Diabetes 2014 Report Card

Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion

CS244299

For More Information

Division of Diabetes Translation
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
4770 Buford Hwy, Mailstop F-75
Atlanta, GA 30341-3717

1-800-CDC-INFO (232-4636); TTY: 1-888-232-6348
Contact CDC-INFO

This publication is available at
www.cdc.gov/diabetes/library/reports/congress.html

Suggested Citation

Centers for Disease Control and Prevention. *Diabetes Report Card 2014*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2015.

Web site addresses of nonfederal organizations are provided solely as a service to readers. Provision of an address does not constitute an endorsement of this organization by CDC or the federal government, and none should be inferred. CDC is not responsible for the content of other organizations' Web pages.

Background

The *Diabetes Report Card* is published by the Centers for Disease Control and Prevention (CDC) every 2 years to provide current information on the status of diabetes in the United States. It includes the most recent information and data available about diabetes, gestational diabetes, prediabetes, preventive care practices, risk factors, quality of care, diabetes outcomes, and, to the extent possible, national and state trends. Public health professionals, state health departments, and communities can use these data to focus their diabetes prevention and control efforts on areas of greatest need.

CDC plays a unique role in preventing, controlling, and managing diabetes in the United States. We support improvements in health outcomes for people with prediabetes and diagnosed diabetes through a variety of public health programs that are designed to prevent diabetes and control its complications.

CDC is working to reverse the diabetes epidemic in the United States by

- Monitoring and tracking disease trends.
- Identifying, implementing, and evaluating effective interventions.
- Improving medical care for people with diabetes.
- Reducing the number of annual diabetes deaths.

Each year, more than 200,000 deaths occur among people with diabetes in the United States. In 2013, diabetes was the country's seventh leading cause of death. More than 29 million people—or 9.3% of the US population—are estimated to have diagnosed or undiagnosed diabetes.

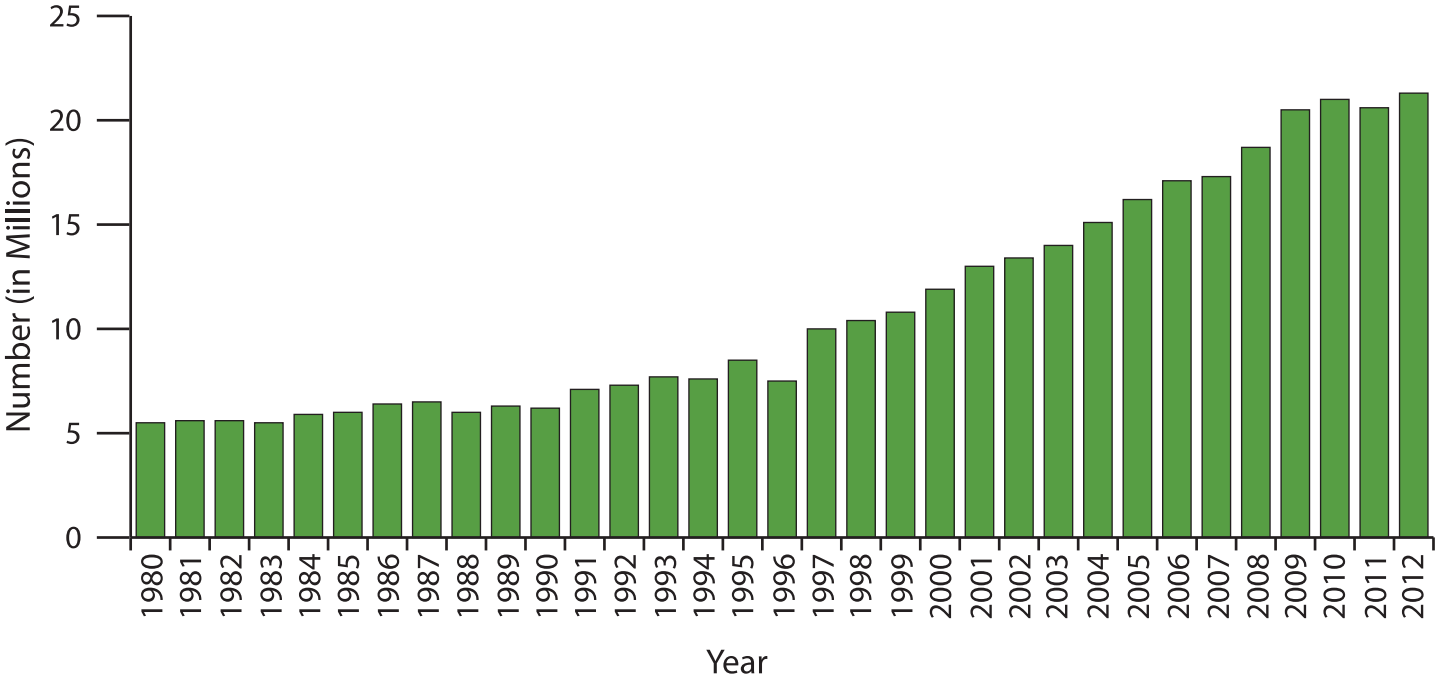
In addition to those who already have diabetes, CDC estimates that 86 million US adults, more than 1 of 3, have prediabetes, which can increase the risk of developing type 2 diabetes, heart disease, and stroke.

The increase in the number of people with diabetes in the United States is due in part to people with the disease living longer because of improvements in self-management practices and health care services.

National and State Diabetes Trends

Over the past 32 years, from 1980 through 2012, the number of adults with diagnosed diabetes in the United States nearly quadrupled, from 5.5 million to 21.3 million (Figure 1). Among adults, about 1.7 million new cases of diabetes are diagnosed each year. If this trend continues, as many as 1 out of every 3 adults in the United States could have diabetes by 2050.

Figure 1. Number of US Adults Aged 18 or Older with Diagnosed Diabetes, 1980-2012



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

A recent CDC study suggests that, after decades of continued growth in the prevalence and incidence of diagnosed diabetes, the diabetes epidemic may be beginning to slow. Although the numbers are not growing dramatically each year, they are still alarmingly high.

In addition, although overall rates of diagnosed diabetes seem to be slowing, they are continuing to increase among some groups—such as non-Hispanic blacks, Hispanics, and people with less than a high school education.

Diabetes Cost the United States an Estimated $245 Billion in 2012

- $176 billion in direct medical costs (medical goods and services)
- $69 billion in indirect costs from lost workdays, restricted activity, disability, and early death

Who's at Risk?

About 8.1 million people with diabetes do not know they have the disease. Because prediabetes and type 2 diabetes have few physical symptoms, some people may not realize how serious the disease is. People can help lower their chances of getting diabetes by knowing its risk factors—such as increased age, lack of physical activity, a family history of diabetes, certain socioeconomic conditions, obesity, and race and ethnicity.

