

Message From the Secretary

Last summer, I was proud to join President Bush at the White House to launch his *HealthierUS* initiative. The President and I strongly believe that the role of government is to protect the freedom of all people to act to improve their own health—and that when more Americans are healthy, we all enjoy social and economic benefits. The message of the *HealthierUS* initiative is a clear reflection of those beliefs: a healthier America is a stronger America.

In the past few decades, medical science has made great advances in understanding the treatment of disease. Yet, while we put great effort into curing illnesses, we often put too little effort into taking the steps to prevent disease in our own lives. Today, millions of Americans face diseases that are, for the most part, preventable.

That's why I am proud to advocate a bold shift in our approach to the health of our citizens. In support of the President's initiative, I am leading a new departmentwide effort—*Steps to a HealthierUS*. Every American has the responsibility to take charge of his or her health. By mobilizing the resources of government and the health care industry, we can support, inform, and motivate these choices.

We at the Department of Health and Human Services are committed to easing the escalating burdens of preventable disease on our health care delivery system and on our society. When it comes to the future of health care in our great country, prevention is the only reasonable choice for us as policymakers. Working together, we can take steps to a healthier U.S.

Tommy G. Thompson
U.S. Department of Health and Human Services

Focus

Diabetes Continues To Pose a Public Health Challenge

By any measure, diabetes is one of the most serious health problems in the United States:

- In 1999, approximately 450,000 deaths occurred among people with diabetes. Diabetes was the sixth leading cause of death in the country that year.
- The annual cost of diabetes in medical expenditures and lost productivity soared to \$132 billion in 2002.
- Among people aged 20 years or older, 1 million new cases of diabetes are diagnosed every year.
- The nation spends \$13,243 on each person with diabetes, compared with \$2,560 per person for people who do not have diabetes.
- Both ends of the age spectrum are affected. The risk of diabetes increases with age, and baby boomers are aging. At the same time, more children and adolescents are being diagnosed with type 2 diabetes. The health and economic consequences are increasing accordingly. For example, premature cardiovascular disease and the costs associated with it are on the rise.
- In fact, cardiovascular disease is the most costly complication of diabetes, accounting for more than \$17.6 billion of the \$91.8 billion annual direct medical costs for diabetes in 2002.
- The toll on some racial and ethnic groups is significant: The prevalence of diabetes is 151 cases per 1,000 adult American Indians/Alaska Natives receiving care from the Indian Health Service; 130 and 102 cases per 1,000 adult non-Hispanic blacks and Hispanics, respectively; 78 cases per 1,000 adult

continued on page 2



continued from page 1

non-Hispanic whites; and 37 cases per 1,000 adult Asians or Pacific Islanders (although the data on this latter population are limited). The *Healthy People 2010* target is 25 cases per 1,000 for all populations.

Such statistics underline the magnitude of the problem, illuminate some of the risk factors, and document the urgent need for solutions. Diabetes-related health risks are twofold: health risks that can lead to diabetes and health risks that result from having diabetes. Age and race/ethnicity have already been mentioned. (See *Diabetes Disparities*.) Family history is another risk factor. And clearly, type 2 diabetes has shown a dramatic rise because of the ongoing epidemics of overweight and obesity, which are major risk factors. The diabetes-associated risks include loss of vision and blindness, foot ulcers, lower extremity amputations, and pregnancy and cardiovascular complications. (See *Gestational Diabetes*.) In addition, diabetes is associated with birth defects, high blood pressure, nervous system damage, dental disease, kidney disease, stroke, and flu and pneumonia-related deaths.

Unfortunately, the public is not well informed about these risks—and neither are people with diabetes. A recent survey by the American Diabetes Association (ADA) showed that two of three people with diabetes do not consider cardiovascular disease to be a serious threat. Awareness is even lower among older adults and Latinos. ADA and the American College of Cardiology are sponsoring “Make the Link! Diabetes, Heart Disease and Stroke” to inform people with diabetes about how they can lower their risk for heart attack and stroke (www.diabetes.org/main/info/link.jsp).

