

# Diabetes Report Card

2012

National Center for Chronic Disease Prevention and Health Promotion  
Division of Diabetes Translation



## Purpose of This Report

This report is required under the Catalyst to Better Diabetes Care Act of 2009, which is part of the Patient Protection and Affordable Care Act (Section 10407 of Public Law 111-148, hereafter called the Affordable Care Act). The act states that the report card should be published by the Centers for Disease Control and Prevention (CDC) every 2 years and include data about diabetes and prediabetes, preventive care practices, risk factors, quality of care, diabetes outcomes, and, to the extent possible, trend and state data.

The *Diabetes Report Card 2012* uses 2010 data (the most recent data available) to present a profile of diabetes and its complications at the national and state level. It includes information about prediabetes awareness, diabetes outcomes, and risk factors. The estimates in this report were calculated by CDC staff and are available in more detail at CDC's National Diabetes Surveillance System Web site at [www.cdc.gov/diabetes/statistics](http://www.cdc.gov/diabetes/statistics).

## Opportunities for Better Diabetes Prevention and Care in the Affordable Care Act

The Affordable Care Act (the health care law of 2010) includes several provisions that directly address gaps in diabetes prevention, screening, care, and treatment. The Catalyst to Better Diabetes Care Act of 2009, which is included in the Affordable Care Act, directs the U.S. Department of Health and Human Services and CDC to enhance diabetes surveillance and quality standards across the country. In addition, diabetes is specifically targeted by provisions on administering private health insurance wellness and prevention programs (Section 2717), Medicaid health homes for enrollees with chronic conditions (Section 2703), the Medicaid Incentives to Prevent Chronic Disease Program (Section 4108), and the Medicare Independence at Home demonstration program (Section 3024).

For more information on health care provisions in the Affordable Care Act, visit [www.healthcare.gov](http://www.healthcare.gov).

### For More Information

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### Suggested Citation

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## Diabetes Overview

Diabetes is a group of diseases characterized by high blood glucose (blood sugar). When a person has diabetes, the body either does not produce enough insulin or is unable to use its own insulin effectively. Glucose builds up in the blood and causes a condition that, if not controlled, can lead to serious health complications and even death. The risk of death for a person with diabetes is twice the risk of a person of similar age who does not have diabetes.

Diabetes is a major cause of heart disease and stroke. Death rates for heart disease and the risk of stroke are about 2–4 times higher among adults with diabetes than among those without diabetes.<sup>1</sup> In addition, 67% of U.S. adults who report having diabetes also report having high blood pressure.<sup>1</sup> For people with diabetes, high blood pressure levels, high cholesterol levels, and smoking increase the risk of heart disease and stroke.<sup>2</sup> This risk can be reduced by controlling blood pressure and cholesterol levels and stopping smoking.

Diabetes can also lead to other complications, such as vision loss, kidney failure, and amputations of legs or feet. Effective glucose control, as measured by A1c levels, and blood pressure control can prevent or delay these complications.<sup>1</sup>

Average medical expenses are more than twice as high for a person with diabetes as they are for a person without diabetes. In 2007, the estimated cost of diabetes in the United States was \$174 billion. That amount included \$116 billion in direct medical care costs and \$58 billion in indirect costs (from disability, productivity loss, and premature death).<sup>1</sup>

The most common forms of diabetes are as follows:

- **Type 1 diabetes** accounts for about 5% of all diagnosed cases of diabetes. Type 1 is usually first diagnosed in children and young adults, although it can occur at any time. To survive, people with type 1 diabetes use insulin from an injection or a pump. Risk factors for type 1 diabetes can be autoimmune, genetic, or environmental. At this time, there are no known ways to prevent type 1 diabetes.<sup>1</sup>
- **Type 2 diabetes** accounts for about 95% of diagnosed diabetes in adults. Several studies have shown that healthy eating and regular physical activity, used with medication if prescribed, can help control health complications from type 2 diabetes or can prevent or delay the onset of type 2 diabetes.<sup>1</sup>

- **Gestational diabetes** develops and is diagnosed as a result of pregnancy in 2%–10% of pregnant women.<sup>3</sup> Gestational diabetes can cause health problems during pregnancy for both the child and mother. Children whose mothers have gestational diabetes have an increased risk of developing obesity and type 2 diabetes.<sup>4</sup> Women who have gestational diabetes face a higher risk of developing type 2 diabetes in the future. Research has shown that 10–20 years after a woman has had gestational diabetes, she has a 35%–60% chance of developing type 2 diabetes.<sup>5</sup>

Rates for type 2 diabetes rise sharply with age for both men and women and for members of all racial and ethnic groups. The prevalence of diagnosed diabetes is about seven times as high among adults aged 65 years or older as among those aged 20–44 years. Race and ethnicity also are risk factors for diabetes. Most minority populations in the United States, including Hispanic Americans and non-Hispanic blacks, have a higher prevalence of diabetes than their white non-Hispanic counterparts.

Although diabetes prevalence varies widely among populations and tribes, diabetes disproportionately affects American Indians and Alaska Natives in the United States, with diagnosed diabetes rates more than twice as high as the rates for non-Hispanic whites.<sup>1</sup> Asian Americans are at higher risk of developing type 2 diabetes, despite having, on average, a substantially lower body mass index when compared with non-Hispanic white counterparts.<sup>6</sup> Diabetes develops at younger ages in racial and ethnic minority populations, which puts minorities at higher risk of developing complications at a younger age.<sup>7</sup>

### Prevalence of Diagnosed Diabetes, 2007–2009

#### U.S. Adults, by Age<sup>a</sup>

20–44 years	2.6%
45–64 years	11.7%
≥65 years	18.9%

#### U.S. Adults Aged ≥20 Years, by Race and Ethnicity<sup>b,c</sup>

American Indian and Alaska Native	16.1%
Asian American	8.4%
Hispanic	11.8%
Non-Hispanic black	12.6%
Non-Hispanic white	7.1%

<sup>a</sup> National Health Interview Survey.

<sup>b</sup> *National Diabetes Fact Sheet, 2011.*

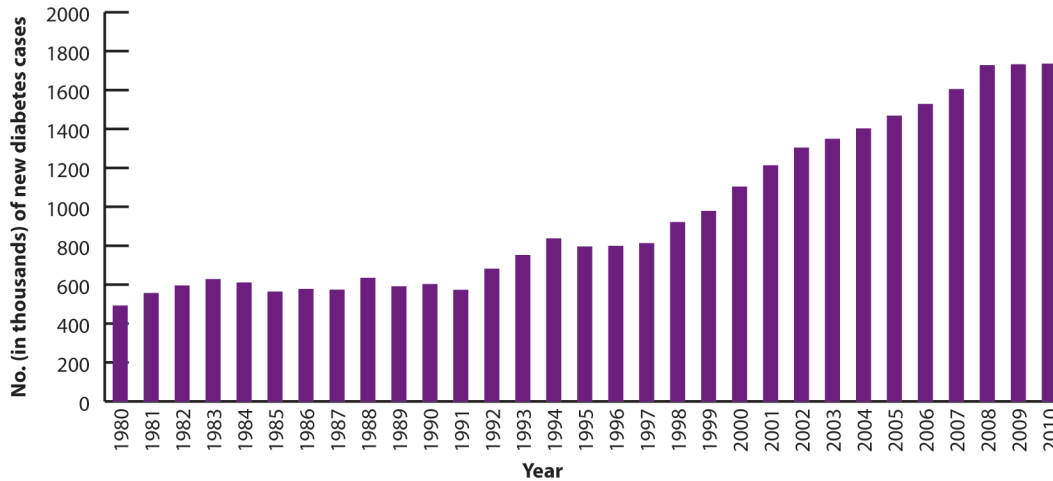
<sup>c</sup> Data were age adjusted. See Technical Notes for more details.