Obesity

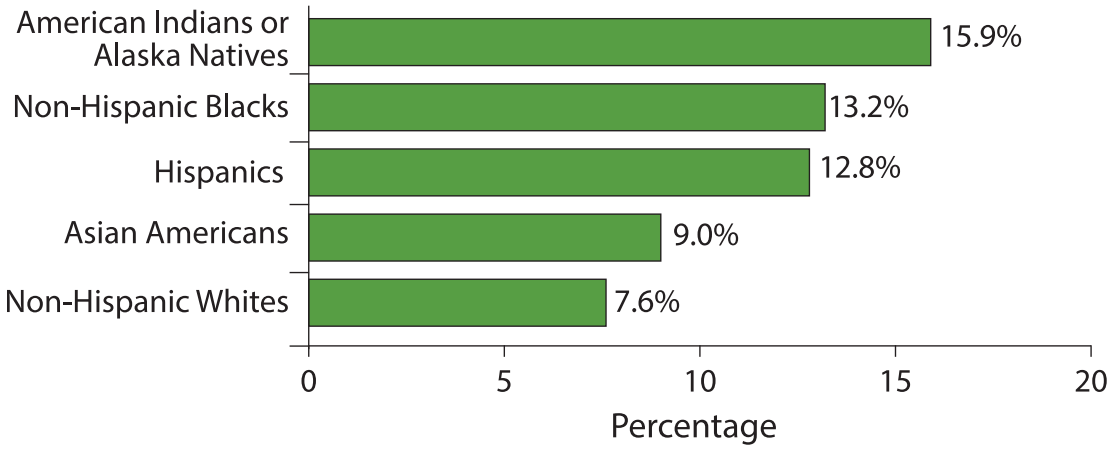
Obesity is one of several risk factors linked to type 2 diabetes. An unhealthy diet, lack of physical activity, and socioeconomic factors contribute to both obesity and type 2 diabetes. Obesity in people with type 2 diabetes is also associated with poor control of blood sugar, blood pressure, and cholesterol levels. Many of the health complications of diabetes become more severe when they are compounded by overweight or obesity.

The diabetes and obesity epidemics, combined with longer life spans, have increased the lifetime risk of developing diabetes to about 40% for US adults. The risk is the same for both men and women.

Race and Ethnicity

Compared with non-Hispanic whites, members of racial and ethnic minority groups are more likely to have diagnosed diabetes (Figure 2). During their lifetime, half of all Hispanic men and women and non-Hispanic black women are predicted to develop the disease.

Figure 2. Percentage of US Adults Aged 20 or Older with Diagnosed Diabetes, by Racial and Ethnic Group, 2010-2012

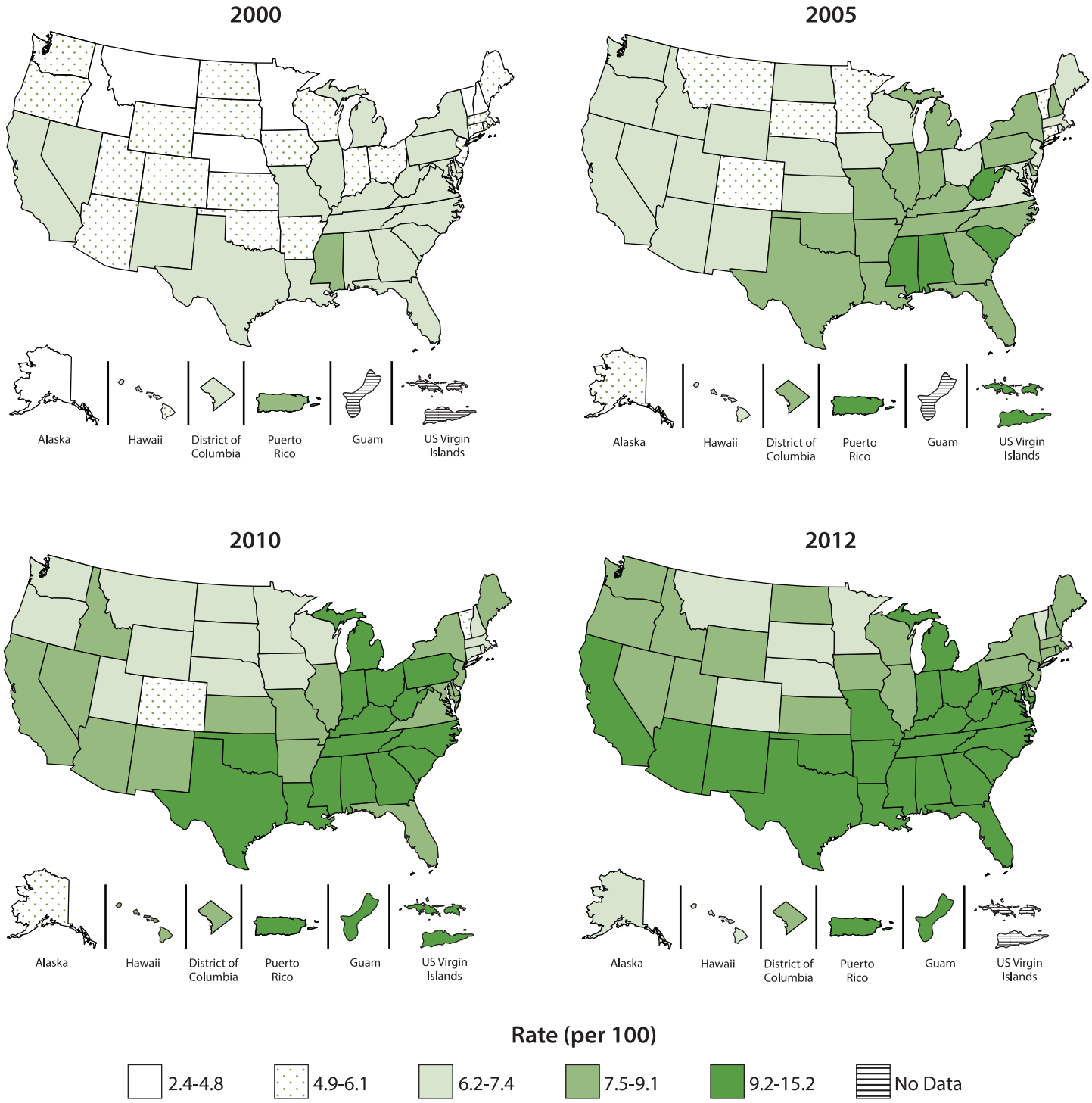


Note: Percentages are age-adjusted to the 2000 US standard population.
Source: National Health Interview Survey, 2010-2012, and the Indian Health Service's National Patient Information Reporting System, 2012.

Diagnosed Diabetes

During 2000-2012, the percentage of US adults with diagnosed diabetes grew across all states and US territories and was particularly high in Southern and Appalachian states (Figure 3). More information about state and county estimates of diabetes in the United States is available online at CDC's Diabetes Data and Statistics website.

