

# *The Power of Prevention*

REDUCING THE  
HEALTH AND ECONOMIC BURDEN  
OF CHRONIC DISEASE

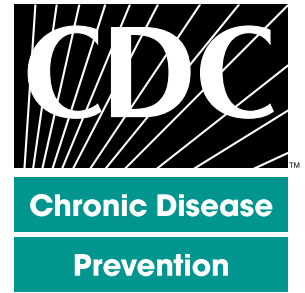


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**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

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# The Power of Prevention



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

## WE FACE AN EPIDEMIC OF UNPARALLELED PROPORTIONS . . .

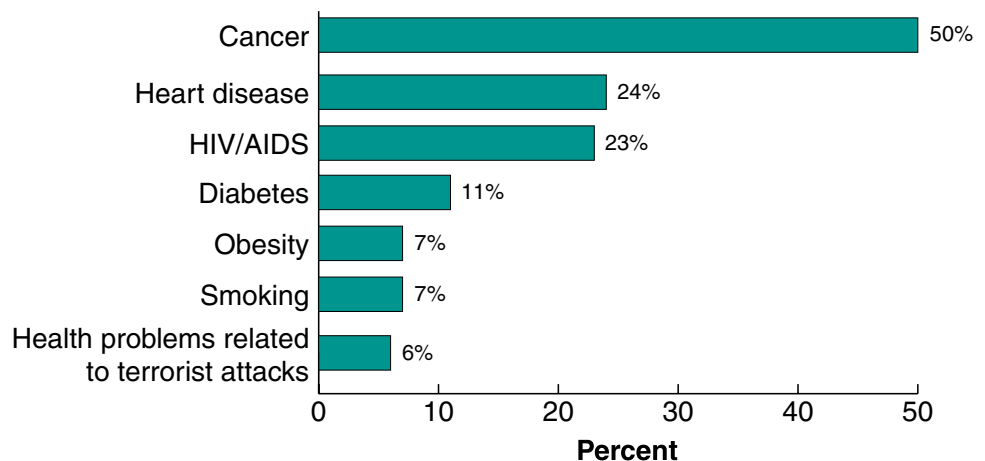
Never before have Americans felt so vulnerable. We are more fearful of unpredictable, often random events, such as terrorist attacks including anthrax exposure, infectious diseases such as the West Nile virus, violence and crime, and other uncontrollable threats such as a plane crash, than we are of largely preventable life-threatening diseases. The risk of illness or death, however, from chronic diseases including heart disease, cancer, and stroke is far greater. And while many are aware of the seriousness of chronic illnesses—with respondents to a recent survey identifying chronic diseases or related risk factors as **5 of the 6 most important health problems**—most Americans have not changed their lifestyles sufficiently to reduce their risk of death or illness.

The United States faces a health epidemic of unparalleled proportion—an epidemic that is substantiated by the hard facts.

- **More than 1.7 million** Americans die of a chronic disease each year, accounting for about 70% of all U.S. deaths.
- Five chronic diseases—heart disease, cancer, stroke, chronic obstructive pulmonary disease (e.g., asthma, bronchitis, emphysema), and diabetes—cause more than **two-thirds of all deaths** each year.
- Chronic disease is not just an issue among older adults. **One-third of the years of potential life lost** before age 65 is due to chronic disease.

**Figure 1. Americans' Views of the Most Important Health Problems, November/December 2001**

Percentage of respondents saying issue is one of the two or three most **important** health problems:



Note: Total percentage is greater than 100% because each respondent was asked to give up to three different answers.

