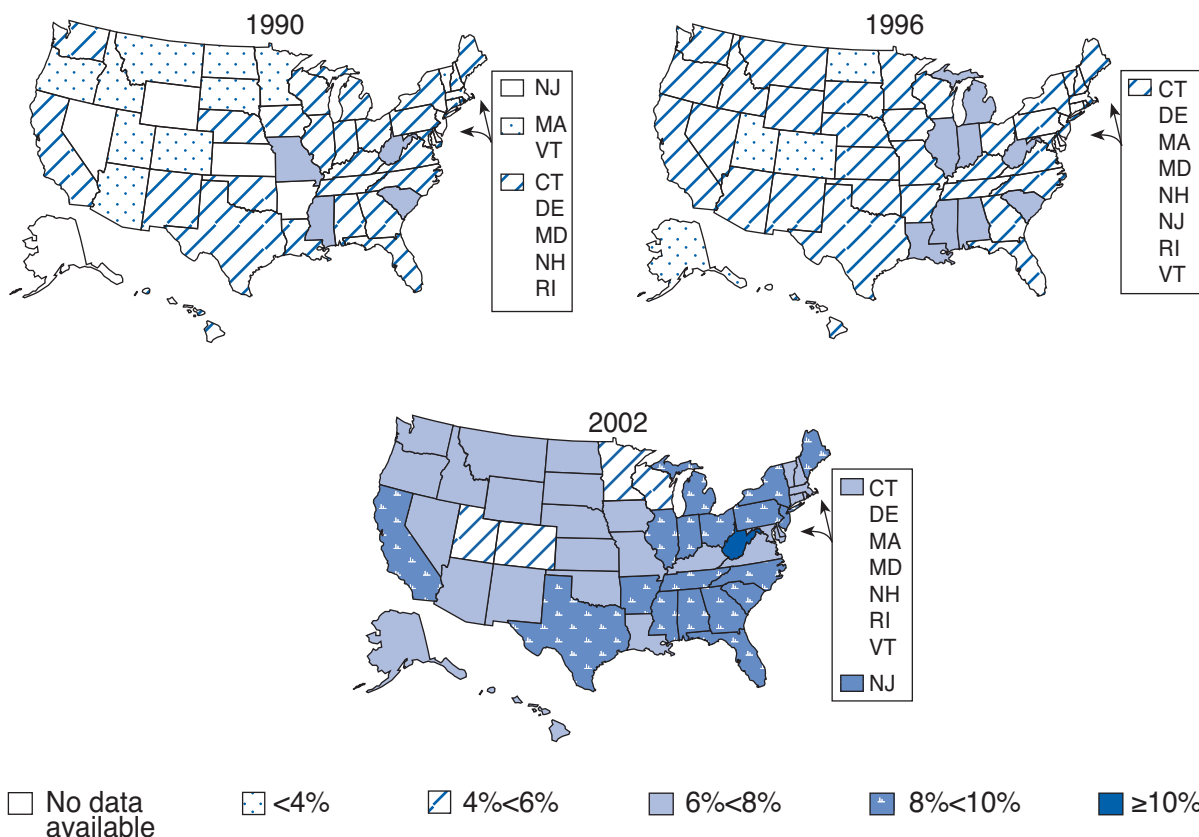


Diabetes: Disabling, Deadly, and on the Rise 2004

Percentage of Adults with Diagnosed Diabetes*



*Includes women with gestational diabetes.
Source: CDC, Behavioral Risk Factor Surveillance System.

“New evidence shows that one in three Americans born in 2000 will develop diabetes sometime during their lifetime. Together we can and must do more to prevent and control this growing epidemic of diabetes.”

Julie Louise Gerberding, MD, MPH
Director, CDC, and Administrator, ATSDR

Diabetes Is a Growing Public Health Problem

More than 18 million Americans have diabetes. Now the sixth leading cause of death in America, diabetes is responsible for over 200,000 deaths each year. The number of U.S. adults with diagnosed diabetes, including women with gestational diabetes (diabetes that develops during pregnancy), has increased 61% since 1991 and is projected to more than double by 2050.

People with diabetes have a shortage of insulin or a decreased ability to use insulin, a hormone that allows glucose (sugar) to enter cells and be converted to energy. When diabetes is not controlled, glucose and fats remain in the blood and, over time, damage vital organs. Diabetes can cause heart disease, stroke, blindness, kidney failure, pregnancy complications, lower-extremity amputations, and deaths related to flu and pneumonia. Particularly at risk for these complications are the 5.2 million Americans who are unaware that they have diabetes.

There are two main types of diabetes. Type 1 most often appears during childhood or adolescence. Type 2 diabetes, which is linked to obesity and physical inactivity, accounts for 90%–95% of diabetes cases and most often appears among

people older than 40. However, it is no longer considered an adult-only disease. Type 2 is now being found at younger ages and is even being diagnosed among children and teens.