Figure 3. Geographic Distribution of Diagnosed Diabetes in the United States, 2000-2012



Note: Rates are age-adjusted to the 2000 US standard population.
Source: National Diabetes Surveillance System.

Diabetes Overview

Diabetes is a group of diseases characterized by high blood sugar. When a person has diabetes, the body either does not make enough insulin or is unable to use its own insulin well. If blood sugar builds up in the body and its levels are not controlled, it can lead to serious health complications, such as heart disease, stroke, kidney disease, blindness, amputations of the legs and feet, and early death. CDC programs and other scientific activities support improvements in health outcomes for people with type 1 diabetes, type 2 diabetes, gestational diabetes, and prediabetes.

Type 1 Diabetes

This form of diabetes develops when the cells in the pancreas that produce insulin, known as beta cells, are destroyed. The destruction of the beta cells limits the making and release of insulin, a hormone that helps lower blood sugar. This disease can occur at any age, but the peak ages for diagnosis are in the middle teen years.

There is no known way to prevent type 1 diabetes. To survive, people with type 1 diabetes must have insulin delivered by injection or pump. Type 1 diabetes accounts for about 5% of all diagnosed cases of diabetes in US adults.

Type 2 Diabetes

This form of diabetes is the most common, accounting for about 90%-95% of diagnosed diabetes in US adults. It usually begins as insulin resistance, a disorder in which cells, primarily within the muscles, liver, and fat tissue, do not use insulin properly. The risk of developing type 2 diabetes is associated with aging, obesity, family history of diabetes, a personal history of gestational diabetes, not being physically active, and race and ethnicity.

Gestational Diabetes

This form of diabetes can develop during the second or third trimester of pregnancy. Gestational diabetes increases blood sugar levels and raises the risk of complications for both mother and baby. The risk factors are similar to those for type 2 diabetes, and treatment may include changes in diet or lifestyle or the use of insulin.

Women with gestational diabetes have a higher risk of developing the disease again during future pregnancies. They also have a higher risk of developing type 2 diabetes in the future.

Other Types of Diabetes

Other types of diabetes include maturity-onset diabetes of the young or latent autoimmune diabetes in adults. These types of diabetes are caused by specific genetic conditions or from surgery, medications, infections, pancreatic disease, or other illnesses. Other types of diabetes account for 1%-5% of all diagnosed cases.

Prediabetes

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

Diabetes in Youth

The increasing frequency of both type 1 and type 2 diabetes in youth has been among the most concerning aspects of the diabetes epidemic. Until recently, reliable data had been lacking on changes in diabetes prevalence in youth over time or even on how many children in the United States had type 1 or type 2 diabetes.

In response to this growing public health concern, CDC and the National Institutes of Health funded the SEARCH for Diabetes in Youth Study to examine type 1 and type 2 diabetes among children and adolescents in the United States.

Since 2000, the SEARCH Study has been helping to identify the types of diabetes and diabetic complications found in children and adolescents and how the disease affects the lives of this population. More than 20,000 participants are helping researchers collect baseline population data on childhood diabetes rates.

The SEARCH findings point to the need for better treatment strategies and technologies to improve diabetes management and metabolic control in children and adolescents.

Type 1 Diabetes Among Youth

- Nearly 167,000 US youth younger than age 20 had type 1 diabetes in 2009.
- More than 18,000 new cases of type 1 diabetes are estimated to be diagnosed among US youth younger than age 20 each year.
- Non-Hispanic white children and adolescents have the highest rates of new cases of type 1 diabetes.

Type 2 Diabetes Among Youth

- More than 20,000 US youth younger than age 20 had type 2 diabetes in 2009.
- More than 5,000 new cases of type 2 diabetes are estimated to be diagnosed among US youth younger than age 20 each year.
- Rates of new cases are higher among youth aged 10-19 than among younger children.
- Rates of type 2 diabetes are higher among youth aged 10-19 in some racial and ethnic minority groups than among non-Hispanic whites.

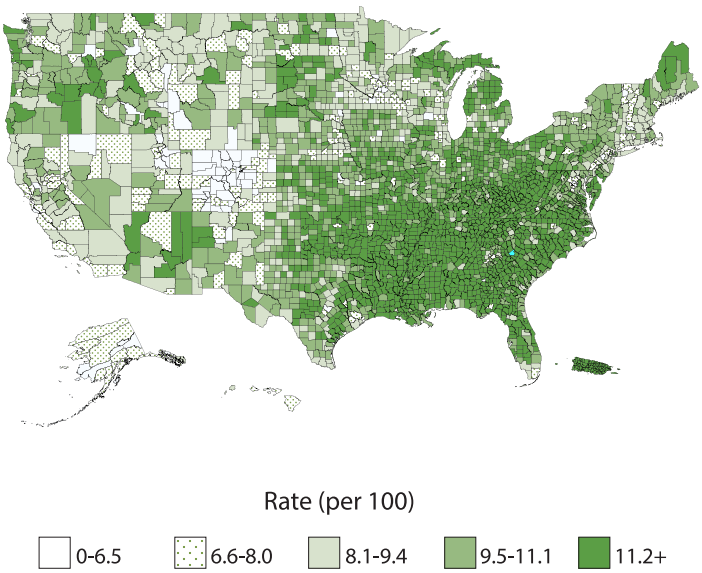
Diabetes in Adults

Diabetes was the seventh leading cause of death in the United States in 2013. CDC is actively working with state health departments, medical providers, caregivers, and community organizations to ensure that we are able to identify and respond effectively to people with diabetes to improve their health outcomes.

Table 1 shows the percentage of US adults, by state, who reported that they have ever been told by a health care provider that they have diabetes. Data for people with undiagnosed diabetes are not included. Estimates range from 6.2% in Montana to 11.7% in Mississippi.

Figure 4 shows the geographic distribution of the rates of diagnosed diabetes in adults across US counties in 2012, with percentages generally higher in the Southeast. CDC used the county data to define a geographic area called the "Diabetes Belt," within which the prevalence of diagnosed diabetes is especially high. This area includes 644 counties in 15 states in the southeastern part of the country.

Figure 4. County-Level Distribution of Diagnosed Diabetes Rates in US Adults, 2012



Note: Rates are age-adjusted to the 2000 US standard population.
Source: Diabetes Data and Statistics, County Data website.