## Incidence of Diagnosed Diabetes

Figure 1 shows diabetes incidence in the United States, which is the number of new cases diagnosed each year. The number of new cases of diabetes changed little from 1980 through 1990, but began increasing in 1992. From 1990 through 2010, the annual number of new cases of

diagnosed diabetes almost tripled. The rise in the incidence of type 2 diabetes cases is associated with increases in obesity, decreases in leisure-time physical activity, and the aging of the U.S. population.<sup>7</sup>

**Figure 1. Annual Number of New Cases of Diagnosed Diabetes Among U.S. Adults Aged 18–79 Years, 1980–2010**



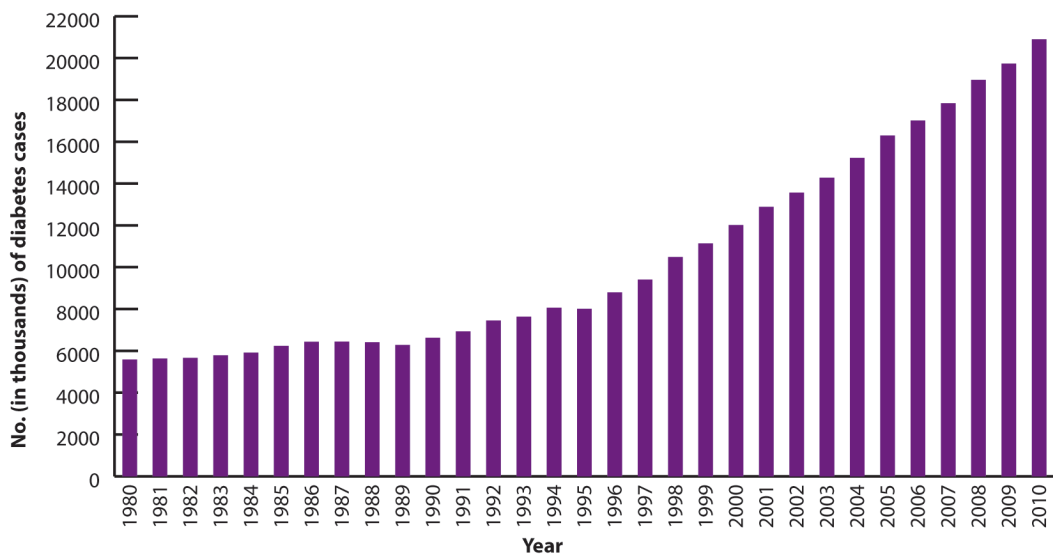
Source: National Diabetes Surveillance System, National Health Interview Survey data.

## Prevalence of Diagnosed Diabetes

Figure 2 shows diagnosed diabetes prevalence in the United States, which is the total number of existing (including newly diagnosed) cases for each year. Similar to the incidence, the prevalence of diabetes remained fairly constant from 1980 through 1990. However, since 1990, the prevalence has steadily increased. Many people also have undiagnosed diabetes and are unaware of their condition.

A 2010 CDC study projected that as many as one of three U.S. adults could have diabetes by 2050 if current trends continue.<sup>8</sup> To avert this increase, the U.S. Department of Health and Human Services (HHS) has a multipronged strategy that encompasses population-based prevention and individual prevention, care, and treatment.

**Figure 2. Annual Number of U.S. Adults Aged 18–79 Years with Diagnosed Diabetes, 1980–2010**



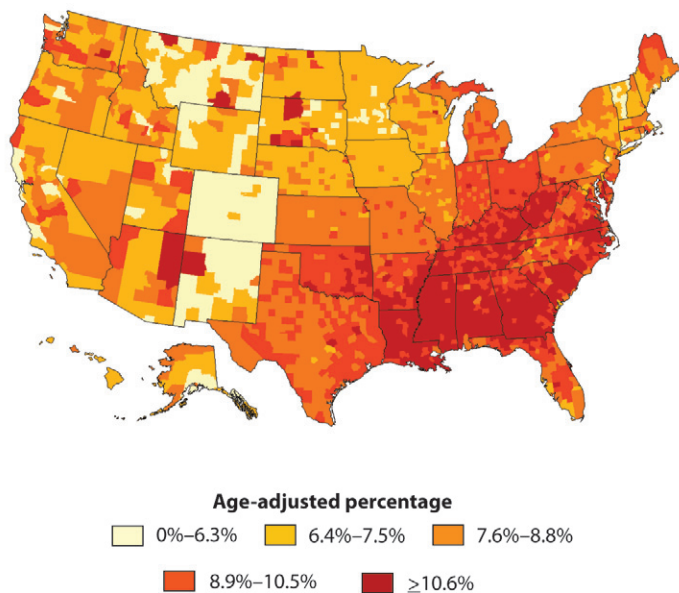
Source: National Diabetes Surveillance System, National Health Interview Survey data.

## Diagnosed Diabetes

Table 1 presents the percentages of U.S. adults who report that they have ever been told that they have diabetes, by state. Data for people with undiagnosed diabetes are not included. The estimates in Table 1 are based on data from CDC’s Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an ongoing, state-based, household telephone survey of the U.S. population aged 18 years or older. Estimates range from 5.8% in Vermont to 11.3% in Mississippi.

For Figure 3, CDC used data from the BRFSS and the U.S. Census Bureau to develop model-based county estimates of adults with diagnosed diabetes. County-level estimates allow community leaders and health care providers to identify local areas that would benefit most from diabetes prevention and control efforts.

**Figure 3. Percentage of U.S. Adults Aged ≥20 Years with Diagnosed Diabetes, by County, 2008**



Data were age adjusted. See Technical Notes for more details.  
Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data and U.S. Census Bureau (Population Estimates Program) data.