Diabetes has its greatest effects on the elderly, women, and certain racial and ethnic groups. One in five adults over age 65 has diabetes. African American, Hispanic, American Indian, and Alaska Native adults are two to three times more likely than white adults to have diabetes.

In addition to the millions of Americans with diabetes, an estimated 16 million U.S. adults aged 40–74 have prediabetes—that is, their blood sugar level is elevated but is not high enough to be classified as diabetes. People with prediabetes are at high risk for developing diabetes.

Diabetes costs the nation nearly \$132 billion a year—\$92 billion in direct medical costs and another \$40 billion in indirect costs due to lost productivity. The average yearly health care cost for a person with diabetes was \$13,243 in 2002, compared with \$2,560 for a person without diabetes. Diabetes costs represented 11% of national health care expenditures during 2002.

Many Complications of Diabetes Can Be Prevented

Although the increasing burden of diabetes and its complications is alarming, much of this burden could be prevented with early detection, improved delivery of care, and better education on diabetes self-management. The following are examples of diabetes-related complications that could be prevented or reduced:

Eye disease and blindness. Each year, 12,000–24,000 people in this country become blind because of diabetic eye disease. Regular eye exams and timely treatment could prevent up to 90% of diabetes-related blindness; however, only 64.2% of people with diabetes received annual dilated eye exams in 2002.

Kidney disease. About 42,813 people with diabetes develop kidney failure each year, and over 100,000 are treated for this condition. Treatment to better control blood pressure and blood glucose levels could reduce diabetes-related kidney failure by about 50%.

Amputations. About 82,000 people have diabetes-related leg, foot, or toe amputations each year. Foot care programs that include regular examinations and patient education could prevent up to 85% of these amputations.

Cardiovascular disease. Heart disease and stroke cause about 65% of deaths among people with diabetes. These deaths could be reduced by 30% with improved care to control blood pressure, blood glucose, and blood cholesterol levels.

Pregnancy complications. About 18,000 women with preexisting diabetes and about 135,000 women with gestational diabetes give birth each year. These women and their babies have an increased risk for serious complications such as stillbirths, congenital malformations, and the need for cesarean sections. Women with gestational diabetes and their babies are also at higher risk of becoming obese and developing diabetes later in life. These risks can be reduced with screenings and diabetes care before, during, and after pregnancy.

Flu- and pneumonia-related deaths. Each year, 10,000–30,000 people with diabetes die of complications from flu or pneumonia. They are roughly three times more likely to die of these complications than people without diabetes; however, only 55% of people with diabetes get an annual flu shot.

CDC Provides National Leadership and Builds Partnerships

CDC provides leadership and funding to diabetes prevention and control programs nationwide. CDC also works with many partners to provide data for public health decisions, inform the public about diabetes, and ensure good care and education for Americans with diabetes.

Promoting Effective State Programs

With fiscal year 2004 funding of \$66.9 million, CDC provides limited support to 26 states, 8 territories, and the District of Columbia for capacity-building diabetes prevention and control programs. CDC provides substantial support to 24 states for basic implementation programs. In addition, CDC works with its partners to develop national public health performance standards for diabetes care. Partners include the Association of State and Territorial Health Officials, National Association of County and City Health Officials, National Association of Local Boards of Health, American Public Health Association, and the Public Health Foundation.

The CDC National Diabetes Program has adopted the concept of conducting assessments based on the 10 essential public health services (<http://www.cdc.gov/diabetes>). Results

of the assessments will help to identify areas of strength and areas for improvement needed to develop the best public health programs for diabetes prevention and control.

Monitoring the Burden and Translating Science

Timely data and public health research are essential for developing a better understanding of how diabetes affects different populations and how quality of care can be improved. CDC analyzes information from several national data sources, including the Behavioral Risk Factor Surveillance System, and explores ways to collect better diabetes data on groups most at risk.

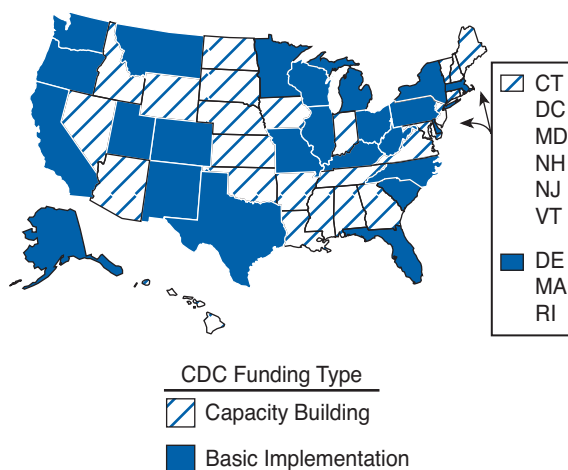
To translate scientific data into higher quality care, CDC works with many research partners, managed care organizations, and community health centers to assess how accepted standards of diabetes care are applied in clinical care settings. CDC and its partners also explore population-based quality of care, examining disparities in the quality of diabetes care and developing strategies to improve existing care practices.