Patients’ lack of awareness also suggests that doctors are not communicating about the risks. In a recent survey, half of the respondents indicated that their health care providers did not discuss ways to reduce the risks for heart disease and stroke, such as lowering cholesterol or blood pressure. At a news conference at which the survey results were announced, Department of Health and Human Services (HHS) Secretary Tommy G. Thompson said, “So many people just do not make the connection between diabetes and heart disease.” Diabetes presents opportunities at all three levels of

prevention: primary, secondary, and tertiary. Findings from the Diabetes Prevention Program have shown that diet and exercise as well as treatment with the drug metformin can prevent or delay the development of diabetes. Prevention that addresses lifestyle risk factors is primary prevention at its best. Among working-aged adults, diabetes is the most common cause of blindness and severe vision impairment. Ninety percent of these vision problems could probably be forestalled by secondary and tertiary prevention efforts. For example, according to the Diabetes Control and Complications Trial, intensified control of blood sugar levels, a secondary prevention measure, slows the onset and progression of retinopathy. As for tertiary prevention, diabetes has become more manageable with innovations such as less painful blood glucose monitoring with meters and testing strips. (See *Guide to Clinical Preventive Services, Second Edition*, published by the U.S. Preventive Services Task Force [<http://ahrq.gov/clinic/cps3dix.htm>].)

Prevention, diagnosis, and treatment of diabetes are challenged by the complexities of the many risk factors and the disease itself. Diabetes is a disease resulting from the body’s inability to use **blood**

continued on page 3



Healthy People 2010: Focus Area 5—Diabetes

“Through prevention programs, reduce the disease and economic burden of diabetes, and improve the quality of life for all persons who have or are at risk for diabetes.”

With this broad and challenging goal, the *Healthy People 2010* focus area on diabetes sets the stage for 17 specific objectives that cover education, diagnosis, various complications, aspirin therapy, and glucose monitoring (www.healthypeople.gov/document/html/volume1/05diabetes.htm). Expected to be released soon is the report of the first progress review on diabetes.

continued from page 2

glucose for energy. In type 1 diabetes, the pancreas does not make insulin. In type 2 diabetes, the body is resistant to insulin, and the **pancreas** cannot produce enough insulin to maintain normal glucose levels. As a result, blood glucose cannot enter the cells appropriately to be used for energy.

Insulin is the hormone that helps the body use glucose, the main **sugar** found in the blood and the body's main source of energy. In diabetes, glucose builds up in the blood, resulting in hyperglycemia, which affects many sensitive organs. Hyperglycemia can result in the complications of diabetes, including renal disease, blindness, neuropathy, and lower limb amputation. The major types of diabetes are type 1 diabetes, which

occurs mainly in children and adolescents and requires insulin to sustain life, and type 2 diabetes. Once called adult-onset diabetes, type 2 diabetes is occurring in young people at an alarming rate. While all persons with diabetes require self-management training, the treatment for type 2 diabetes usually consists of a combination of physical activity, proper nutrition, and oral tablets and may require insulin treatment.

Among all individuals with type 2 diabetes, about one-third remain undiagnosed. Indeed, one *Healthy People 2010* objective calls for increasing the percentage of adults with diagnosed diabetes from 68 percent to 80 percent. In addition to addressing problems with diagnosis, *Healthy People 2010* calls for more study of

continued on page 4

Diabetes Disparities

Reducing disparities in health care, one of two *Healthy People 2010* overarching goals, has particular relevance to diabetes: Gaps exist among racial and ethnic groups in the rate of diabetes and its associated complications. African Americans, Hispanic/Latino Americans, American Indians, and some Asians and Pacific Islanders are at particularly high risk for type 2 diabetes. According to the Centers for Disease Control and Prevention (CDC), type 2 diabetes is becoming more common among children and adolescents in those populations.

Several studies have shown that the occurrence of gestational diabetes in African-American women may be 50 to 80 percent more frequent than in white women. (See *Gestational Diabetes*.) Studies of the Pima Indians of Arizona have shown that the strongest single risk factor for diabetes in Pima children is exposure to diabetes in utero.