Figure 3 shows the distribution of diagnosed diabetes across the United States, with percentages generally higher in the Southeast. CDC used these data to define a geographic area, called the *diabetes belt*, where the prevalence of diagnosed diabetes is especially high. This area includes 644 counties in 15 states.<sup>9</sup>

**Table 1. Percentage of U.S. Adults with Diagnosed Diabetes, by State, 2010**

State	Percentage (%)
Alabama	11.1
Alaska	6.3
Arizona	8.1
Arkansas	9.2
California	8.9
Colorado	6.0
Connecticut	6.4
Delaware	7.7
District of Columbia	8.0
Florida	8.7
Georgia	9.8
Hawaii	7.8
Idaho	7.7
Illinois	8.2
Indiana	9.1
Iowa	6.9
Kansas	8.0
Kentucky	10.1
Louisiana	10.3
Maine	7.4
Maryland	8.9
Massachusetts	7.2
Michigan	9.2
Minnesota	6.2
Mississippi	11.3
Missouri	8.0
Montana	6.2
Nebraska	7.1
Nevada	8.1
New Hampshire	7.0
New Jersey	8.3
New Mexico	8.1
New York	8.4
North Carolina	9.3
North Dakota	6.9
Ohio	9.4
Oklahoma	10.1
Oregon	7.2
Pennsylvania	8.7
Rhode Island	6.8
South Carolina	9.9
South Dakota	6.4
Tennessee	10.2
Texas	9.8
Utah	7.1
Vermont	5.8
Virginia	8.1
Washington	7.4
West Virginia	10.7
Wisconsin	7.1
Wyoming	6.6

Data were age adjusted. See Technical Notes for more details.  
Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data.

## Prediabetes: A Risk Factor for Type 2 Diabetes

People with prediabetes have blood glucose levels that are higher than normal, but not high enough to be diagnosed as diabetes. Unfortunately, prediabetes can put people at increased risk of developing type 2 diabetes, heart disease, and stroke.

Although about 33% of U.S. adults have prediabetes,<sup>10,11</sup> awareness of this risk condition is low. Less than 10% of U.S. adults with prediabetes report that they have ever been told that they have prediabetes.<sup>11</sup>

Table 2 presents estimates of the percentage of U.S. adults who reported ever being told by a doctor that they have prediabetes. Data for adults with prediabetes who have never been tested for diabetes or who have not been told that they are at risk of developing type 2 diabetes are not included. State estimates of prediabetes awareness range from 4.4% in Vermont to 10.2% in Tennessee. These estimates are consistent with analyses of national data that suggest awareness of prediabetes is low.

Progression to type 2 diabetes among those with prediabetes is not inevitable. Studies have shown that people with prediabetes can prevent or delay the onset of type 2 diabetes by losing 5%–7% of their body weight and getting at least 150 minutes per week of moderate physical activity.<sup>12</sup>

Because awareness of prediabetes is low, we anticipate that the percentage of people who are aware that they have prediabetes will rise as diabetes prevention efforts progress.

**Table 2. Percentages of U.S. Adults Who Have Ever Been Told They Have Prediabetes, by State, 2010**

State	Percentage (%)
Alabama	7.0
Alaska	7.0
Arizona	6.2
Arkansas	NA
California	8.0
Colorado	5.7
Connecticut	5.3
Delaware	6.1
District of Columbia	5.5
Florida	6.4
Georgia	5.7
Hawaii	7.5
Idaho	7.3
Illinois	5.5
Indiana	6.2
Iowa	5.4
Kansas	6.1
Kentucky	7.2
Louisiana	6.1
Maine	6.5
Maryland	NA
Massachusetts	4.8
Michigan	6.3
Minnesota	6.6
Mississippi	6.7
Missouri	NA
Montana	4.7
Nebraska	5.4
Nevada	NA
New Hampshire	6.8
New Jersey	NA
New Mexico	5.7
New York	5.5
North Carolina	6.1
North Dakota	NA
Ohio	5.3
Oklahoma	6.5
Oregon	6.1
Pennsylvania	5.9
Rhode Island	NA
South Carolina	6.6
South Dakota	5.2
Tennessee	10.2
Texas	6.4
Utah	5.1
Vermont	4.4
Virginia	5.7
Washington	NA
West Virginia	6.1
Wisconsin	6.2
Wyoming	4.8

NA = not available.

Data were age adjusted. See Technical Notes for more details.

Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data.

## Preventive Care Practices and Quality of Care

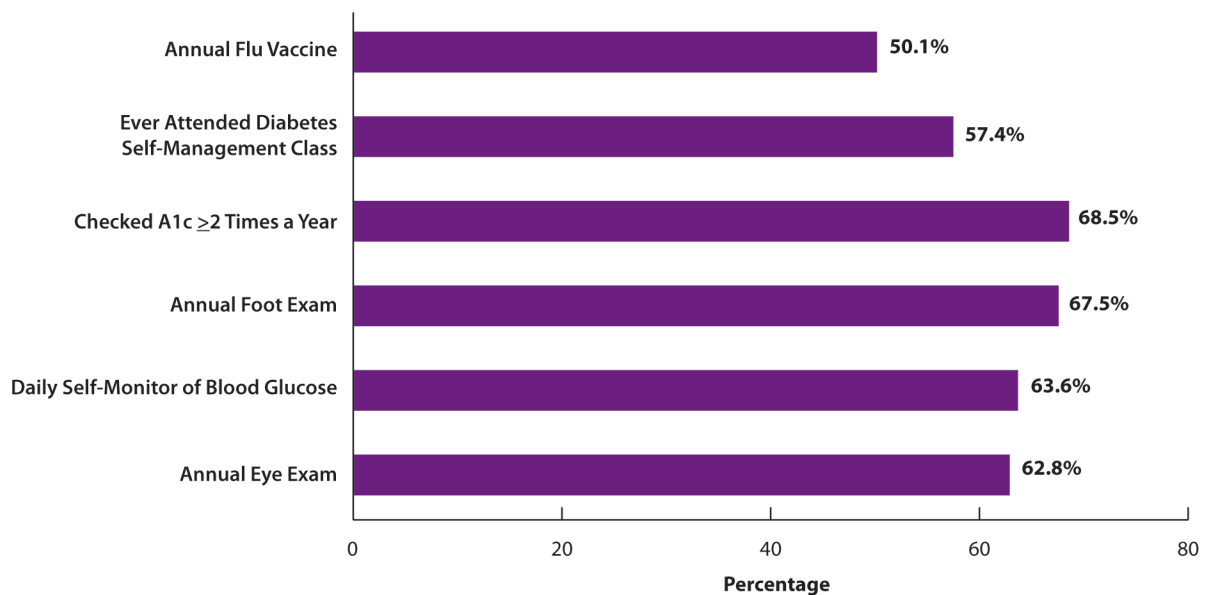
Diabetes complications are debilitating, costly, and sometimes deadly. Diabetes complications tend to be more common or more severe among people whose diabetes is poorly controlled. Diabetes control, achieved through diabetes care and management and clinical preventive care practices, keeps people with diabetes healthy and can improve health outcomes.

Preventive care practices are essential to diabetes care. Figure 4 shows the percentage of U.S. adults with diagnosed diabetes who received some of the preventive care practices recommended for them during the survey

period of 2009–2010. Examples include annual eye exams, annual foot exams, and daily monitoring of blood glucose. Several of the national health objectives in *Healthy People 2020* call for increasing the percentage of people with diabetes who are practicing these recommendations.

Table 3 (see next page) presents state-level percentages of U.S. adults with diabetes who report receiving the recommended preventive care practices. State-specific trend data for these services are available at [www.cdc.gov/diabetes/statistics/state](http://www.cdc.gov/diabetes/statistics/state).

**Figure 4. Percentage of U.S. Adults Aged  $\geq 18$  Years with Diabetes Who Report Receiving Preventive Care Practices, 2009–2010**



Data were age adjusted. See Technical Notes for more details.  
Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data.