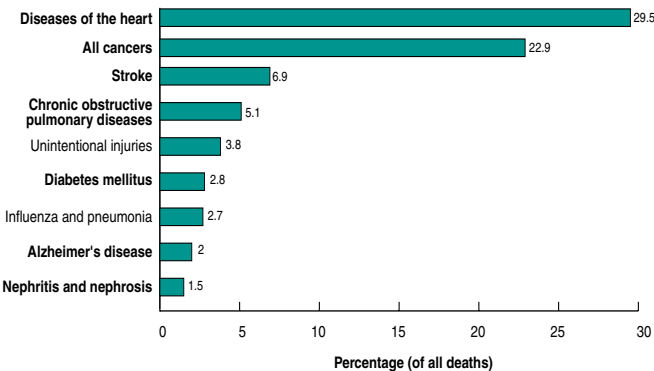
Source: Published by Project Hope. The Continuing Legacy of September 11 for Americans' Health Priorities. *Health Aff (Web Exclusive)* August 14, 2002;W273. [www.healthaffairs.org](http://www.healthaffairs.org)  
Harvard School of Public Health, Robert Wood Johnson Foundation, International Communications Research poll, 2001.

The number of deaths alone, however, fails to convey the full picture of the toll of chronic disease. More than 125 million Americans live with chronic conditions, and millions of new cases are diagnosed each year. These serious diseases are often treatable but not always curable. Thus, an even greater burden befalls Americans from the disability and diminished quality of life resulting from chronic disease.

Chronic, disabling conditions cause major limitations in activity for 1 of every 10 Americans, or 30 million people.

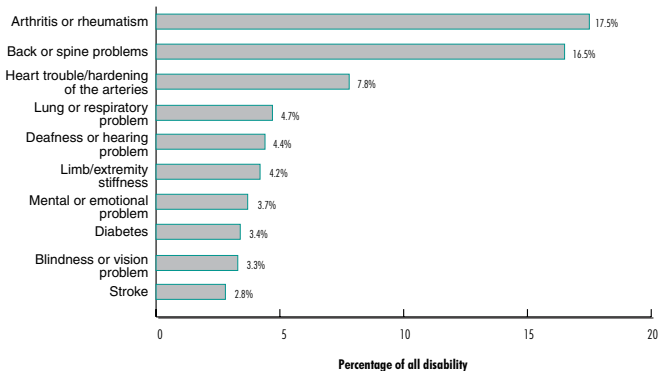
- **Arthritis** or chronic joint symptoms is the number one cause of disability, affecting nearly 1 of every 3 adults in the United States.
- **Stroke** has left 1 million Americans with disabilities; many can no longer perform daily tasks, such as walking or bathing, without help.
- **Diabetes** is the leading cause of kidney failure and of new blindness in adults. More than 60% of leg and foot amputations unrelated to injury are among people with diabetes.

**Figure 2. Most Common Causes of Death, United States, 2000**



Boldface type indicates chronic disease or condition.  
 Source: National Center for Health Statistics. *Mortality Report*. Hyattsville, MD: U.S. Department of Health and Human Services, 2002.

**Figure 3. Most Common Causes of Disability, \* United States, 1999**



\* For the full definition of disability, see the source below.  
 Source: CDC. Prevalence of disabilities and associated health conditions among adults—United States, 1999. *MMWR* 2001;50(7):120–5.

Almost every American is adversely affected by chronic disease in one way or another—through the death of a loved one; a family member's struggle with lifelong illness, disability, or compromised quality of life; or the huge personal and societal financial burden wrought by chronic disease.

**When we measure our nation's health, by the length of life  
 or by the quality of that life . . .  
 . . . we cannot afford to ignore the urgency of chronic disease.**

## HEALTH CARE SPENDING IS ON THE RISE . . .

Our nation spends more on health care than any other country in the world. In 1980, the nation's health care costs totaled \$245 billion—an average of \$1,066 for each American. In 2001, the total health care cost was an astounding \$1.4 trillion. This is an average of \$5,035 for each American.

