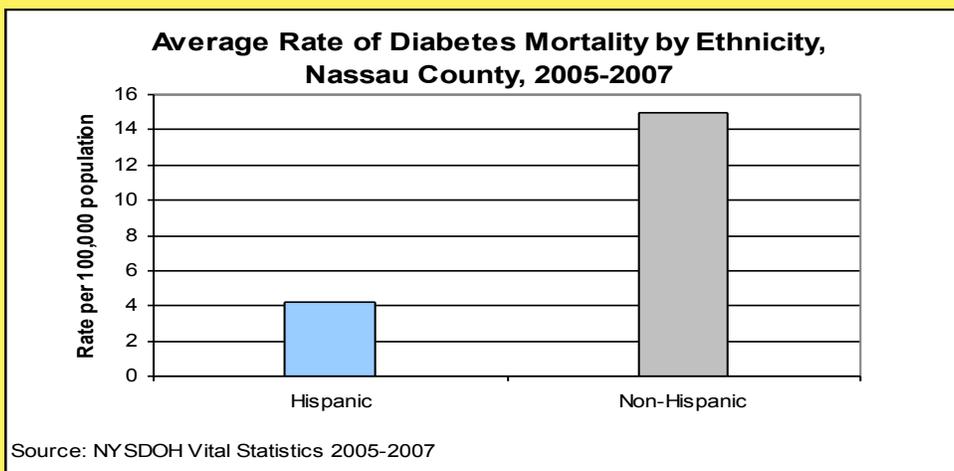
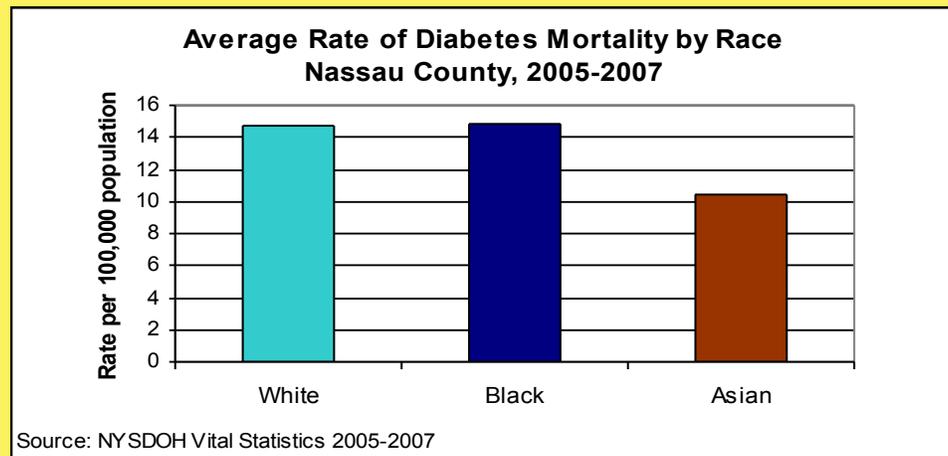
Diabetes Mortality



The rate of diabetes mortality in Nassau County is significantly less than that observed in NYS and NYS excluding NYC.

The latest national diabetes mortality rate is 24.8 per 100,000 (2004-2006), which is higher than that observed in NC (13.9), NYS (20.3) and NYS excluding NYC (19.6) for the years 2005-2007⁶.

The diabetes mortality rate among whites in NC is similar to that observed among blacks; both are greater than that observed among Asians⁶.



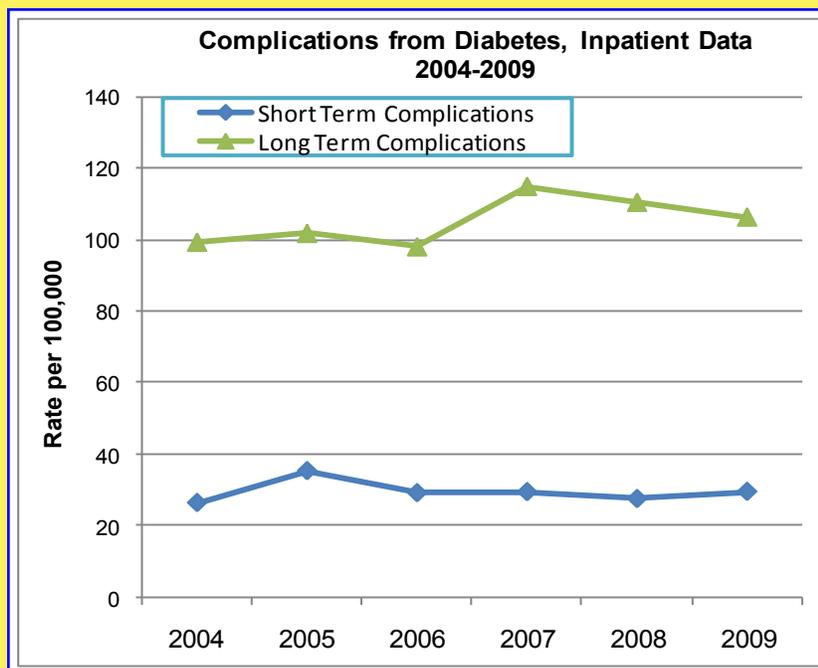
The diabetes mortality rate observed among non-Hispanics in Nassau County is 3.5 times greater than that observed among Hispanics⁶.