**Table 3. Percentage of U.S. Adults Aged  $\geq 18$  Years with Diabetes Who Report Receiving Preventive Care Practices, by State, 2009–2010<sup>a</sup>**

State	Annual Foot Exam	Annual Eye Exam	A1c Checked $\geq 2$ Times a Year	Daily Self-Monitor of Blood Glucose	Ever Attended Diabetes Self-Management Class	Annual Flu Vaccine
Alabama	71.5	66.2	72.3	68.5	58.1	52.0
Alaska	71.3	58.3	72.0	65.9	59.1	62.0
Arizona	68.2	67.2	66.5	60.4	52.9	50.2
Arkansas	NA <sup>b</sup>	NA	NA	NA	NA	57.8
California	64.9	65.4	75.8	58.6	59.5	51.8
Colorado	73.1 <sup>c</sup>	60.4 <sup>c</sup>	69.0 <sup>c</sup>	62.2 <sup>c</sup>	68.9 <sup>c</sup>	61.5
Connecticut	72.7	69.4	74.6	58.1	51.3	58.6
Delaware	75.1	71.3	66.9	61.4	50.5	57.2
District of Columbia	81.9	74.9	77.3	68.8	65.0	54.4
Florida	71.1	68.5	71.8	60.1	56.8	47.1
Georgia	70.7	67.4	74.4	68.9	59.7	50.0
Hawaii	74.0	68.2	75.0	58.0	52.5	69.3
Idaho	69.3 <sup>d</sup>	61.9 <sup>d</sup>	60.9 <sup>d</sup>	59.3 <sup>d</sup>	57.2 <sup>d</sup>	58.1
Illinois	72.8	61.3	70.9	62.7	60.2	49.7
Indiana	72.9	62.6	68.5	66.3	61.7	55.2
Iowa	78.0	76.5	78.9	63.9	64.3	63.2
Kansas	69.0	68.5	70.8	62.2	59.8	55.6
Kentucky	67.5	60.2	73.7	68.8	51.7	54.8
Louisiana	72.1	67.0	71.3	66.6	56.0	52.8
Maine	85.8	73.1	78.8	58.5	62.6	66.5
Maryland	75.8	68.1	75.2	61.9	51.2	57.5
Massachusetts	77.8	75.7	74.6	62.0	50.3	66.4
Michigan	70.7	68.1	70.5	59.0	53.0	55.4
Minnesota	80.9	72.6	73.7	60.8	77.1	71.4
Mississippi	67.7 <sup>d</sup>	60.1 <sup>d</sup>	72.3 <sup>d</sup>	71.9 <sup>d</sup>	46.0 <sup>d</sup>	50.8
Missouri	74.2 <sup>c</sup>	64.6 <sup>c</sup>	74.5 <sup>c</sup>	60.3 <sup>c</sup>	58.2 <sup>c</sup>	61.8
Montana	73.5	60.6	68.3	57.0	63.2	61.0
Nebraska	74.5	65.1	74.3	65.0	62.7	64.0
Nevada	60.3	63.9	63.0	58.3	55.6	48.6
New Hampshire	80.5	72.0	76.7	61.3	63.3	65.4
New Jersey	67.5	69.7	71.5	59.7	43.7	52.0
New Mexico	74.8	65.7	73.3	68.4	60.1	63.7
New York	75.9	67.0	71.4	66.9	40.9	57.6
North Carolina	75.9	67.2	73.0	63.3	56.1	58.4
North Dakota	78.1	65.6	67.2	60.5	58.8	63.1
Ohio	70.5	65.2	68.0	62.7	56.0	51.9
Oklahoma	69.5 <sup>d</sup>	56.2 <sup>d</sup>	70.2 <sup>d</sup>	60.6 <sup>d</sup>	60.7 <sup>d</sup>	59.2
Oregon	72.5	61.4	68.4	64.5	67.8	54.2
Pennsylvania	73.4	67.2	78.1	63.2	57.3	62.0
Rhode Island	76.8 <sup>c</sup>	76.1 <sup>c</sup>	72.9 <sup>c</sup>	58.7 <sup>c</sup>	47.3 <sup>c</sup>	62.5
South Carolina	73.0	62.8	73.6	65.3	57.1	50.9
South Dakota	74.9 <sup>d</sup>	66.5 <sup>d</sup>	73.8 <sup>d</sup>	55.0 <sup>d</sup>	62.3 <sup>d</sup>	67.1
Tennessee	70.9	68.6	72.6	73.2	52.1	55.8
Texas	68.0	61.5	67.5	62.4	59.8	54.2
Utah	71.3	62.2	68.7	61.6	62.0	62.4
Vermont	81.6	67.2	79.3	60.0	55.2	68.4
Virginia	74.4	70.9	72.4	60.1	60.9	58.4
Washington	74.2 <sup>c</sup>	66.3 <sup>c</sup>	72.1 <sup>c</sup>	63.6 <sup>c</sup>	65.5 <sup>c</sup>	59.8
West Virginia	67.5	66.9	69.7	67.9	44.6	59.1
Wisconsin	77.4	72.4	73.5	60.1	59.4	62.4
Wyoming	64.7	59.4	66.0	59.3	57.7	54.5

<sup>a</sup> Data were age-adjusted. See Technical Notes for more details.

<sup>b</sup> Data not available for 2009 or 2010.

<sup>c</sup> Only 2009 estimates available.

<sup>d</sup> Only 2010 estimates available.

Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data.