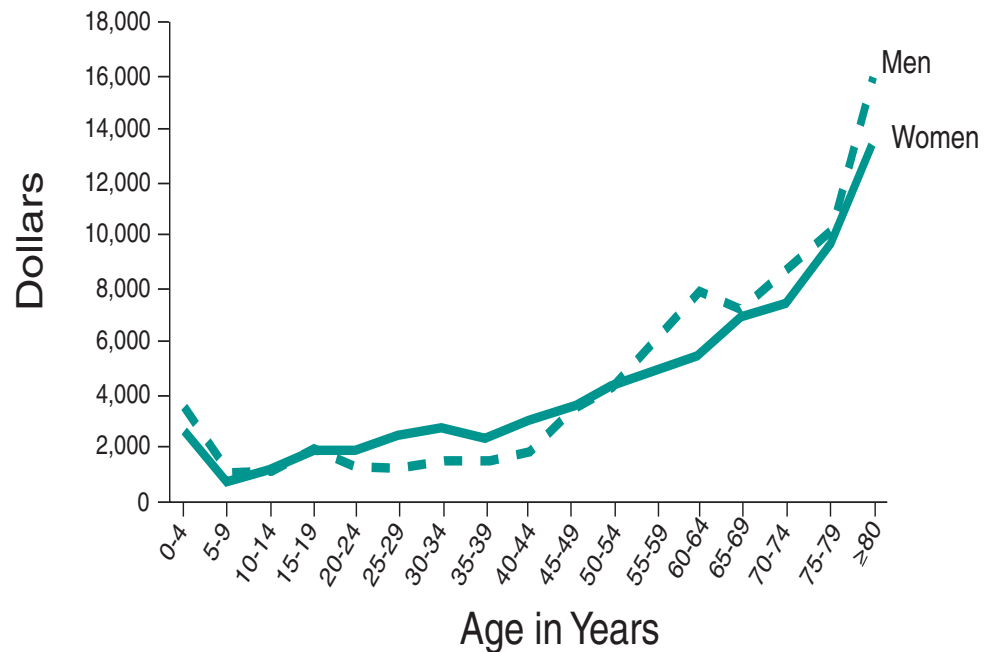
Chronic disease accounts for roughly 75% of health care costs each year. According to the latest available figures,

- The estimated cost of **cardiovascular disease and stroke** in 2003 is \$351.8 billion. Of this amount, \$209.3 billion is due to direct medical costs and \$142.5 billion to lost productivity.
- In 2000, the total cost of **obesity** was estimated to be \$117 billion. Of this amount, \$61 billion was due to direct medical costs and \$56 billion to lost productivity.
- The estimated cost of **cancer** in 2002 was \$171.6 billion. Of this amount, \$60.9 billion was due to direct medical costs and \$110.7 billion to lost productivity.
- The estimated cost of **diabetes** in 2002 was \$132 billion. Of this amount, \$91.8 billion was due to direct medical costs and \$39.8 billion to lost productivity.
- The estimated cost of **arthritis** in 1995 was \$82 billion. Of this amount, more than \$22 billion was for direct medical care and \$60 billion for lost productivity.

Chronic disease risk factors also place huge economic demands on our nation.

- Direct medical expenditures attributed to **smoking** total more than \$75 billion per year. In addition, smoking costs an estimated \$80 billion per year in lost productivity.
- In 2000, health care costs associated with **physical inactivity** were more than \$76 billion.
- Each year, over \$33 billion in medical costs and \$9 billion in lost productivity due to heart disease, cancer, stroke, and diabetes are attributed to **poor nutrition**.

**Figure 4. Estimated Per Capita Health Expenditures, by Age and Sex, 1995**



Source: From *Baby Boom to Elder Boom: Providing Health Care for an Aging Population*. Washington, DC: Watson Wyatt Worldwide, 1996.

## Why is health care for chronic disease so costly?

Because of breakthroughs in science and technology and improvements in environmental and social conditions, Americans are living longer than ever before. In 1950, the average life expectancy was 59 years; today it is nearly 77 years.

The percentage of the population over age 65 has grown dramatically and will continue to do so. Since 1900, the number of people in America aged 65 years or older has increased 11-fold, from more than 3 million to nearly 35 million. The number of Americans aged 65 years or older is expected to double to 70 million people over the next 30 years. Because older adults typically require more health care than their younger counterparts, medical costs will increase as the population ages. Health care expenditures for a 65-year-old are now 4 times those of a 40-year-old. By 2030, health care spending will rise by 25%, before taking inflation or new technologies into account, simply because more Americans will be older.