Even within racial and ethnic groups, disparities exist. Diabetes takes an excessive toll on Pima Indians, who are at higher risk than other American Indians for many types of complications, including diabetic eye disease.

Many different diabetes information and education programs target the groups who are at higher risk for the disease. The National Diabetes Education Program, sponsored jointly by CDC and NIH, has launched a new campaign called "Si Tiene Diabetes, Cuide Su Corazon" ("If You Have Diabetes, Take Care of Your Heart"). The National Eye Institute offers "¡Ojo con su Visión!: Si tiene diabetes, lea esta historia" ("Watch Out for Your Vision: Read This Story if You Have Diabetes") (www.nei.nih.gov/health/espanol/ojodiabetes/insidecov.htm). The National Women's Health Information Center has fact sheets on diabetes in minority women (www.4women.gov). A full issue of the Office of Minority Health's "Closing the Gap" newsletter covers the link between diabetes and heart disease (www.omhrc.gov/ctg/ctg-oct-2002.pdf).

continued from page 3

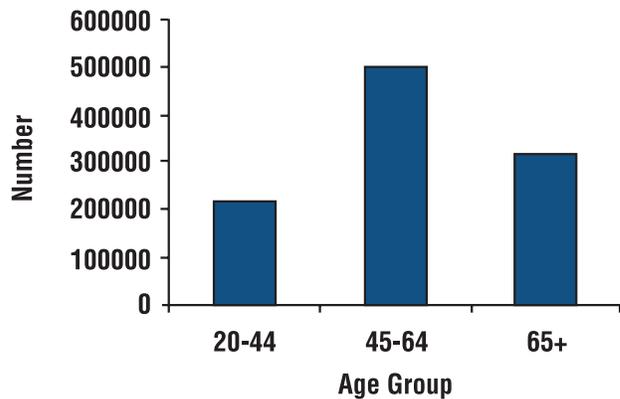
the factors accounting for the increasing frequency of the disease.

While early diagnosis and treatment are essential, so is reducing risk through healthy behaviors. “Move more, eat better” is the standard advice for those wishing to prevent overweight and obesity, major risk factors associated with diabetes. Another important message is that diabetes can be controlled and quality of life can be maintained.

The new “Small Steps, Big Rewards” program, sponsored by the Centers for Disease Control and Prevention and the National Institutes of Health, conveys this message: modest weight loss coupled with moderate physical activity can reduce the risk of developing type 2 diabetes.

Last year HHS Secretary Thompson warned about the risks of “prediabetes” (www.hhs.gov/news/press/2002pres/20020327.html). Prediabetes, which affects nearly 16 million Americans and sharply increases the risk for type 2 diabetes, occurs when a person’s blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. Lifestyle changes

Number of new cases of diagnosed diabetes in people aged 20 years or older, by age group—United States, 2000



Source: 1997-1999 National Health Interview Survey estimates projected to year 2000

can make a difference in the progression from prediabetes to diabetes.

Upon the release of the latest data on the costs of diabetes, Secretary Thompson said, “Diabetes continues to be a huge financial burden on patients,

continued on page 5

Gestational Diabetes

Gestational diabetes occurs in pregnant women who have never had diabetes before but during pregnancy develop blood sugar levels high enough to be defined as diabetic levels. Gestational diabetes develops in 2 to 5 percent of all pregnancies but disappears when a pregnancy ends. It occurs more frequently in African Americans, Hispanic/Latino Americans, American Indians, and persons with a family history of diabetes.

Once a woman has had gestational diabetes, she is at increased risk of recurrence of the disease in future pregnancies. She also is at increased risk for later development of type 2 diabetes. Experts estimate that as many as 50 percent of women with gestational diabetes develop type 2 diabetes within 20 years of the pregnancy.

Studies of diabetes and pregnancy have concluded that proper glycemia control before and during pregnancy and careful perinatal obstetrical monitoring can help to reduce perinatal death and congenital abnormalities. Recent studies have emphasized the importance of good fetal and neonatal nutrition in the general population and in women with diabetes.

continued from page 4

their families, and society, a burden that continues to grow in parallel with the obesity and diabetes epidemics in our society.”