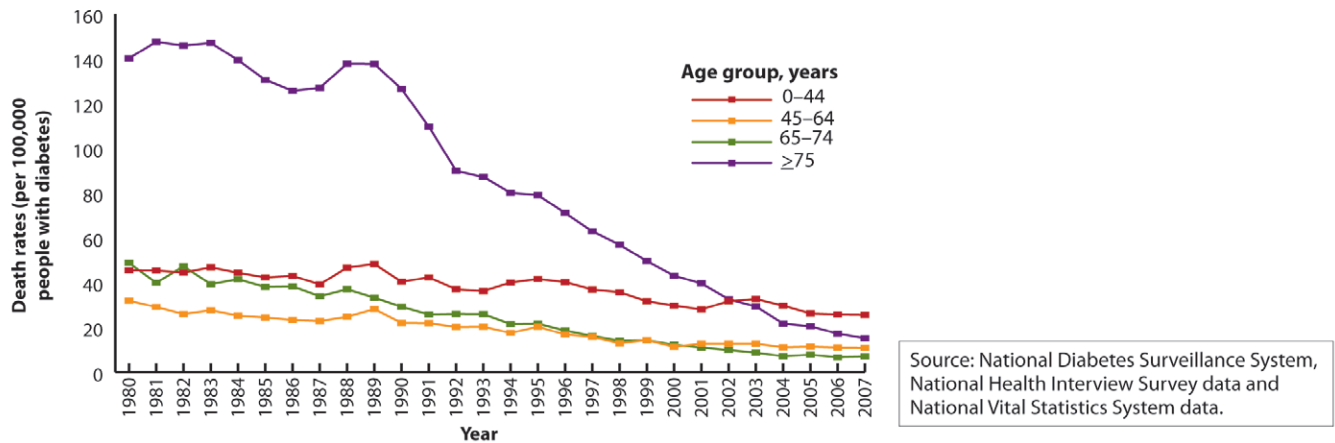


## Trends in Diabetes Outcomes

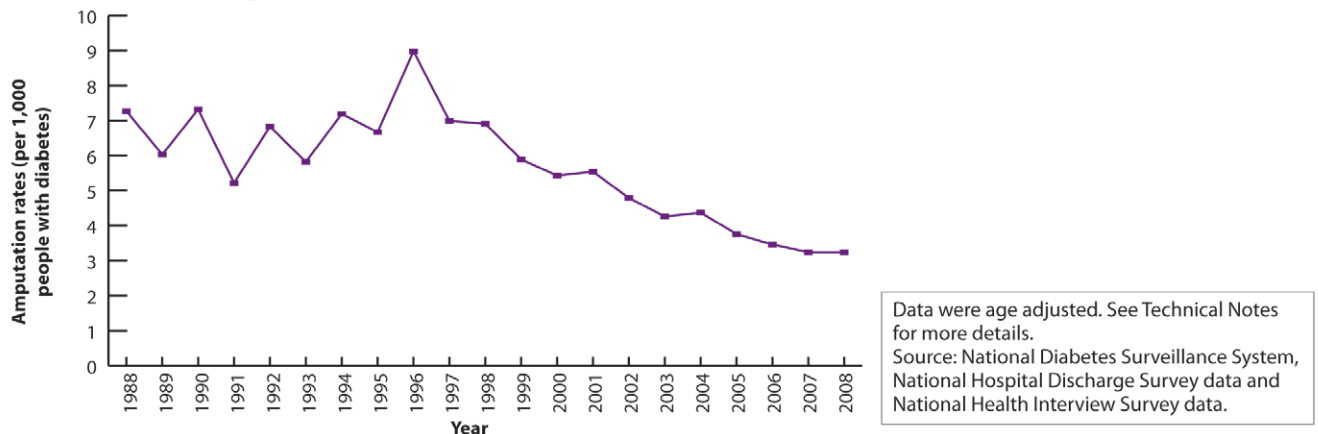
Figures 5, 6, and 7 offer examples of trends in diabetes complications in the United States over the past 2 decades. Among adults with diagnosed diabetes, death rates from hyperglycemic crisis have declined since the mid-1980s. Diabetic hyperglycemic crises are serious health events that can occur in people with diabetes, and they can lead to death. Rates of lower-limb amputation (of legs or feet) and kidney failure (end-stage renal disease) have declined

since the mid-1990s. These declines may be attributed in part to improvements in the rates of high blood pressure, high cholesterol, and smoking in recent decades.<sup>10</sup> Other possible reasons include improvements in blood glucose control;<sup>13</sup> early detection and management of diabetes complications; and improvements in preventive care, treatment, and diabetes care management.<sup>14, 15</sup>

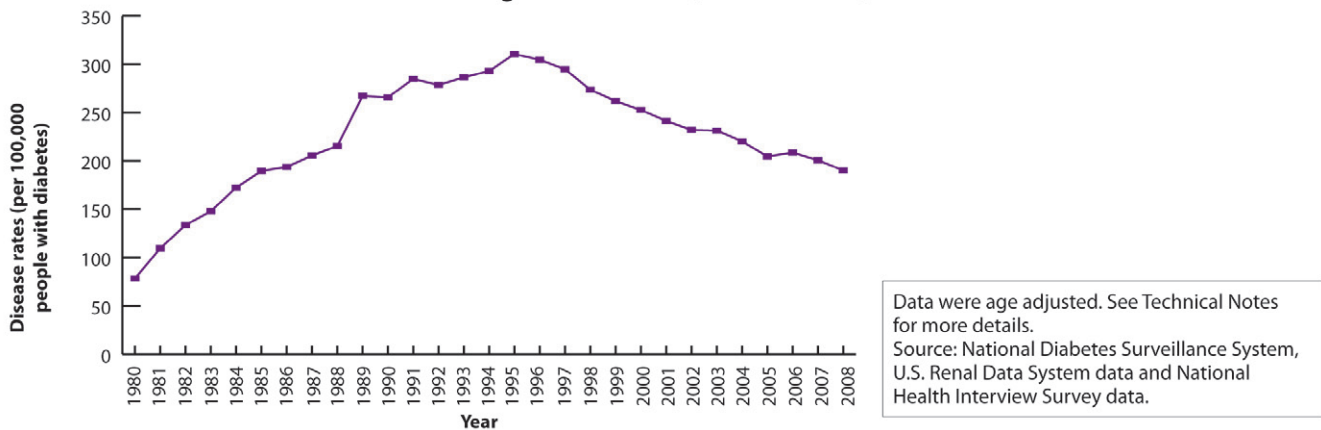
**Figure 5. Death Rates for Hyperglycemic Crises as Underlying Cause, by Age, United States, 1980–2007**



**Figure 6. Hospital Discharge Rates for Nontraumatic Lower-Limb Amputation, United States, 1988–2008**



**Figure 7. Incidence of Diabetes-Related End-Stage Renal Disease, United States, 1980–2008**



## CDC and HHS Respond to Diabetes

As the leading public health agency for HHS, CDC has a unique role in preventing, controlling, and managing diabetes. CDC provides public health leadership to translate evidence-based science on what works into practice to improve health outcomes for people with diabetes and those at risk of developing type 2 diabetes. The agency also analyzes data to measure the burden of diabetes, conducts and funds research, works to reduce health disparities, and creates a variety of educational resources.

In its scientific and programmatic activities, CDC works to reduce differences in health status and health care that are based on race, ethnicity, economic status, or other factors. The agency provides information on health disparities to raise awareness about how diabetes care can reduce health gaps. CDC partners with national, tribal, territorial, state, and local organizations to support programs to prevent and control diabetes.

In addition to CDC's efforts, HHS works through all of its relevant agencies and programs to fight the diabetes epidemic by using a broad range of research, education, and programs that strengthen the prevention, detection, and treatment of diabetes. Efforts to address diabetes across HHS will improve care for people living with diabetes today and help prevent the onset of diabetes in more Americans in the future.

## Supporting Diabetes Prevention and Control

### Empowering Patients with Tools and Resources

- **Affordable Care Act and Diabetes Benefits:** The health care law expands insurance coverage, consumer protections, and access to primary care. For example, important preventive services are now covered with no cost sharing in most private plans if the service is graded A (strongly recommended) or B (recommended) by the U.S. Preventive Services Task Force (USPSTF). These services include type 2 diabetes screening, diet counseling, and blood pressure screening. In addition, immunizations recommended by the Advisory Committee on Immunization Practices and other recommended preventive services that are specifically for children, youth, and women will also be covered with no cost sharing by many private health plans.

Beginning in 2013, state Medicaid programs that eliminate cost sharing for these clinical preventive services may receive enhanced federal matching funds. Medicare now covers certain preventive services recommended by the USPSTF with no cost sharing, as well as an annual wellness visit

that includes a personalized prevention plan at no additional cost to beneficiaries.