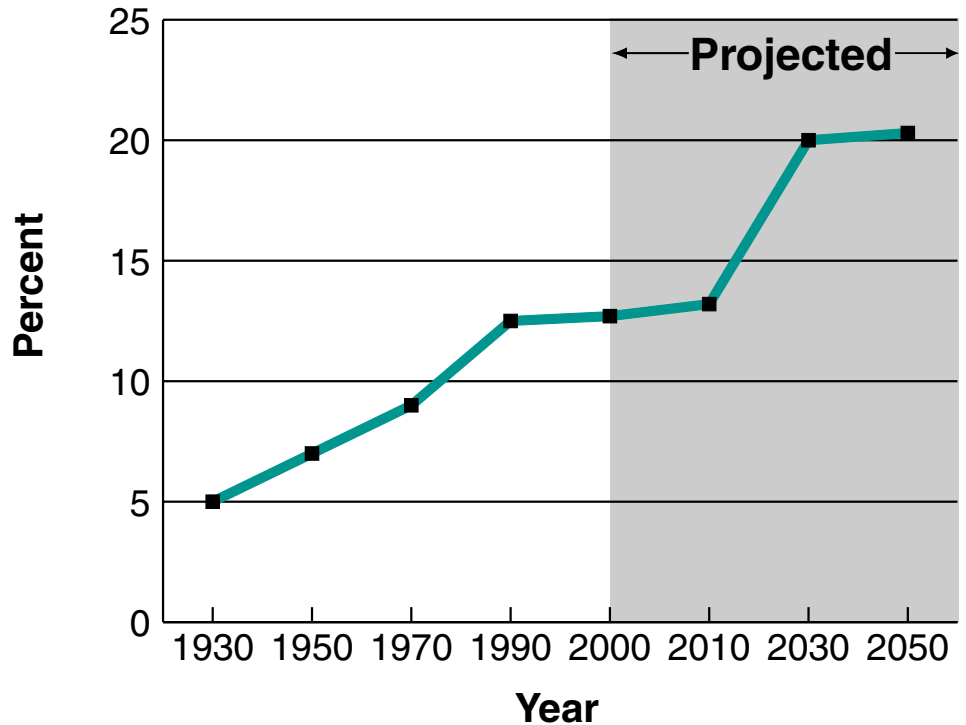
We have also experienced a recent explosion in health care technology. We point proudly to the past century's advancements in medical technology, many of which have enabled better diagnosis and treatment. However, these advances do not come cheaply; in fact, they account for about 60% of the increased cost of health care.

Inflation has also taken its toll on rising health care costs, adding another 20% to the total bill.

**If current policies and conditions hold true, by the year 2011, our nation will be spending over \$2.8 trillion on health care . . .**

**. . . we cannot afford this escalating cost.**

**Figure 5. Percentage of U.S. Population Over 65 Years of Age**



Source: From *Baby Boom to Elder Boom: Providing Health Care for an Aging Population*. Washington, DC: Watson Wyatt Worldwide, 1996.

## THE POWER OF PREVENTION . . .

Although chronic diseases are among the most common and costly of all health problems, they are also among the most preventable. The following examples show what targeted investments in prevention can achieve:

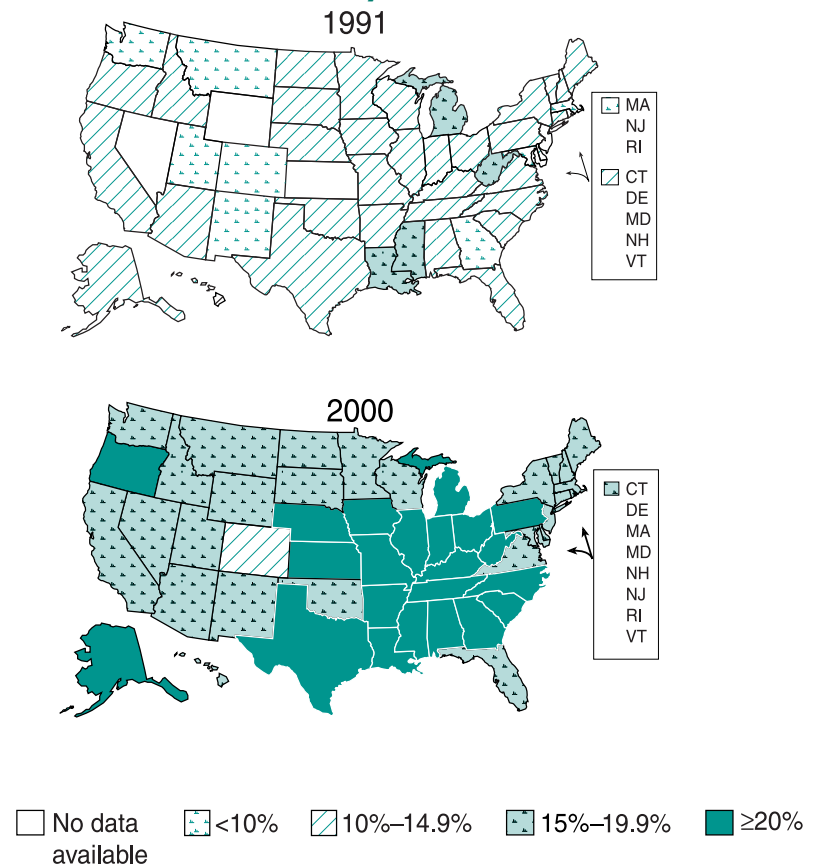
- About 90% of middle-aged Americans will develop high blood pressure in their lifetime, and nearly 70% of those who have it now do not have it under control.
- Regular screening for colorectal cancer can reduce the number of people who die of this disease by at least 30%. Regular mammograms can dramatically reduce a woman's risk of dying of breast cancer. A mammogram every 1–2 years can reduce this risk by about 16% for women aged 40 years or older.
- Preventive efforts can benefit the 17 million Americans with type 1 or type 2 diabetes. Research has shown that improved glycemic control leading to a 1% reduction in results of A1C blood tests reduces the risk of developing microvascular diabetic complications (eye, kidney, and nerve disease) by 40%. Regular eye exams and timely treatment could prevent up to 90% of diabetes-related blindness. Health care services that include regular foot examinations and patient education could prevent up to 85% of diabetes-related amputations.
- People who are obese (body mass index  $\geq 30$ ) have a 50% to 100% greater risk of premature death from all causes than do people at a healthy weight.

Three modifiable health-damaging behaviors—tobacco use, lack of physical activity, and poor eating habits—are responsible for much of the inordinate suffering and early death of millions of Americans. In fact, approximately **33% of all U.S. deaths (about 800,000 deaths each year)** in the United States can be attributed to these behaviors.

Additionally, alcohol consumption, mainly heavy drinking, is associated with 5% of these deaths.

Access to high-quality and affordable prevention measures (including screening and appropriate follow-up) is essential if we are to save lives and reduce medical care costs.

**Figure 6. Percentage of Adults Who Are Obese,\* by State**



\*Body mass index  $\geq 30$ , or about 30 pounds overweight for 5' 4" person.

Source: CDC, Behavioral Risk Factor Surveillance System.

Tremendous achievements in health are possible if we focus on the risk factors that underlie chronic disease.

- The health benefits of quitting smoking are numerous, and many are experienced quickly. Within several months, coughing and other respiratory symptoms decrease and lung function increases. One year after quitting, excess risk for heart disease is reduced by half; risk for stroke is reduced after 5 years of not smoking. Ten years after quitting, the lung cancer death rate is about half that of a current smoker; 15 years after quitting, an ex-smoker's risk for heart disease is about the same as that of a lifelong nonsmoker.

Nearly 70% of the more than 46.5 million American adults who smoke cigarettes want to quit, but few are able to quit permanently without help.