Table 1. Percentage of US Adults Aged 18 or Older with Diagnosed Diabetes, by State, 2012

State	Percentage (%)
All States (Median)	**9.0**
Alabama	11.1
Alaska	7.2
Arizona	10.1
Arkansas	10.3
California	9.6
Colorado	7.2
Connecticut	8.2
Delaware	8.7
District of Columbia	9.0
Florida	9.9
Georgia	9.6
Hawaii	7.0
Idaho	7.8
Illinois	8.9
Indiana	10.1
Iowa	8.6
Kansas	8.8
Kentucky	9.8
Louisiana	11.5
Maine	8.2
Maryland	9.4
Massachusetts	7.7
Michigan	9.4
Minnesota	6.8
Mississippi	11.7
Missouri	9.6
Montana	6.2
Nebraska	7.4
Nevada	8.5
New Hampshire	7.8
New Jersey	8.4
New Mexico	9.4
New York	9.0
North Carolina	9.7
North Dakota	7.8
Ohio	10.5
Oklahoma	10.6
Oregon	9.1
Pennsylvania	8.9
Rhode Island	8.9
South Carolina	10.6
South Dakota	7.0
Tennessee	10.9
Texas	10.6
Utah	7.9
Vermont	6.4
Virginia	9.8
Washington	8.2
West Virginia	11.1
Wisconsin	7.5
Wyoming	8.4

Note: Percentages are age-adjusted to the 2000 US standard population.
Source: Behavioral Risk Factor Surveillance System.

Gestational Diabetes

Gestational diabetes develops or is first recognized during pregnancy. Most women are screened for gestational diabetes at 24-28 weeks of pregnancy during prenatal care. If a woman is diagnosed with this type of diabetes, she will need to learn how to maintain normal blood sugar levels to avoid health problems for herself and her baby.

Complications from gestational diabetes include preeclampsia, high birth weight, birth-related trauma, jaundice, low blood sugar (hypoglycemia), and birth defects. Women who have had gestational diabetes are at higher risk of developing type 2 diabetes later in life.

Figure 5 shows trends in the national prevalence of gestational diabetes during 1993-2009 for women aged 15-44 years who delivered babies in hospitals. In 2009, the prevalence of gestational diabetes among all pregnant women who delivered in a hospital was 5.6% per 100 deliveries.

Figure 5. Prevalence of Gestational Diabetes Among US Women Aged 15-44 Who Delivered in a Hospital, 1993-2009

Note: Rates are age-adjusted to the 2000 US standard population.
Source: Nationwide Inpatient Sample, Healthcare Cost and Utilization Project.

Prediabetes

Keeping type 2 diabetes from occurring in the first place is critical to reducing the problems associated with this disease. CDC estimates that 86 million US adults—more than 1 of 3—had prediabetes in 2012. Prediabetes is a serious health condition that increases the risk of developing type 2 diabetes, heart disease, and stroke. Although 37% of US adults have prediabetes, only 11% of those with prediabetes are aware that they have it.

Table 2 shows the percentage of US adults, by state, who reported that they have ever been told by a health care professional that they have prediabetes. Estimates ranged from 4.7% in Vermont and Wyoming to 10.6% in Hawaii. These findings are consistent with analyses of national data that suggest that awareness of prediabetes in the US population is low. As CDC continues to work to prevent type 2 diabetes among people with prediabetes, the percentage of people who are aware that they have prediabetes is expected to rise.

The CDC-led National Diabetes Prevention Program (National DPP) is an evidence-based lifestyle change program for preventing type 2 diabetes. The program stresses education, dietary changes, coping skills, and group activities to help participants lose a moderate amount of weight and get at least 150 minutes a week of physical activity. Trained lifestyle coaches give participants guidance and support.

The program encourages collaboration between federal agencies, community organizations, employers, insurers, health care professionals, academia, and other stakeholders. For more information, including if a program is offered in your community, visit the National Diabetes Prevention Program website.

Table 2. Percentage of US Adults Who Have Ever Been Told by a Health Care Professional that They Have Prediabetes, by State, 2012[a]

State	Percentage (%)
All States (Median)	5.9
Alabama	7.2
Alaska	6.9
Arizona[b]	6.8
Arkansas	5.4
California	NA[c]
Colorado	NA
Connecticut	5.9
Delaware	6.7
District of Columbia[b]	5.0
Florida	7.4
Georgia	6.4
Hawaii	10.6
Idaho[b]	5.9
Illinois	NA
Indiana	5.4
Iowa	5.1
Kansas	5.4
Kentucky	6.9
Louisiana	8.3
Maine	6.2
Maryland	NA
Massachusetts	5.1
Michigan	5.9
Minnesota	5.2
Mississippi	5.4
Missouri	NA
Montana[b]	4.8
Nebraska[b]	5.4
Nevada[b]	7.4
New Hampshire[b]	5.1
New Jersey	5.8
New Mexico	7.0
New York	6.3
North Carolina	6.5
North Dakota	4.9
Ohio	5.2
Oklahoma	5.7
Oregon	6.0
Pennsylvania	5.4
Rhode Island	5.3
South Carolina[b]	5.4
South Dakota	5.5
Tennessee	7.5
Texas	5.9
Utah	5.1
Vermont	4.7
Virginia	6.0
Washington	6.3
West Virginia	6.7
Wisconsin	5.5
Wyoming[b]	4.7

[a] Percentages are age-adjusted to the 2000 US standard population.
[b] Data are from 2011 because 2012 data are not available.
[c] NA = Data not available for 2011 or 2012.
Source: Behavioral Risk Factor Surveillance System.

Preventive Care Practices

Diabetes complications are debilitating, costly, and sometimes deadly. Diabetes is a major cause of health complications, such as heart disease, stroke, kidney damage (chronic kidney disease and kidney failure), blindness, amputations of the legs and feet, and gum disease (periodontitis). Diabetes complications tend to be more common and more severe among people whose diabetes is poorly controlled. People with diabetes can better manage their condition by following clinical care recommendations known as preventive care practices. Preventive care practices are essential to better health outcomes for people with diabetes.