In January 2003, Secretary Thompson announced the *Steps to a HealthierUS* initiative and plans to budget \$125 million for projects at the State and community level. The projects will use proven medical and public health strategies to reduce the burden of diabetes as well as obesity and asthma. The HHS initiative supports President Bush’s *HealthierUS* program, which uses all of the available resources of the Federal Government to alert Americans to the vital health benefits of simple and modest improvement in physical activity, nutrition, and behavioral choices. (See the news release at www.hhs.gov/news/press/2003pres/20030122.html.) In April, a national summit meeting, *Steps to a HealthierUS: Putting Prevention First*, will highlight policies that promote healthy environments and model programs from various communities that use *Healthy People 2010* as the cornerstone for planning efforts (www.healthypeople.gov/summit).

Spotlight

State-Based Programs Help Reduce Burden of Diabetes

Diabetes is more than a national issue. It is an issue in millions of families, thousands of hospitals and nursing homes, and every community and State. At the national, State, and individual patient level, the costs can be substantial. In the State of Michigan, for example, diabetes-related medical care exceeds \$2.9 billion.

Michigan is one of a number of States looking at ways to reduce these costs and improve the quality of life of people with diabetes. This *Spotlight* showcases Michigan as well as Minnesota, Missouri, and Utah. The Centers for Disease Control and Prevention funded the Minnesota and Utah programs. (See *Searching for Solutions*.)

The Michigan Diabetes Outreach Network is composed of six regional diabetes outreach networks, which in turn work with more than 150 agencies in the State

November is Diabetes Awareness Month.

The National Institute of Diabetes and Digestive and Kidney Diseases, the Centers for Disease Control and Prevention, the American Diabetes Association, and many other public and private organizations will host activities and distribute information. Check key Web sites in the next several months for ideas and materials for planning and conducting local activities.

(www.michigan.gov/mdch). The agencies range from physicians’ offices to community health centers to home care agencies. The networks collaborate with the agencies to ensure that people with diabetes receive care according to current clinical practice recommendations of the American Diabetes Association. Results show positive outcomes for people with diabetes.

The Minnesota Diabetes Prevention and Control Program has shown how increased community coordination, collaboration, and resource sharing can reduce the impact of diabetes (www.health.state.mn.us). The program partnered with two community-based coalitions in rural counties to develop and test a public-private coalition.

Substantial improvements in the quality of care have been reported from the Missouri Diabetes Prevention and Control Program, a collaboration of six federally qualified health centers and one National Health Service Corps site (www.dhss.state.mo.us/diabetes/index.html). The program demonstrates the importance of team delivery of comprehensive health care and increasing patient participation in the management of diabetes.

continued on page 6

continued from page 5

The Utah Diabetes Control Program worked with nine health plans to develop, implement, and evaluate care management strategies (www.health.utah.gov/diabetes). A program component to increase the number of eye exams showed important results for preventing severe vision loss.

Resources

Online Information on Diabetes Abounds

Keying the word “diabetes” into a popular search engine yields more than 6 million entries. Unless the search is more narrowly defined, locating resources on the Web is best accomplished through gateways like www.healthfinder.gov and other Federal or well-known organization sites.

The CDC Diabetes Public Health Resource site at www.cdc.gov/diabetes offers a great deal of information about diabetes, a “serious, common, costly, but controllable” disease. The site provides a significant amount of data, plus program information and suggestions for improving diabetes care.

The National Diabetes Education Program site at www.cdc.gov/team-ndep showcases the efforts of its sponsors—CDC and the NIH—and their partners.

A new online diabetes and health resource site, developed in collaboration with the National Diabetes Education Program, helps businesses and managed care companies assess the impact of diabetes in the workplace (<http://diabetesatwork.org>). The site also provides easy-to-understand information for employers to help their employees manage their diabetes and take steps toward reducing the risk for diabetes-related complications such as heart disease.