Providing Education and Sharing Expertise

The National Diabetes Education Program (NDEP), sponsored by CDC and the National Institutes of Health (NIH), comprises a network of more than 200 public and private partners that works to increase awareness about diabetes and its control among health care providers and people with or at risk for diabetes. The goals are to help people with diabetes better manage the disease and to promote policies that improve the quality of care provided and access to such care. NDEP partners, including six national minority organizations, also develop community interventions and tools to improve diabetes care and prevention, especially for communities with a high burden of diabetes. NDEP products are available on the Internet (<http://www.ndep.nih.gov>) and in many different languages.

CDC also develops other resources for health professionals, people with diabetes, and communities. For example, *Diabetes Today* is a train-the-trainer program that guides health professionals and community leaders in developing a community plan for preventing the complications of diabetes. A Spanish version of *Diabetes Today* is available, and a regional training site serves Hawaii and the Pacific Basin.

CDC Funding for Diabetes Control Programs, Fiscal Year 2004*



*CDC also funds the following territories for capacity-building diabetes control programs: American Samoa, Federated States of Micronesia, Guam, Marshall Islands, Northern Mariana Island, Palau, Puerto Rico, and U.S. Virgin Islands and the District of Columbia.

Supporting Prevention Research

Studies suggest that the progression from prediabetes to diabetes can be prevented or delayed. In 2001, results from two landmark clinical trials—the Finnish Diabetes Prevention Study and the U.S. Diabetes Prevention Program (DPP)—demonstrated that sustained lifestyle changes that included modest weight loss and physical activity substantially reduced progression to diabetes among older adults who were at very high risk. Results from the DPP were so compelling that the trial was ended a year early. The lifestyle intervention worked equally well for men and women and all racial/ethnic groups, and it was most effective among people aged 60 or older.

Target Populations at Risk

- **Diabetes Detection Initiative.** CDC is leading the development and implementation of the Secretary’s Diabetes Detection Initiative. This national public health program uses social marketing and health communications strategies within health systems and communities to find some 5 million Americans who have type 2 diabetes but do not know it. Early diagnosis and proper treatment of diabetes can delay or even prevent serious diabetes-related health problems.
- **Primary prevention for people most at risk.** A healthy diet and modest physical activity can help people cut their risk for type 2 diabetes. CDC is developing methods to identify people at high risk for diabetes, policies to help these people reduce their risk, and public health programs that will slow the diabetes epidemic.
- **National Diabetes Prevention Center.** CDC funds a center in Gallup, New Mexico, that is working with American Indian and Alaska Native communities to develop culturally relevant and scientifically sound interventions to prevent complications from diabetes.
- **National Agenda for Public Health Action: A National Public Health Initiative on Diabetes and Women’s Health** offers recommendations to help professionals, women and their families, health care systems, work sites, communities, and schools address the burden of diabetes among women. CDC is working with numerous partners to carry out the plan.

State Diabetes Program In Action: Missouri

The Missouri Diabetes Prevention and Control Program (MDPCP) participated in the National Diabetes Collaborative. Through the collaborative, the state program used the Chronic Care Model to form teams of diabetes-related health care specialists. These teams established an initial “population of focus” registry of patients with diabetes to monitor indicators of health behaviors, health status, and services received. The MDPCP provided the participating health centers with financial support, technical assistance with registry development, health system redesign, and evaluation skills.

Over 3 years, 12 of the 16 diabetes-related care measures improved significantly. These improvements included increases in the prevalence of at least two A1c tests 3 months apart (15%), dilated-eye exams (190%), foot exams (47%), flu vaccinations (76%), and setting of self-management goals (37%). By participating in the collaborative, the MDPCP has improved the diabetes-related care and services that it delivers.

- **SEARCH for Diabetes in Youth.** Rising rates of diabetes among youth are a growing public health concern. CDC and NIH are funding this 5-year, multi-center study to examine the status of diabetes among U.S. children and adolescents.

Future Directions

CDC will continue to work with its partners to strengthen diabetes surveillance, prevention research, interventions, and communications. In support of Secretary of Health and Human Services Tommy Thompson’s *Steps to a HealthierUS* prevention initiative (<http://www.healthierus.gov/steps>), CDC plans to increase the number of diabetes prevention and control programs that receive basic implementation funding to put their plans into action, expand research and surveillance activities to address the unique needs of women and children with diabetes, develop and carry out a national public health strategy to address type 2 diabetes among children, and expand the activities of the National Diabetes Education Program.

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