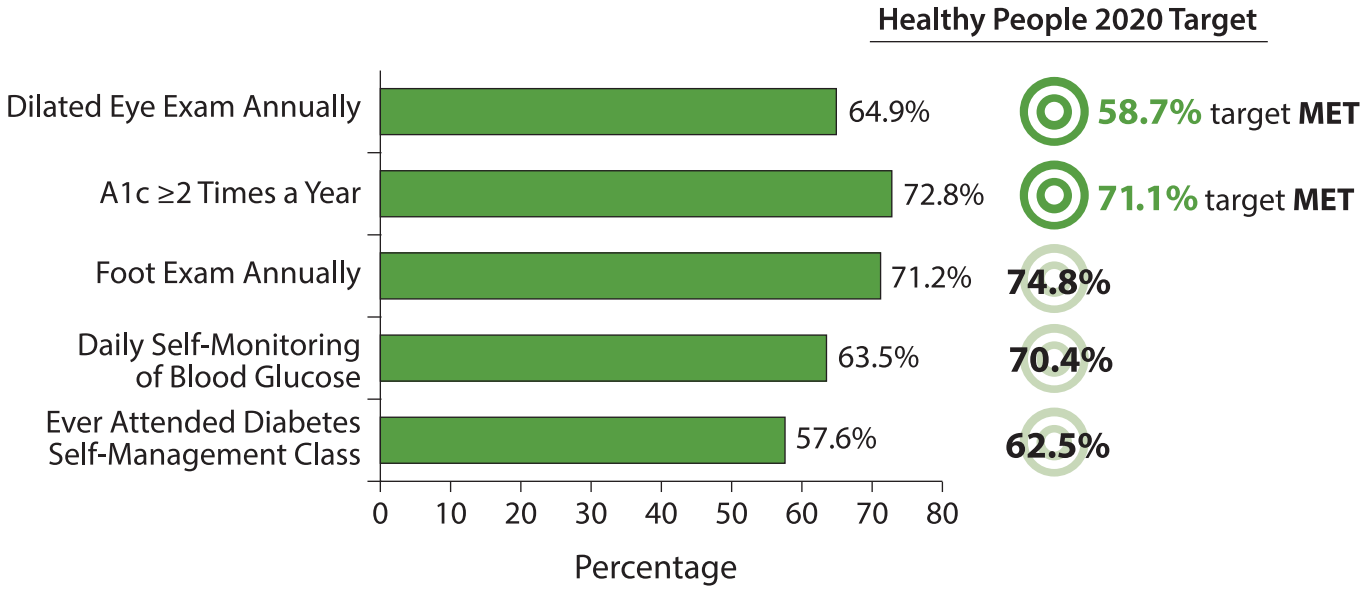
One example of a preventive care practice is diabetes self-management education, which can teach people how to manage the disease with certain self-care behaviors. These behaviors include eating a healthy diet, being physically active, self-monitoring blood sugar levels, and taking medications appropriately. Diabetes self-management education also connects people with diabetes educators who can teach them the problem-solving and coping skills they need to successfully self-manage diabetes and its complications.

Healthy People 2020

Healthy People 2020 is the nation's health agenda for improving the health of all Americans. It tracks progress toward meeting several diabetes-related objectives during this decade. The overall goal is to reduce diabetes and its economic costs and to improve the quality of life for all people who have or are at risk of diabetes. CDC is actively addressing several of the objectives in Healthy People 2020. For more information about these objectives, visit the Healthy People 2020 Diabetes website.

Figure 6 shows the percentage of US adults with diagnosed diabetes who reported receiving recommended preventive care practices during the 2012 Behavioral Risk Factor Surveillance System study period. Examples include annual eye exams and foot exams by a health care provider and daily (or more frequent) self-monitoring of blood sugar (glucose) levels. Five of the 16 Healthy People 2020 objectives for diabetes call for increasing the percentage of people with diabetes who follow these recommendations. Progress has been made in meeting two of the objectives, but more work is needed to meet the other three.

Figure 6. Healthy People 2020 Targets[a] and Percentage of US Adults Aged 18 or Older with Diagnosed Diabetes Who Reported Receiving Recommended Preventive Care Practices,[b] 2012



[a] Available on the Healthy People 2020 Diabetes website.
[b] Percentages are age-adjusted to the 2000 US standard population.
Source: National Diabetes Surveillance System, Behavioral Risk Factor Surveillance System data.

Table 3 presents estimates of the percentage of US adults aged 18 or older who reported receiving recommended preventive care practices, by state. Trend data are on CDC's Diabetes Data and Statistics website. On the State Data site, the box under the "What?" link can be changed to specific topics, including preventive care practices.

Table 3. Percentage of US Adults Aged 18 or Older with Diagnosed Diabetes Who Reported Receiving Recommended Preventive Care Practices, by State, 2012[a]

State	Foot Exam Annually	Dilated Eye Exam Annually	A1c Checked ≥2 Times a Year	Daily Self-Monitoring of Blood Glucose	Ever Attended Diabetes Self-Management Class
All States (Median)	**71.2**	**64.9**	**72.8**	**63.5**	**57.6**
Healthy People 2020 Target	**74.8**	**58.7**	**71.1**	**70.4**	**62.5**
Alabama	67.8	59.3	73.3	66.6	55.7
Alaska	74.9	64.9	73.4	65.0	73.4
Arizona[b]	72.5	63.8	67.3	65.2	53.2
Arkansas	61.7	50.2	66.0	67.7	52.3
California[b]	66.3	66.5	78.2	56.0	60.3
Colorado	NA[c]	NA	NA	NA	NA
Connecticut	76.3	70.9	75.0	63.9	52.6
Delaware	71.0	77.7	74.7	66.3	54.0
District of Columbia[b]	76.9	73.0	76.2	72.2	54.9
Florida[b]	65.1	62.2	68.3	64.6	51.2
Georgia	73.9	69.1	71.6	68.0	58.0
Hawaii	69.8	70.4	80.9	56.6	47.7
Idaho	68.8	53.4	57.3	56.8	62.9
Illinois	NA	NA	NA	NA	NA
Indiana[b]	67.5	62.7	65.9	63.0	59.5
Iowa[b]	77.8	73.9	78.4	61.2	63.9
Kansas	73.9	72.9	73.1	63.1	61.3
Kentucky	67.6	58.7	73.4	64.1	50.8
Louisiana[b]	69.4	65.7	70.5	69.3	57.3
Maine	81.7	65.3	74.9	56.3	61.9
Maryland	NA	NA	NA	NA	NA
Massachusetts[b]	79.2	76.8	75.2	67.6	50.3
Michigan	76.4	60.3	74.9	71.5	62.6
Minnesota	81.7	68.7	73.7	62.1	72.7
Mississippi	66.8	58.2	71.1	71.4	48.6
Missouri[b]	69.1	65.6	70.8	62.1	56.7
Montana[b]	76.8	62.9	68.0	56.7	59.7
Nebraska	71.2	60.7	70.3	59.0	63.7
Nevada	57.0	53.5	68.1	56.1	53.8
New Hampshire[b]	82.0	71.9	75.7	58.3	57.7
New Jersey	65.8	72.3	68.4	59.1	51.2
New Mexico	73.7	63.0	70.2	65.7	60.7
New York	NA	NA	NA	NA	NA
North Carolina	75.1	66.6	73.7	65.8	57.6
North Dakota[b]	81.2	64.7	75.7	63.6	65.7
Ohio	72.6	65.2	71.6	66.0	58.9
Oklahoma	67.0	56.6	76.2	66.6	57.8
Oregon	76.7	61.7	72.7	58.8	67.9
Pennsylvania	76.7	68.9	76.5	63.8	55.6
Rhode Island[b]	76.9	67.5	70.8	64.6	45.8
South Carolina	71.1	58.9	73.7	64.6	51.7
South Dakota	77.9	72.8	70.6	62.4	59.3
Tennessee	76.3	69.0	76.1	66.7	51.0
Texas	70.3	67.1	69.5	61.5	52.3
Utah	70.2	52.8	63.2	62.4	59.0
Vermont	77.9	67.9	75.5	61.2	53.7
Virginia	75.8	66.5	71.5	59.8	59.4
Washington	NA	NA	NA	NA	NA
West Virginia	64.5	65.4	72.8	64.0	50.5
Wisconsin	74.7	62.2	76.4	63.5	66.9
Wyoming	68.1	59.4	64.0	54.0	61.4

[a] Percentages are age-adjusted to the 2000 US standard population.
[b] Data are from 2011 because 2012 data are not available.
[c] NA = Data not available for 2011 or 2012.