The National Diabetes Information Clearinghouse offers a host of online information, including easy-to-read publications and materials in Spanish (www.niddk.nih.gov/health/diabetes/ndic.htm).

Information for the public, patients, and researchers is available at the Juvenile Diabetes Research Foundation International site at www.jdf.org.

The American Diabetes Association, the leading diabetes voluntary organization, directs visitors to local information and resources, offers a virtual grocery store tour and online shopping, and provides an extensive section for health professionals at www.diabetes.org. The American Association of Diabetes Educators hosts a section on Medicare’s medical nutritional therapy and diabetes self-management training benefits at www.aadenet.org/whatsnew_frame.html.

Activities

Educational and Community-Based Programs/Activities

The National Diabetes Prevention Center (NDPC) is joining with Dine (Navajo) College to develop a Diabetes Prevention Research Training Program. Current plans are to develop, implement, and evaluate a research methods course for students and a seminar for community-based public health workers. NDPC hopes that the program can be used as a model for other tribal colleges. NDPC partners are now developing research proposals for addressing diabetes in Zuni and Navajo tribal communities. For more information, contact Donald Betts at (770) 488-5029 or at dib3@cdc.gov.

The Joslin Diabetes Center in Boston offers educational activities for health professionals over the World Wide Web. The Web site includes complete interactive courses as well as posttests for non-Web-based multimedia materials, such as CD-ROMs, videotapes, and monographs. Course offerings include Designing Successful Exercise Programs for People with Diabetes; Insulin Management and Intervening Illness: Clinical Perspectives; and Methods for Diagnosing Diabetes (Multimedia). More information is available at <http://professionaled.joslin.org/courselisting/onlinecourselisting.asp>.

The Diabetes EXPOs of the American Diabetes Association (ADA) provide the most comprehensive array of diabetes-related products, services, and information available under one roof. These interactive health fairs are for people with diabetes, those at risk for diabetes, and anyone interested in healthy living.

continued on page 7

continued from page 6

The event, which began 6 years ago in Phoenix, has spread to 15 major cities around the country, and more sites are being considered. Additional details are available at www.diabetes.org/main/aboutus/events/other/expo.jsp. For more information, contact Linda Rogers at (800) 253-0542 or (734) 429-1485.

Children With Diabetes (CWD) has booked a cruise on the Royal Caribbean International Cruise Line to celebrate the holidays and ring in the new year in 2004. CWD buddies will experience a 5-day, 4-night Caribbean cruise aboard the *Sovereign of the Seas*. The cruise will depart Port Canaveral, Florida, on December 29, 2003, and return on January 2, 2004. CWD has announced that Betty Brackenridge, CDE, author of *Sweet Kids*, will join the cruise as a featured

faculty member. She will offer one formal session daily focusing on living a healthy and full life with diabetes.

The Tour de Cure, an ADA fundraising event, features more than 20,000 cyclists riding to support the fight against diabetes and increase awareness of the deadly disease. The cyclists' combined efforts will make a difference to the 17 million Americans who suffer from diabetes and the 16 million people in the United States with prediabetes. Across the nation, riders at more than 70 locations will pedal to find a cure, support education, and advocate for those with diabetes. For more information, log on to <http://tour.diabetes.org>.

Searching for Solutions

In public and private laboratories and clinics throughout the world, researchers are investigating ways to prevent, treat, and cure diabetes. Leading the Federal Government's efforts are Centers for Disease Control and Prevention (CDC) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

With fiscal year 2002 funding of \$61.8 million, CDC supports core diabetes control programs in 34 States, 8 territories, and the District of Columbia and provides more substantial support for comprehensive programs in 16 States (www.cdc.gov/diabetes). Other CDC funding efforts include \$3.5 million to the National Diabetes Laboratory to support studies to improve the lives of people with diabetes.

NIDDK sponsors extramural and intramural research on both type 1 and type 2 diabetes, ranging from islet transplantation to primary prevention. For example, the Diabetes Prevention Trial-1 is a large-scale study testing whether insulin injections or insulin capsules can prevent or delay type 1 diabetes in humans. Nine medical centers and more than 350 clinics in the United States and Canada are taking part in the study (www.niddk.nih.gov/patient/dpt_1/dpt_1.htm).