- Lifestyle changes in diet and exercise to promote losses of 5% to 7% in body weight can prevent or delay the onset of type 2 diabetes for Americans at high risk for the disease—those defined as prediabetic. Participants in a major clinical trial group exercised at moderate intensity, usually by walking an average of 30 minutes a day, 5 days a week, and lowered their intake of fat and calories. Their efforts resulted in a weight loss of about 10 to 15 pounds, reducing their risk of getting diabetes by 58%.
- Regular physical activity helps control weight and reduces a person's risk for heart attack, colon cancer, diabetes, and high blood pressure. Physical inactivity is a leading contributor to disease and disability, accounting for 22% of colon cancer, 18% of osteoporotic fractures, and 12% of diabetes and hypertension.
- Increased consumption of fruits and vegetables helps reduce the risk for heart disease and certain cancers.

**If we are serious about improving the health and quality of life of Americans AND keeping our health care budget under control . . .**

**. . . we cannot afford to ignore the power of prevention.**



## A VISION FOR PREVENTION

Despite the evidence that prevention works, the focus in our health care system over the past century has not been on prevention of chronic disease, but on treatment of short-term, acute health problems. As a nation, we have emphasized expensive cures for disease rather than cost-effective prevention. In addition, our health care system is not designed to meet the needs of people with chronic illnesses.

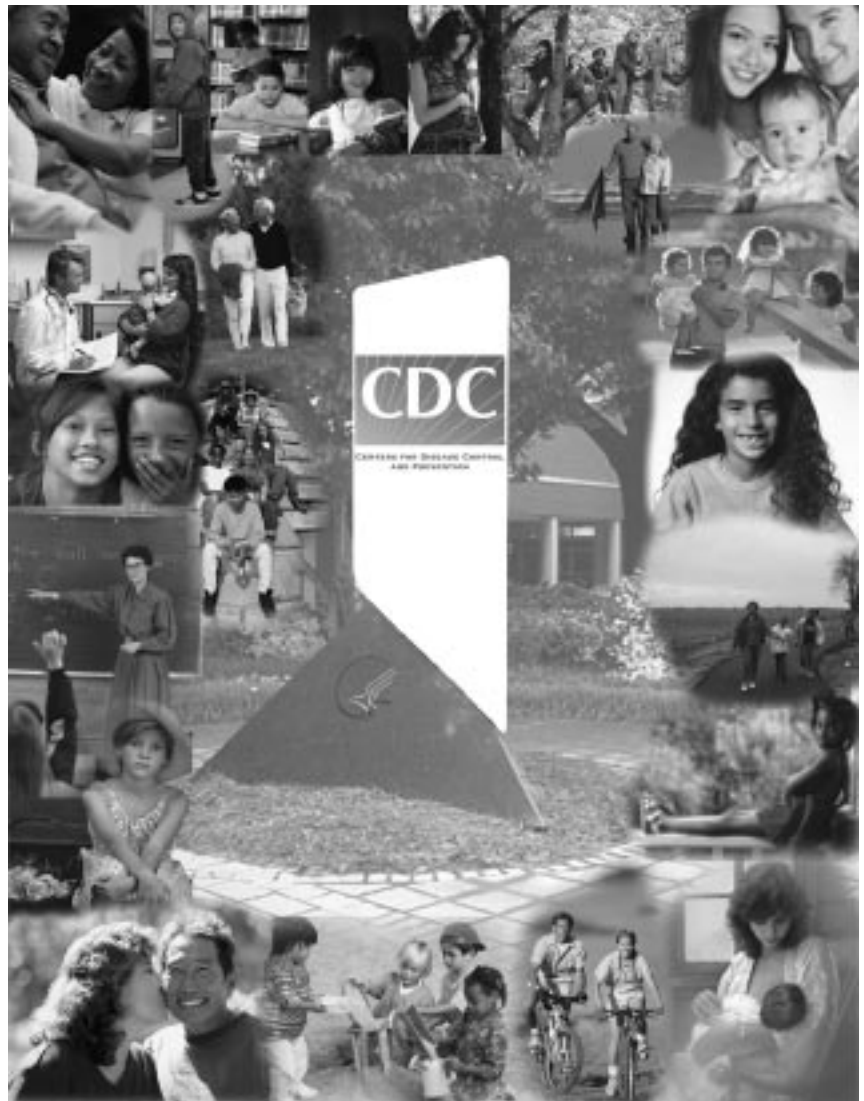
At the heart of our system is the traditional physician-patient interaction. While effective, these interactions occur infrequently at best and typically last no longer than 30 minutes every several months. Whether sick or well, a person spends far more time making independent decisions that affect his or her health—outside of the physician's office—and does so with minimal training or information. This is particularly true for 40.5 million uninsured Americans under the age of 65 who have very limited access to health care services.