Diabetes Complications

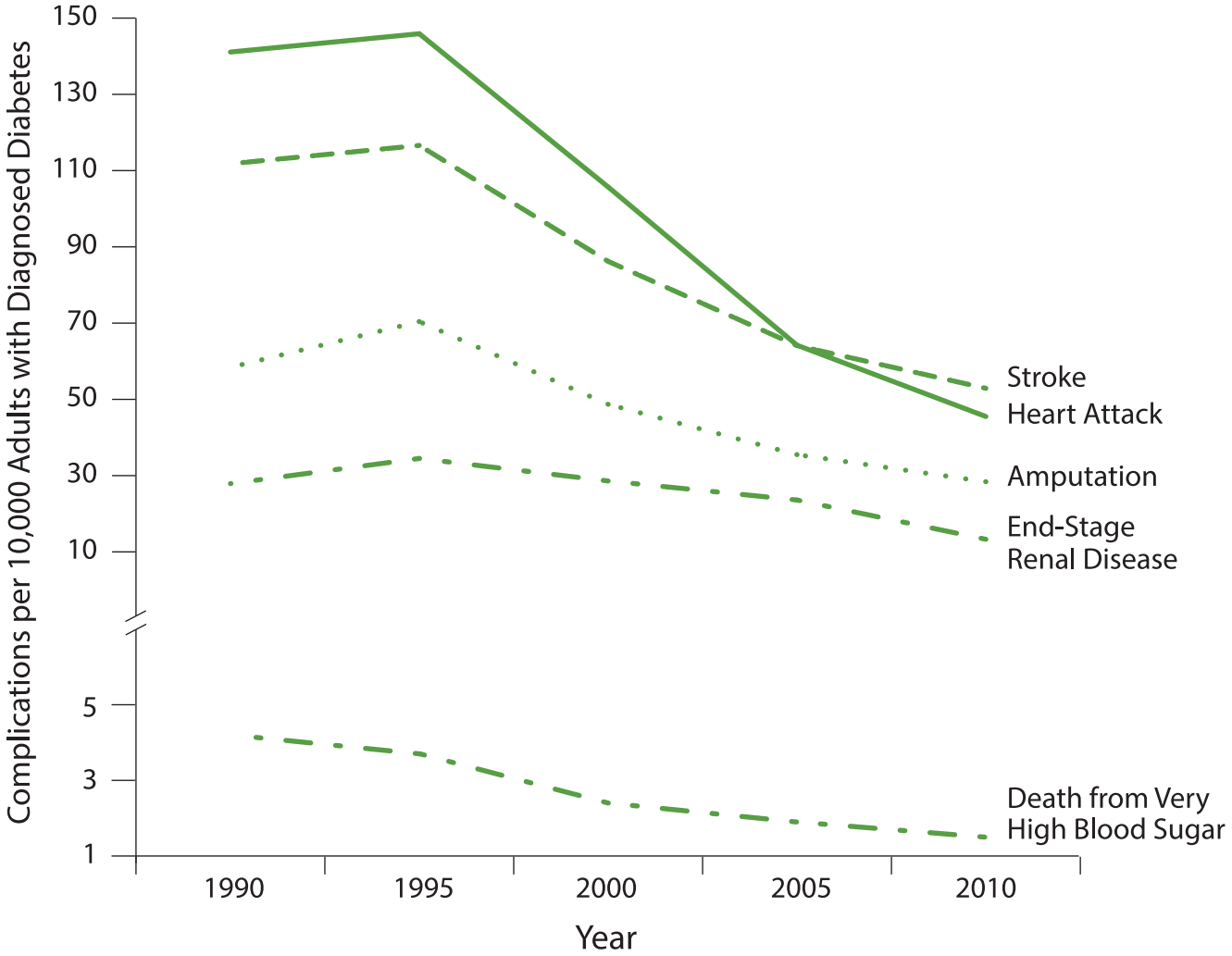
Over the past 20 years, preventive care for adults with diabetes and for the risk factors that cause complications has improved significantly in the United States. The rates of five major complications—heart attack, stroke, amputations of the legs and feet, end-stage renal disease, and deaths due to high blood sugar (hyperglycemic) crisis—all declined in adults with diagnosed diabetes during 1990-2010.

Although the declines in diabetes complications are good news, the number of people who suffer from these complications is still high and will remain high unless we can make significant progress in preventing type 2 diabetes. In addition, people with diabetes are living longer with the disease and its complications.

Recent studies have shown a need for health services to detect and manage diabetes. The continued demand for health services will increase disease management costs and place a burden on the US health care system.

Figure 7 shows that rates of heart attacks and deaths due to high blood sugar crisis among adults diagnosed with diabetes decreased by more than 60% during 1990-2010. Rates of strokes and amputations of the legs and feet fell by about 50%, and rates of kidney failure fell by about 30%. Declines in diabetes complications can be attributed to advances in clinical care, increased availability of preventive health care, control of risk factors, and increased awareness of the potential complications of diabetes.

Figure 7. Trends in Rates of Diabetes Complications Among US Adults with Diagnosed Diabetes, 1990-2010



Adapted from: Gregg EW, Li Y, Wang J, et al. Changes in diabetes-related complications in the United States, 1990-2010. *N Engl J Med*. 2014;370:1514-1523.

Diabetes Prevention and Control Recommendations

Community Preventive Services Task Force: Diabetes Prevention Programs

In July 2014, the Community Preventive Services Task Force recommended "combined diet and physical activity promotion programs for people at increased risk of type 2 diabetes and newly diagnosed diabetes" as an effective intervention for diabetes prevention and control. This recommendation is part of The Guide to Community Preventive Services, which provides systematic reviews and recommendations for community health policies and programs.

These types of programs actively encourage people to improve their diet and increase their physical activity. They commonly include the following:

- A weight loss goal.
- Individual or group sessions (or both) about diet and exercise.
- Meetings with a trained diet or exercise counselor (or both).
- Individually tailored diet or exercise plans.

Higher-intensity programs lead to more weight loss and a larger reduction in new cases of diabetes. For more information about these findings, see the Task Force Finding and Rationale Statement.