- **Medicare and Diabetes Preventive Benefits:** Medicare covers diabetes screening tests to identify beneficiaries with diabetes or at high risk of developing diabetes. Medicare also covers screening for glaucoma, which may be a comorbidity of diabetes. Other Medicare preventive benefits (e.g., diabetes self-management training, medical nutrition therapy) support beneficiaries in self-care and in making lifestyle changes to prevent or minimize development of the comorbidities and complications of diabetes. These benefits are available both to people with traditional Medicare and those enrolled in Medicare Advantage plans. In addition, Medicare prescription drug plans (Part D) cover insulin and other medications that may be needed for diabetes self-management.
- **Medicare Diabetes Special Needs Plans:** Within Medicare Advantage, 36 Special Needs Plans (SNPs) focused on chronic care, known as chronic condition SNPs (C-SNPs), are being offered in 2012 specifically for Medicare beneficiaries with diabetes. These C-SNPs may offer extra benefits, and they use a model of care approved by the Centers for Medicare & Medicaid Services (CMS) that is designed to support and improve the health status of beneficiaries with diabetes. In addition, regular Medicare Advantage plans may offer supplemental benefits that go beyond those covered by traditional Medicare. These benefits may include the following:
  - Health education for all beneficiaries as a way to prevent diabetes.
  - Extra self-care skills training for those with diabetes.
  - Focused disease management programs that provide care coordination and in-home monitoring to prevent development of comorbidities and complications of diabetes.
- **Medicare's Everyone with Diabetes Counts Program:** The CMS developed the Everyone with Diabetes Counts program to help Medicare beneficiaries with diabetes who are members of vulnerable populations actively participate in their care. Beneficiaries complete diabetes self-management education classes that focus on basic anatomy, healthy lifestyles, healthy nutrition choices, and the importance of eye exams, foot exams, and regular laboratory tests such as hemoglobin A1c and lipid panels. Classes are taught in community locations. To date, more than 20,000 Medicare beneficiaries have completed classes through this program.

- **Lower Extremity Amputation Prevention Program (LEAP):** This program is designed to reduce lower-extremity amputations in people with diabetes, Hansen’s disease, or other conditions that result in loss of protective sensation in the feet. LEAP is a five-step program that includes annual foot screenings, patient education, daily self-inspection, footwear selection, and management of simple foot problems.
- **Chronic Disease Self-Management Program:** The U.S. Administration for Community Living, in collaboration with CDC and CMS, directs this program, which enables older Americans with chronic diseases, such as diabetes, to learn how to manage their conditions and take control of their health. State units on aging and state health departments work with their state Medicaid agency and local partners to increase availability and access to these self-management tools and programs, especially among low-income, minority, and other underserved populations. Local partners include senior centers, meal programs, faith-based organizations, libraries, YMCAs, YWCAs, and senior housing programs.
- **Healthfinder.gov:** This award-winning prevention Web site includes tools to help people take steps to prevent diabetes. Information is based on USPSTF recommendations, HHS’s *Dietary Guidelines for Americans, 2010* and *2008 Physical Activity Guidelines for Americans*, and other preventive initiatives.

Montana, Nevada, New York, and Texas) are focused on diabetes management or prevention. The target population is Medicaid beneficiaries aged 18 years or older with diabetes. Prevention programs and incentives focus on demonstrating changes in health risk and outcomes, including the adoption of healthy behaviors.

- **CDC’s State-Based Diabetes Prevention and Control Programs:** In all 50 states, the District of Columbia, 6 Pacific territories/former territories, Puerto Rico, and the U.S. Virgin Islands, CDC funding and technical assistance for diabetes programs support activities to
  - Improve health outcomes for people living with diabetes by preventing health complications among those most at risk.
  - Adopt diabetes care guidelines in health care settings.
  - Help state Medicaid programs monitor quality care outcomes among people with diabetes.
  - Educate health care providers, public health professionals, and the public about optimal diabetes care and self-management.
  - Involve communities in diabetes prevention and control activities.

## Investing in Opportunities to Combat Diabetes

- **Innovation Awards:** The Health Care Innovation Awards announced by the CMS Innovation Center include multiple projects that specifically target diabetes. Examples include projects designed to improve the care and oral health of American Indians with diabetes on South Dakota reservations; reduce death and disability from type 2 diabetes among underserved and at-risk populations in the southeast portion of North Carolina; and use community health workers to help prevent the progression of diabetes in underserved populations in New Mexico, Pennsylvania, and the District of Columbia.

Other projects include implementing and testing a care coordination and health information technology plan to improve the health of Medicaid-eligible patients with type 1 and type 2 diabetes in Hawaii and using collaborative partnerships to address diabetes in a multicultural, high-risk, high-cost population in San Mateo County, California.

- **Medicaid Incentives for the Prevention of Chronic Diseases:** Seven of the ten states that have received Medicaid Incentives for the Prevention of Chronic Diseases grants (California, Hawaii, Minnesota,

## Creating Partnerships to Combat Diabetes

- **National Diabetes Prevention Program:** The Affordable Care Act established CDC’s National Diabetes Prevention Program (National DPP), a public-private partnership of community organizations, private insurers, employers, health care organizations, and government agencies working together to combat diabetes. Through this program, people who are at risk of developing type 2 diabetes work with a lifestyle coach in a group setting during the year-long program. The group classes are offered through community-based organizations, wellness centers, and faith-based organizations.

The inaugural partners of the National DPP were the YMCA and UnitedHealth Group. The National DPP’s goal is to reach 15 million people with prediabetes by 2020 to prevent them from developing type 2 diabetes or to diagnose them in early stages to avoid long-term health complications.

- **National Prevention Strategy:** The U.S. Surgeon General led an effort by 17 federal departments to develop the first-ever U.S. National Prevention and Health Promotion Strategy, as directed by the Affordable Care Act. The goal is to increase the number of Americans who are healthy at every stage of life by identifying evidenced-based recommendations

to prevent chronic diseases such as diabetes. The National Prevention, Health Promotion and Public Health Council, its Advisory Group, and private and public partners are working together to implement the strategy at national, state, tribal, and local levels and to recognize the importance of engaging all sectors of society in improving the health and well-being of communities. Key indicators for successful implementation are drawn from *Healthy People 2020* objectives and targets.