With a community-based public health infrastructure that embraces prevention as a priority, we can become a healthier nation. Many Americans could enjoy 5–7 additional years of healthy life and avoid the costs associated with chronic disease if we improve access to quality health care services, emphasize healthy behavior, and focus on broad policies and strategies that offer the greatest good for the greatest number of people at the lowest cost.

As the nation's premier public health agency, the Centers for Disease Control and Prevention (CDC) has a vision of a nation in which all people lead long, healthy, satisfying lives in an increasingly diverse society. To realize this vision, we must harness the collective capacity and energy of families, communities, health care professionals, voluntary and professional organizations, the private sector, other governmental agencies, and academic institutions. CDC provides the needed leadership and coordination for the national chronic disease prevention agenda.

The function of protecting and developing health must rank even above that of restoring it when it is impaired.

—*Hippocrates*



# THE CALL TO ACTION: OUR NATIONAL CHRONIC DISEASE PREVENTION AGENDA

## **Promote health and wellness programs at schools and work sites and in faith- and community-based settings.**

Developing chronic diseases is not an inevitable consequence of aging; in many cases, their origins are grounded in health-damaging behaviors practiced by people every day for much of their lives. Evidence indicates that with education and social support, people can and will take charge of their health. The national agenda must call for programs that focus on individual responsibility and behavior change, such as the following:

- School health programs that provide environments and instruction that promote healthy eating, daily physical activity, and the avoidance of tobacco, alcohol, and illicit drugs.
- Smoking cessation strategies, such as improved access to quit lines, improved insurance coverage of smoking cessation services, and greater involvement of health providers and health care systems in the routine delivery of cessation advice and services to patients who want to quit smoking.
- Physical activity strategies such as motivational signs and reminders placed near elevators and escalators encouraging the use of stairs for health benefits or weight loss.
- Faith- and community-based programs that bring together community health advisors, nurses, and church representatives to support, encourage, and help people to obtain cancer-screening services and to navigate the health care system.

## **Enact policies that promote healthy environments.**

Policy and environmental changes can affect large segments of the population simultaneously. Adopting healthy behaviors is much easier if we establish supportive community norms and health policies. The national agenda must call for proven health promotion measures such as

- Safe walking and cycling trails.
- Low-fat/high-fruit-and-vegetable menu selections in restaurants, schools, and employee cafeterias.
- Requirements for daily physical education classes in schools.
- Smoke-free policies in workplaces and public areas.
- Universal availability of 911 emergency services for stroke and heart attack care.

## **Ensure access to a full range of quality health services.**

Physicians and other health care practitioners play a critical role in providing chronic disease screening and early detection services. They are also uniquely positioned to influence patients to adopt healthy behaviors that help prevent chronic disease.

The national agenda must call for

- Improved access to effective screening and diagnostic tools for breast, cervical, and colorectal

cancers; diabetes; high blood pressure; and high cholesterol.

- Better training and education of health care professionals to close the gap in time between discovering effective prevention tools and strategies and applying these tools in medical practice.
- Public and private health insurance programs that provide appropriate chronic disease prevention, screening, and treatment services.
- Training to empower patients to manage their chronic conditions effectively.

### Implement programs that focus on eliminating racial, ethnic, and socioeconomic-based health disparities.

Of utmost importance is a constant vigilance to reduce health disparities among racial and ethnic groups. These disparities are reflected in differences in length of life; rates of disease, disability, and death; severity of disease; and access to treatment.