US Preventive Services Task Force: Diabetes Screening Measures

In 2008, the US Preventive Services Task Force (USPSTF) approved a "B" recommendation for screening for type 2 diabetes for adults with high blood pressure.[a] This recommendation takes into account the potential benefits of blood pressure measurement as an important predictor of heart disease and its related complications in people with type 2 diabetes. The USPSTF also supported a review of evidence that lifestyle change or medication therapy can delay the onset of type 2 diabetes in people with prediabetes, but it did not provide a rating.

- *The USPSTF recommends screening for type 2 diabetes in asymptomatic adults with sustained blood pressure (either treated or untreated) higher than 135/80 mm Hg.*

  Grade B: Recommendation

In October 2014, the USPSTF revisited the evidence for screening for type 2 diabetes and approved a draft version of a "B" recommendation for adults in primary care settings with known risk factors for impaired fasting glucose, impaired glucose tolerance, or diabetes.

Risk factors include being age 45 or older, being overweight or obese, or having a first-degree relative with diabetes. Women with a history of gestational diabetes or polycystic ovarian syndrome are also at increased risk. Certain racial and ethnic minority groups, including African Americans, American Indians or Alaska Natives, Asians, Hispanics, and Native Hawaiians or Other Pacific Islanders, are at higher risk than non-Hispanic whites.

- *The USPSTF recommends screening for abnormal blood glucose and type 2 diabetes mellitus in adults who are at increased risk for diabetes.*

  Draft Grade B: Recommendation

In August 2014, the USPSTF updated and refined the "B" recommendation for healthy diet and physical activity counseling to prevent heart disease in adults with cardiovascular risk factors. This recommendation now applies to adults aged 18 or older in primary care settings who are overweight or obese and who have known cardiovascular risk factors, such as high blood pressure, high cholesterol, or diabetes.

- *The USPSTF recommends offering or referring adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioral counseling interventions to promote a healthful diet and physical activity for CVD prevention.*

  Grade B: Recommendation

In January 2014, the USPSTF approved a "B" recommendation for gestational diabetes screening for asymptomatic pregnant women after 24 weeks of gestation. The USPSTF determined that this screening is likely to provide substantial health benefits for pregnant women and their unborn children.

- *The USPSTF recommends screening for gestational diabetes mellitus in asymptomatic pregnant women after 24 weeks of gestation.*

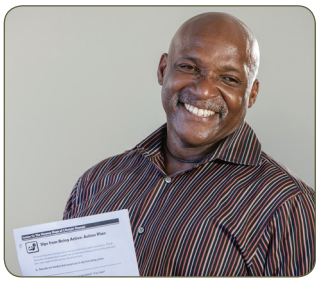
  Grade B: Recommendation

---

[a] The USPSTF grades the strength of the evidence it reviews as "A" (strongly recommends), "B" (recommends), "C" (no recommendation for or against), "D" (recommends against), or "I" (insufficient evidence to recommend for or against).

Stories from the Field

National DPP Lifestyle Coach Dedicated to Helping Others



RICKEY SEWELL
National DPP Lifestyle Coach

Rickey Sewell has been committed to helping people and promoting healthy behavior for decades. In addition to being a trained lifestyle coach with the National Diabetes Prevention Program (National DPP), he is a firefighter and paramedic. He is studying to become a certified diabetes educator and registered nurse.

Because he has several family members who are affected by type 2 diabetes, Rickey is especially passionate about teaching people to prevent and manage the disease. He loves his work as a lifestyle coach and the teachable moments the National DPP offers to participants. He is also a huge fan of its evidence-based approach and loves to dispel myths about what can and cannot prevent diabetes.

"It's the gold standard for lifestyle change to prevent type 2 diabetes, and it's great to be a part of that," Rickey says. "It's wonderful to see how the National DPP inspires people to live a healthier life!" Rickey enjoys reaching out to and connecting with other people, and he has a particular knack for relating to other African American men who might be reluctant to join the National DPP.

"They might be in denial about their risks or feel like [diabetes] can't be prevented," Rickey says. "But when I talk to them about the impact having a chronic disease could have on their family or intimate relationships, as well as the benefits of lifestyle change not just to prevent diabetes, but to be healthier overall, it's easier to get through to them."

Kentucky Coalition Improves Access to Health Care

CDC helps communities develop and set up diabetes projects in areas that are economically distressed or have significant numbers of people with low socioeconomic status. The goal is to get rid of health disparities related to diabetes.

An example of this type of project is the Kentuckiana Regional Planning and Development Agency (KIPDA). The agency supports the KIPDA Rural Diabetes Coalition (KRDC) to improve access to good medical care; affordable, healthy foods; and safe exercise opportunities for people with type 2 diabetes in three Kentucky counties. The KRDC also works to increase awareness about healthy behaviors.

Because of the work of the KRDC and the Kentucky Diabetes Network, state officials pledged $2.6 million a year for 2014-2016 to support diabetes services through local and district health departments. This support will improve access to diabetes education and resources throughout the state.

Participant Learns How Small Changes Can Improve Her Life

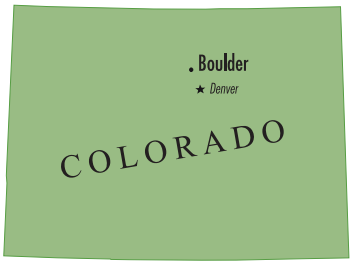
ESTELA URZUA
National DPP Participant

Because her family has a long history of diabetes, Estela Urzua knew that she would have to make changes in her life to avoid developing type 2 diabetes. She joined the National DPP to learn more about healthy eating and exercise. Estela enjoys working with other program participants and has learned from their diverse perspectives and suggestions. She also has learned a lot from her lifestyle coach about portion control and hidden sugar in food.

Throughout the program, Estela has slowly changed her eating habits and added a little exercise to her daily routine. She feels happier and more in control of her life. Estela wants others to know that, with a little work, they can also make a positive difference in their lives.

"I have always had passions in life, and this program has helped me take control of my eating and exercise habits so that I could fully embrace my life passions," Estela says.

Colorado Offers National DPP to State Employees



The Colorado Department of Public Health and Environment (CDPHE) has worked with internal and external program champions in Colorado to include the National DPP as a covered health benefit for state government employees. Partners include the state's wellness coordinator, major health plans that operate in the state, the Colorado Prevention Alliance, the Colorado Business Group on Health, and the Colorado Department of Personnel and Administration.

Initially, the partners worked together to pilot test the National DPP for CDPHE employees. This pilot test helped decision makers in Colorado better understand the value of the program. In September 2013, the National DPP became a covered benefit for 34,321 state employees who had either UnitedHealthcare or Kaiser Permanente health plans. Because the National DPP has been proven to prevent or delay the onset of type 2 diabetes, its use in Colorado will result in lower health care costs and a healthier, more productive state workforce.