## Engaging Communities to Address Diabetes and Reduce Health Disparities

- **HHS Office of Minority Health/American Diabetes Association Partnership:** The Office of Minority Health and the American Diabetes Association are collaborating to reduce amputations due to diabetes in minority populations. The aim of this partnership is to increase awareness about proper foot care and help patients of color, who experience higher rates of lower-extremity amputations, access the care they need to prevent amputations.
- **Community Transformation Grant Program:** Created by the Affordable Care Act and funded by the Prevention and Public Health Fund, the Community Transformation Grant program supports state and community efforts to address chronic health conditions, including diabetes, and to reduce chronic disease risk factors. These grants address a range of chronic diseases (including diabetes) and risk factors (such as obesity) and are designed to improve health, reduce health disparities, and control health care spending.
- **National Institutes of Health's (NIH's) *We Can!* Initiative:** This national initiative is designed to give parents, caregivers, and entire communities a way to help children aged 8–13 years maintain a healthy weight. It provides parents and caregivers with tools, activities, and more to help them encourage healthy eating and increased physical activity. The *We Can!* Initiative also offers organizations, community groups, and health professionals a centralized resource to promote a healthy weight in youth through community outreach, partnership development, and media activities that can be adapted to meet the needs of diverse populations.
- **Indian Health Service (IHS) Special Diabetes Program for Indians:** The Special Diabetes Program for Indians (SDPI) is a \$150 million annual program that provides grants for diabetes prevention and treatment services to 400 IHS, tribal, and urban health programs for Native Americans. The SDPI has three major components: community-directed grants for diabetes

prevention and treatment, Diabetes Prevention and Healthy Heart Initiative grants, and data infrastructure improvement for the IHS.

- **Partnerships Active in Communities to Achieve Health Equity Program:** This Office of Minority Health program seeks to improve health outcomes among racial and ethnic minorities through community-based networks that adopt evidence-based disease management and preventive health activities and increase access to and use of preventive health care, medical treatment, and supportive services. Several grantees are working to improve the prevention, detection, and management of diabetes.

## Conducting Diabetes Research

### Investing in Research to Better Understand Diabetes

- **NIH Diabetes Research:** NIH is the primary source of federal support for diabetes research. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) is the lead NIH component for supporting diabetes research. Diabetes research funded by NIH is supported by regularly appropriated funds that HHS receives through the Subcommittee on Labor-HHS-Education Appropriations. It is also supported by the Special Statutory Funding Program for Type 1 Diabetes Research, which is a special appropriation to the Secretary of HHS to pursue research on type 1 diabetes and its complications. Total NIH funding for diabetes research is approximately \$1 billion.
- **CDC Diabetes Prevention and Control Research:** CDC studies trends in diabetes, related health outcomes, and new developments in treatment and prevention. CDC's research also plays an important role in determining which programs are most effective in preventing and controlling diabetes and which are cost effective or can even save money. Research findings are used by CDC, state, territorial, local, and tribal public health programs and a variety of health care system partners to prioritize diabetes prevention and control interventions.

CDC's research in this area includes the SEARCH for Diabetes in Youth Study (SEARCH) and the Natural Experiments for Translation in Diabetes (NEXT-D) Study. SEARCH is a national, multicenter study that is the most complete examination of diabetes, both type 1 and type 2, in children and young adults ever conducted in the United States.<sup>16</sup> The NEXT-D Study is a national, multicenter study that uses an observational approach to examine which policy changes initiated by health care systems, business and community organizations, and legislatures are improving the health of people

with diabetes. The research approach is unique, and the results will help researchers identify which health policy initiatives and actions are working.<sup>17</sup>

- **NIH's Diabetes Prevention Program (DPP):** The results of this clinical research study, which were published in 2002, contributed to a better understanding of how type 2 diabetes develops in people at risk and how they can prevent or delay the development of diabetes by making behavioral changes that lead to weight loss. The positive effects of the DPP continue as new research—building on the study's results—seeks the most effective ways to prevent, delay, or even reverse diabetes. This research provided evidence for programs being implemented through CDC's National Diabetes Prevention Program.

## Providing Management and Support

### Educating the Nation About Diabetes

- **National Diabetes Information Clearinghouse (NDIC):** The NDIC is a service of NIDDK. Established in 1978, the NDIC provides information about diabetes to people with diabetes, their families, health care professionals, and the public. It answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and government agencies to coordinate resources on diabetes.
- **National Diabetes Education Program (NDEP):** The NDEP is jointly sponsored by CDC and NIH. It develops and provides educational tool kits and multimedia resources for a variety of audiences, including health care professionals and diabetes educators. It has more than 200 federal, state, and local partners that work together to improve the treatment and outcomes for people with diabetes, promote early diagnosis, and prevent or delay the onset of type 2 diabetes. Program audiences include those with and at risk of diabetes, health care professionals, and employers.

## Measuring the Public Health Impact

### Tracking Progress

- **Healthy People 2020:** This national health agenda is tracking progress toward meeting several diabetes-related objectives during this decade. The overall goal is to reduce the disease and economic burden of diabetes and improve the quality of life for all people who have or are at risk of diabetes.

### Mapping the Country

- **National Diabetes Surveillance System:** Through this system, CDC analyzes national trends and provides state and county data. Public health professionals and communities can use these data to focus their diabetes prevention and control efforts on areas of greatest need. CDC connects state and local health departments across the United States by monitoring disease patterns and sharing information that improves state responses to diabetes.

### Reducing Disparities and Tracking Quality

- **National Healthcare Disparities Report and National Healthcare Quality Report:** These reports from the Agency for Healthcare Research and Quality track the health care system through quality measures such as the percentage of U.S. adults receiving care for diabetes. For example, the 2011 *National Healthcare Quality Report* showed that only one of five adults with diabetes in 2008 had received all four recommended services (foot exam, dilated eye exam, flu shot, and two hemoglobin A1c tests) within the calendar year.

## Technical Notes

Diabetes data presented in this report card are from the U.S. Census Bureau and various CDC surveys and data collection systems, including the National Health Interview Survey, the National Hospital Discharge Survey, the Behavioral Risk Factor Surveillance System (BRFSS), and the National Vital Statistics System. CDC staff members used data from these original sources to calculate the estimates presented in this report. Many of these data appear in greater detail on CDC's National Diabetes Surveillance System Web site at [www.cdc.gov/diabetes/statistics](http://www.cdc.gov/diabetes/statistics).

To make meaningful comparisons between states and over time, we used the 2000 U.S. standard population to age adjust our estimated rates. Age adjustment is a statistical process applied to rates of diseases, injuries, and health

outcomes. It allows comparisons between communities with different age structures because it proportions rates to a standard age structure. Three-year moving averages are sometimes used to improve the precision of estimates. State estimates in this report card are based on BRFSS data. Because of the limitations of self-reported data in surveys, these estimates may underreport the rates of diagnosed diabetes and prediabetes in the U.S. population.

For more information about the methods used to produce the estimates in this report, see CDC's National Diabetes Surveillance System Web site at [www.cdc.gov/diabetes/statistics](http://www.cdc.gov/diabetes/statistics).

# CDC Diabetes Web Resources

## Diabetes Public Health Resource

[www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)

Provides information to consumers, health organizations, communities, health professionals, and researchers about CDC programs, training opportunities, videos, publications, research, data, and statistics.

## Data and Statistics

### National Diabetes Fact Sheet, 2011

[www.cdc.gov/diabetes/pubs/factsheet11.htm](http://www.cdc.gov/diabetes/pubs/factsheet11.htm)

Prepared in collaboration with several agencies in the HHS, as well as with other federal agencies, the American Association of Diabetes Educators, the American Diabetes Association, and the Juvenile Diabetes Research Foundation International.

### National Diabetes Surveillance System

[www.cdc.gov/diabetes/statistics](http://www.cdc.gov/diabetes/statistics)

This interactive Web site provides national and state information about diabetes and its complications. Users can choose a variety of customized views.