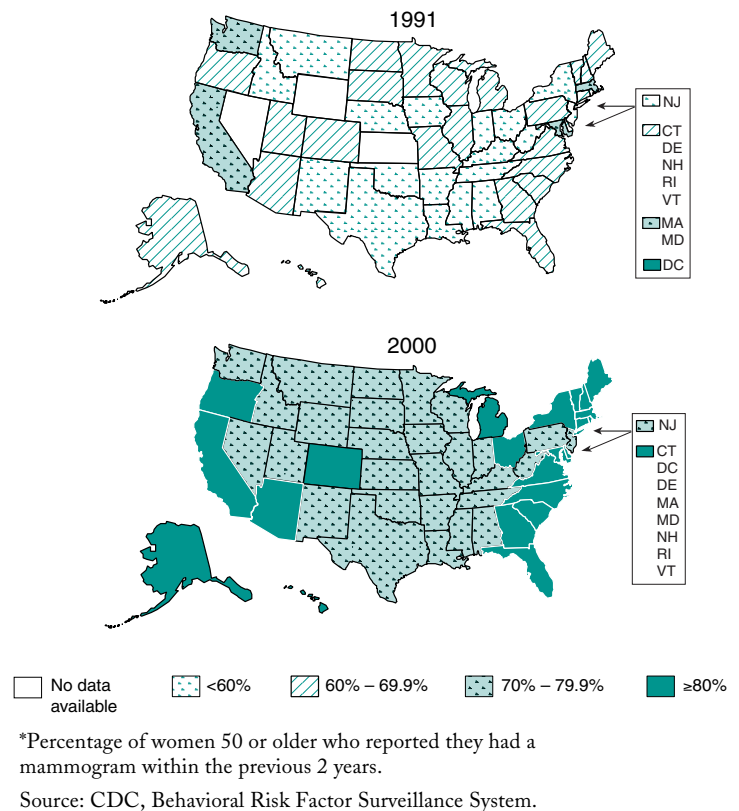
- In 1999, death rates from heart disease were 29% higher and death rates from stroke were 40% higher among African American adults than among white adults.
- American Indians and Alaska Natives are 2.6 times more likely, African Americans are 2 times more likely, and Hispanics are 1.9 times more likely to have diagnosed diabetes than whites.
- African American women are more likely to die of breast cancer than are women of any other racial or ethnic group.
- Nearly half of African American women are classified as obese.

Prevention research is needed to identify the causes of health disparities and the best ways to provide access to high-quality preventive care and clinical services. Effective programs will require new and innovative partnerships among federal, state, local, and tribal governments and communities.

### Educate the public effectively about their health.

Scientific evidence indicates the public listens to and acts on clear, compelling health information. We must use communication strategies to inform and influence individual and community decisions on health. Scientific approaches to social marketing, health education, and consumer research must be applied to public health initiatives—everything from simple brochures to public service announcements to comprehensive media campaigns. We must market health effectively, just as corporations market their products and images.

**Figure 7. More Women at Risk Are Having Mammograms\***



## MEETING THE CHALLENGE OF CHRONIC DISEASE

At the turn of the 20<sup>th</sup> century, the major causes of illness and death were infectious diseases such as pneumonia, influenza, and tuberculosis. Thanks to vaccines, environmental and social improvements, and technological developments, these diseases pose a much smaller threat to the health of our nation.

This same accomplishment is possible for chronic disease. As a nation, we have the capability and the expertise to meet the unique challenges of the leading causes of death, disease, and disability. Now we need a concerted, focused effort to apply what we know about prevention and treatment.

The national chronic disease prevention agenda is clear. With the collective will for its implementation, CDC and a host of public and private organizations joined in spirit and vision can lead the nation to a day when chronic disease is yet another chapter in public health history.

Statistics in this document are the most recent available at the time of printing. More up-to-date statistics may be available in the on-line version of this document at <http://www.cdc.gov/nccdphp>.