Students in Alabama Work to Raise Diabetes Awareness

In March 2014, Resurrection Catholic School in Montgomery, Alabama, launched the Diabetes Ambassador Program in partnership with the Alabama Department of Public Health. This program teaches children how to reduce their risk of type 2 diabetes and make healthy lifestyle choices. Seven student ambassadors also used CDC and National Institutes of Health materials from the National Diabetes Education Program to educate their peers, teachers, school staff members, and parents about diabetes prevention.

Students in the Diabetes Ambassador Program at Resurrection Catholic School

The students wore pins from the International Diabetes Federation that had blue circles on them. The blue circle is the global symbol for diabetes. The school's principal also allowed students to wear blue clothing on Diabetes Alert Day (March 25) instead of their normal uniforms to raise awareness about diabetes.

Collaborative Helps Reach Pregnant Women at Risk of Diabetes

To better understand and reduce the problem of gestational diabetes in the United States, CDC and the National Association of Chronic Disease Directors supported the creation of a Gestational Diabetes Collaborative (GDC) in 10 states and four tribal organizations. The GDC is working to improve the monitoring and tracking of gestational diabetes. It also provides outreach and patient education to reduce women's risk of developing type 2 diabetes after delivery.

Preliminary data show that two tribal organizations in Oklahoma have reported significant increases in visits to tribal health care centers by postpartum women. During these visits, women are offered type 2 diabetes screening, healthy lifestyle counseling and, if needed, referrals to diabetes prevention services. Since June 2014, the percentage of women who received these services increased from 16% to 63% in the Chickasaw Nation and from 5% to 69% in the Choctaw Nation.

Technical Notes

The estimates in this report were calculated by CDC staff and are available in more detail in CDC's *National Diabetes Statistics Report, 2014* and from the National Diabetes Surveillance System website. Diabetes data are from the US Census Bureau, the Indian Health Service's National Patient Information Reporting System, and various surveys and data collection systems. These systems include the Behavioral Risk Factor Surveillance System (BRFSS), the National Health Interview Survey, the National Hospital Discharge Survey, and the National Vital Statistics System.

To make meaningful comparisons between states and over time, we used the 2000 US 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. State estimates in this report 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 US population.

References

Ali MK, Bullard KM, Saaddine JB, Cowie CC, Imperatore G, Gregg EW. Achievement of goals in U.S. diabetes care, 1999–2010. *N Engl J Med*. 2013;368:1613-1624.

American Diabetes Association. Economic costs of diabetes in the U.S. in 2012. *Diabetes Care*. 2013;36(4):1033-1046.

Barker LE, Kirtland KA, Gregg EW, Geiss LS, Thompson TJ. Geographic distribution of diagnosed diabetes in the U.S.: a diabetes belt. *Am J Prev Med*. 2011;40(4):434-439.

Boyle JP, Thompson TJ, Gregg EW, Barker LE, Williamson DF. Projection of the year 2050 burden of diabetes in the US adult population: dynamic modeling of incidence, mortality, and prediabetes prevalence. *Popul Health Metrics*. 2010;8:29.

Centers for Disease Control and Prevention. *Gestational Diabetes*. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2014.

Centers for Disease Control and Prevention. *National Diabetes Statistics Report, 2014.* Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2014.

Centers for Disease Control and Prevention. Diabetes Data and Statistics, County Data website. http://www.cdc.gov/diabetes/atlas/countydata/atlas.html. Accessed February 26, 2015.

Centers for Disease Control and Prevention. National Diabetes Surveillance System website. http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html. Accessed February 26, 2015.

Correa A, Bardenheier B, Elixhauser A, Geiss LS, Gregg EW. Trends in prevalence of diabetes among delivery hospitalizations, United States, 1993-2009 [published online ahead of print July 5, 4014]. *Matern Child Health J*. 2015;19(3)635-642. doi: 10.1007/s10995-014-1553-5.

Dabelea D, Mayer-Davis EJ, Saydah S, et al. Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. *JAMA*. 2014;311(17):1778-1786.

Geiss LS, Cowie CC. Type 2 diabetes and persons at high risk of diabetes. In: Venkat Narayan KM, Williams D, Gregg EW, Cowie CC, eds. *Diabetes Public Health: From Data to Policy*. New York, NY: Oxford University Press; 2011:15-32.

Geiss LS, James C, Gregg EW, Albright AL, Williamson DF, Cowie CC. Diabetes risk reduction behaviors among U.S. adults with prediabetes. *Am J Prev Med*. 2010:38(4);403-409.

Geiss LS, Wang J, Cheng YJ. et al. Prevalence and incidence trends for diagnosed diabetes among adults aged 20 to 79 years, United States, 1980-2012. *JAMA*. 2014;312(12):1218-1226.

Gregg EW, Li Y, Wang J, et al. Changes in diabetes-related complications in the United States, 1990–2010. *N Engl J Med*. 2014;370:1514-1523.

Gregg EW, Zhou X, Cheng YJ, Albright AL, Narayan KMV, Thompson TJ. Trends in lifetime risk and years of life lost due to diabetes in the USA, 1985–2011: a modelling study. *Lancet Diabetes Endocrinol*. 2014;2(11):867-874.

Gregg EW, Kirtland KA, Cadwell BL, et al. Estimated county-level prevalence estimates of diabetes and obesity — 2007. *MMWR Morb Mortal Wkly Rep*. 2009;58(45):1259-1263.

Li Y, Geiss LS, Burrows NR, Rolka DB, Albright A. Awareness of prediabetes — United States, 2005–2010. *MMWR Morb Mortal Wkly Rep*. 2013;62(11):209-212.

Xu J, Kochanek KD, Murphy SL, Arias E. Mortality in the United States, 2013. *NCHS Data Brief*. 2014;168:1-8.

National Association of Chronic Disease Directors. Gestational Diabetes website. http://www.chronicdisease.org/?page=00GDMHomePage. Accessed April 30, 2015.

Patient Protection and Affordable Care Act of 2009. Pub. L No. 111-148, Title X, Sec 10407, 42 USC 247b-9a.

Pettitt DJ, Talton J, Dabelea D, et al. Prevalence of diabetes in U.S. youth in 2009: the SEARCH for Diabetes in Youth Study. *Diabetes Care*. 2014;37(2):402-408.

The Guide to Community Preventive Services website. Diabetes Prevention and Control: Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk. http://www.thecommunityguide.org/diabetes/combineddietandpa.html. Accessed April 30, 2015.

US Department of Health and Human Services, Office of Minority Health. Diabetes and American Indians/Alaska Natives website. http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlID=33. Accessed February 26, 2015.

US Department of Health and Human Services, Office of Minority Health. Obesity and American Indians/Alaska Natives website. http://minorityhealth.hhs.gov/omh/content.aspx?lvl=3&lvlID=62&ID=6457. Accessed February 26, 2015.

US Preventive Services Task Force. Recommendations for Primary Care Practice website. http://www.uspreventiveservicestaskforce.org/Page/Name/recommendations. Accessed February 26, 2015.