- **State Surveillance Data**  
[www.cdc.gov/diabetes/statistics/state](http://www.cdc.gov/diabetes/statistics/state)  
Allows users to view profiles of diabetes preventive care practices and other trends by state.
- **Diabetes Data and Trends**  
[www.cdc.gov/diabetes/statistics](http://www.cdc.gov/diabetes/statistics)  
Allows users to view national or state maps of county-level estimates of diagnosed diabetes.

### Populations Especially Affected by Diabetes

[www.cdc.gov/diabetes/consumer/groups.htm](http://www.cdc.gov/diabetes/consumer/groups.htm)

Information on how diabetes affects certain populations, including specific racial and ethnic groups, and information about gestational diabetes.

### Healthy People 2020 Summary of Objectives: Diabetes

[www.healthypeople.gov/2020/topicsobjectives2020/pdfs/Diabetes.pdf](http://www.healthypeople.gov/2020/topicsobjectives2020/pdfs/Diabetes.pdf)

*Healthy People 2020* provides science-based, 10-year national objectives for improving the health of all Americans. This link provides a list of objectives designed to improve the health of people with diabetes.

## CDC Diabetes Programs

### CDC Funding Information and Profiles

[www.cdc.gov/about/business/state\\_funding.htm](http://www.cdc.gov/about/business/state_funding.htm)

Information on CDC funding for state and local health departments, universities, and other public and private agencies for a variety of public health programs, including diabetes programs.

## CDC Community Transformation Grants

[www.cdc.gov/communitytransformation](http://www.cdc.gov/communitytransformation)

The Community Transformation Grants program will support community efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. By promoting healthy lifestyles, especially among population groups with the highest rates of chronic disease, these grants will help improve health, reduce health disparities, and control health care spending.

## National Diabetes Education Program

[www.yourdiabetesinfo.org](http://www.yourdiabetesinfo.org)

The National Diabetes Education Program is a partnership between CDC and the National Institutes of Health. This Web site provides tools and publications in a range of languages for people who have diabetes, those who care for people with diabetes, and those at risk for the disease, as well as for public health practitioners, community health workers, and health care professionals.

## National Diabetes Prevention Program

[www.cdc.gov/diabetes/prevention](http://www.cdc.gov/diabetes/prevention)

A public-private partnership of community organizations, private insurers, employers, health care organizations, and governments working together to build a network that supports the development of evidence-based lifestyle interventions for people with prediabetes.

## Native Diabetes Wellness Program

[www.cdc.gov/diabetes/projects/diabetes-wellness.htm](http://www.cdc.gov/diabetes/projects/diabetes-wellness.htm)

The Native Diabetes Wellness Program helps American Indian and Alaska Native communities develop effective strategies for diabetes care and prevention. The Web site features the *Eagle Books*, a series of children's books for Native American children and others interested in healthy living. The books promote ways to prevent type 2 diabetes, such as by being more physically active and eating healthy foods.

## Chronic Kidney Disease Initiative

[www.cdc.gov/diabetes/projects/kidney/index.htm](http://www.cdc.gov/diabetes/projects/kidney/index.htm)

This Web site provides information on activities and data related to chronic kidney disease from the National Chronic Kidney Disease Surveillance System.

## Vision Health Initiative

[www.cdc.gov/visionhealth](http://www.cdc.gov/visionhealth)

This Web site provides the State Data Tool, which is an interactive map of vision and eye health statistics by state. States that used the Behavioral Risk Factor Surveillance System's vision module can produce reports on vision, eye health, and eye care.

## References

1. Centers for Disease Control and Prevention. *National Diabetes Fact Sheet, 2011*. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2011. [http://www.cdc.gov/diabetes/pubs/pdf/ndfs\\_2011.pdf](http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf). Accessed April 16, 2012.
2. Imperatore G, Cadwell BL, Geiss LS, Saaddine JB, Williams DE, Ford ES. Thirty-year trends in cardiovascular risk factor levels among U.S. adults with diabetes. *Am J Epidemiol*. 2004;160(6):531-539.
3. Hunt KJ, Schuller KL. The increasing prevalence of diabetes in pregnancy. *Obstet Gynecol Clin North Am*. 2007;34:173-199.
4. Dabelea D, Crume T. Maternal environment and the transgenerational cycle of obesity and diabetes. *Diabetes Care*. 2011;60:1849-1855.
5. Kitzmiller JL, Dang-Kilduff L, Taslimi MM. Gestational diabetes after delivery: short-term management and long-term risks. *Diabetes Care*. 2007;30:S225-S235.
6. Lee JWR, Brancati FL, Yeh H-C. Trends in the prevalence of type 2 diabetes in Asians versus whites: results from the United States National Health Interview Survey, 1997–2008. *Diabetes Care*. 2011;34:353-357.
7. Geiss LS, Cowie CC. Type 2 diabetes and persons at high risk of diabetes. In: Narayan KM, Williams D, Gregg EW, Cowie CC, eds. *Diabetes and Public Health: From Data to Policy*. New York, NY: Oxford University Press; 2011:15-32.
8. Boyle JP, Thompson TJ, Gregg EW, Barker LE, Williamson DF. Projection of the year 2050 burden of diabetes in the U.S. adult population: dynamic modeling of incidence, mortality, and prediabetes prevalence. *Popul Health Metr*. 2010;8:29.
9. Barker LE, Kirtland KA, Gregg EW, Geiss LS, Thompson TJ. Geographic distribution of diagnosed diabetes in the U.S.: diabetes belt. *Am J Prev Med*. 2011;40(4):434-439.
10. Cowie CC, Rust KF, Ford ES, et al. Full accounting of diabetes and prediabetes in the U.S. population in 1988–1994 and 2005–2006. *Diabetes Care*. 2011;32(2):287-294.
11. Geiss LS, James C, Gregg EW, Albright A, Williamson DF, Cowie CC. Diabetes risk reduction behaviors among U.S. adults with prediabetes. *Am J Prev Med*. 2010;38(4):403-409.
12. Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. 2002;346(6):393-403.
13. Hoerger TJ, Gregg EW, Segal JE, Saaddine JB. Is glycemic control improving in U.S. adults? *Diabetes Care*. 2008;31(1):81-86.
14. Geiss LS, Engelgau M, Pogach L, et al. A national progress report on diabetes: successes and challenges. *Diabetes Technol Ther*. 2005;7(1):198-203.
15. Saadine JB, Cadwell BL, Gregg EW. Improvements in diabetes processes of care and intermediate outcomes: United States, 1988–2002. *Ann Intern Med*. 2006;144:465-474.
16. Centers for Disease Control and Prevention. SEARCH for Diabetes in Youth. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2011. <http://www.cdc.gov/diabetes/pubs/factsheets/search.htm>. Accessed April 16, 2012.
17. Centers for Disease Control and Prevention. Natural Experiments for Translation in Diabetes (NEXT-D) Study. Diabetes Public Health Resource Web site. <http://www.cdc.gov/diabetes/projects/next-d.htm>. Accessed April 16, 2012.