In the private sector, the American Diabetes Research Program supports projects covering the spectrum from islet cell biology and transplantation techniques to studies in education and behavioral issues. Its budget was nearly \$32 million in 2002 (www.diabetes.org/main/professional/research/default.jsp).

The Joslin Diabetes Center, affiliated with Harvard Medical School, is celebrating its second century of "expanding the legacy of discovery and cure" (www.joslin.harvard.edu/main.shtml). The center has reported many technological advances in the diagnosis and treatment of diabetes and related conditions, including hypertension and obesity.

In the Literature

The Impact of Ethnicity on Type 2 Diabetes.

N. Abate and M. Chandalia. *Journal of Diabetes and Its Complications* 17(January-February 2003):39-58. Ethnic-related lifestyle factors may account for some of the predisposition to obesity and diabetes in various ethnic groups, but genetic factors may play a more important role in the increasing prevalence of type 2 diabetes in the multiethnic U.S. population.

Valuing Health-Related Quality of Life in Diabetes.

J.T. Coffey, et al. *Diabetes Care* 25(December 2002):2238-2243. Questionnaires administered to people with type 1 and type 2 diabetes assessed the effect of diabetes treatments and complications on their health-related quality of life to pave the way for studies of the health and cost burden of diabetes and alternative strategies for the prevention and treatment of the disease.

Costs Associated With the Primary Prevention of Type 2 Diabetes Mellitus in the Diabetes Prevention Program.

W.H. Hernan, et al. *Diabetes Care* 26(January 2003):36-47. A comparison of the costs of three interventions (placebo, metformin, and lifestyle changes) to prevent or delay type 2 diabetes concluded that a cost-health benefits evaluation will determine the value of the interventions to health systems and society.

Obesity, Diabetes, and Coronary Risk in Women.

A.D. Pradhan, et al. *Cardiovascular Risk* 9(December 2002):323-330. This article reviews the available epidemiologic data on the complex associations between obesity, diabetes, and coronary heart disease in women.

Diabetes Education for People With Disabilities.

Diabetes Education 28(November-December 2002):916-921. This position statement provides guidance to diabetes educators regarding their ethical and legal responsibilities to people with disabilities and promotes the same standard of quality in diabetes education for all people regardless of disability.

Meetings

2003 CDC Diabetes Translation Conference.

Boston, MA. (617) 262-9600, or visit www.cdc.gov/diabetes/conferences.
March 31-April 3, 2003.

Steps to a HealthierUS: Putting Prevention First.

Baltimore, MD. Visit www.healthypeople.gov.
April 15-16, 2003.

American Association of Clinical Endocrinologists (AAACE) Annual Meeting.

San Diego, CA. (904) 353-7878, or visit www.idf.org/home/index.cfm?unode=8893CEA8-C941-4C97-A3D2-A6731DA33E59.
May 14-18, 2003.

18th Annual American Diabetes Association Southern Regional Conference on Diabetes.

San Francisco, CA. (407) 660-1926, ext. 3026, or visit www.diabetes.org/src03.
May 22-25, 2003.

American Diabetes Association Scientific Session USA 2003.

New Orleans, LA. (800) 232-3472, select option 5, or visit www.idf.org/home/index.cfm?unode=3B96F7A7-C026-2FD3-879AE04CA6277FB5.
June 13-17, 2003.

Friends for Life Conference and Expo.

Orlando, FL. (407) 939-1020, or visit www.childrenwithdiabetes.com/activities/orlando2003.
July 9-12, 2003.

Diabetes Exercise and Sports Association.

Chicago, IL. (623) 535-4593, or visit www.diabetes-exercise.org/events.html.
July 24-26, 2003.

American Association of Diabetes Educators 30th Annual Meeting and Exhibition.

Salt Lake City, UT. Visit www.aadenet.org/annual_frame.html.
August 6-9, 2003.