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Diabetes Complications

Complications from diabetes can be categorized as either short term or long term. Short term complications are potentially life-threatening complications of poorly controlled diabetes including diabetic ketoacidosis, hyperosmolarity (biochemical imbalances) and coma. Uncontrolled diabetes refers to blood glucose levels that put a patient at risk. Long term complications include kidney, eye,



As adults in Nassau County are diagnosed at increasing rates, long term complications are expected to rise as those residents live with the condition over time. By comparison, short term complications have been stable over the last six years.

Management and control of diabetes are key to preventing complications—both long and short term.

National Statistics on Diabetes Complications

Heart Disease and Stroke: Adults with diabetes have heart disease death rates about 2 to 4 times higher than adults without diabetes. The risk for stroke is two to four times higher among people with diabetes⁷.

High Blood Pressure: In 2003 to 2004, 75 % of adults with self-reported diabetes had blood pressure greater than or equal to 130/80 millimeters of mercury (mm Hg) or used prescription medications for hypertension⁷.

Blindness: Diabetes is the leading cause of new cases of blindness among adults ages 20 to 74 years⁷.

Kidney Disease: Diabetes is the leading cause of kidney failure, accounting for 44 % of new cases in 2005⁷.

Nervous System Disease: About 60 to 70 % of people with diabetes have mild to severe forms of nervous system damage. Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations⁷.

Amputations: More than 60 % of non-traumatic lower-limb amputations occur in people with diabetes⁷.

Dental Disease: Gum disease is more common in people with diabetes⁷.

People with diabetes are more susceptible to many other illnesses and, once they acquire these illnesses, often have worse prognoses. For example, they are more likely to die with pneumonia or influenza.



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Diabetes Control

The following sections describe three important measures of diabetes control and quality: blood sugar testing, foot examination, and dilated eye examination. Residents who reported a diabetes diagnosis in the 2006 Nassau County Behavioral Risk Factor Survey, were asked the following questions regarding their management.

Blood Sugar Testing (A1C)

Hemoglobin A1C measures the average level of blood sugar during the previous three months. For diabetics with well-controlled glucose, A1C should be tested twice a year. For those without controlled glucose levels, it should be tested four times per year.

- Overall, 78.0% of diabetic Nassau County residents reported having been checked for A1C two or more times in the past year, 4.6% of diabetics reported not having been checked and another 8.1% had never heard of such a test².

Despite the differences in causes and risk factors of the disease, patients with type 1 and type 2 diabetes need to take the same steps to manage their illness and prevent any harmful complications.

Foot Exam

Amputation and foot ulceration are common consequences of uncontrolled diabetes and are major causes of morbidity and disability. Early recognition and management of problems can prevent or delay adverse outcomes. All individuals with diabetes are recommended to receive an annual foot exam to identify these high risk conditions.

- Overall, 80.4% of diabetic Nassau County residents reported having had their feet checked by a health professional at least once in the past year².

Eye Exam

Retinopathy, cataracts, and blindness are common visual consequences of uncontrolled diabetes. Early recognition and management of problems can prevent or delay adverse outcomes. All individuals with diabetes are recommended to receive an annual dilated eye examination to identify these high risk conditions.

- Overall, 85.1% of diabetic Nassau County residents reported having had a dilated eye examination within the past year².

A majority of Nassau County residents report good diabetes control through regular blood sugar testing, foot and eye exams.

It is extremely important that people with diabetes continue their self-care and management to prevent complications previously discussed.

References & Educational Resources:

1. [2011 National Diabetes Fact Sheet](#), Center for Disease Control
2. [2006 Nassau County Behavioral Risk Factor Survey](#), Nassau County Department of Health
3. [2010-2013 Community Health Assessment](#), Nassau County Department of Health
4. New York State Department of Health Statewide Planning and Research Cooperative System (SPARCS) Hospitalization Data, Nassau County, 2004-2009.
5. [Diabetes Data & Trends](#), Center for Disease Control
6. New York State Vital Statistics, New York State Department of Health
7. [National Diabetes Statistics, 2011](#) National Diabetes Information Clearinghouse, NIH