

Public Health Advances Through Chronic Disease Prevention: 1986–2006



**NATIONAL ASSOCIATION OF
CHRONIC DISEASE DIRECTORS**

Promoting Health. Preventing Disease.

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Twenty years ago, public health practitioners were pushing for recognition of chronic disease as a major public health problem needing specific program attention.

Today, the impact of chronic diseases on the public health of this nation is no longer in doubt. More importantly, every state can declare success in reducing deaths and disability from serious chronic diseases.

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◆ **Chronic disease is now recognized as a major public health issue.**

Every state has both a diabetes program and a breast and cervical cancer program, and most states have programs targeting other chronic diseases. The National Association of Chronic Disease Directors (NACDD) is a well-established resource for policy makers and an effective voice for the importance of chronic disease prevention. Its councils and interest groups represent public health practice in aging, arthritis, cancer, diabetes, heart disease and stroke, osteoporosis, school health and women's health. NACDD's recent development of competencies for chronic disease public health practice will help supply a capable workforce for the *next* 20 years and beyond.

◆ **Leadership and important partnerships facilitated change.**

The Centers for Disease Control and Prevention (CDC), through the leadership, funding, and program support provided by the National Center for Chronic Disease Prevention and Health Promotion, has been central to the progress made in the past 2 decades. Growing partnerships with nonprofit organizations—such as the American Cancer Society, American Heart Association, American Diabetes Association, AARP, YMCA of the USA, and many others—are increasing the reach of state and local programs, as well as the demand for more comprehensive programs in all areas of chronic disease prevention.

◆ **The practice of public health has evolved in ways undreamed of 20 years ago.**

Through the combined efforts of national, state, and local agencies as well as public and private organizations and institutions, the field of chronic disease prevention and control has come of age. Some of the most significant changes in practice include

- Development of leadership to address chronic disease as a major health issue.
 - Widespread use of community-based planning.
 - Forging linkages between public health and clinical practice.
 - Recognition of the impact of policy and environmental change.
 - Increased availability and use of state-based surveillance data.
 - Expansion and strengthening of community-based research and practice.
 - Recognition of the value of evidence-based public health programs.
 - Greater emphasis on accountability and measurement.
 - Recognition of quality-of-life measures as health outcomes.
 - Successful use of marketing approaches to promote healthy behaviors.
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“...our wish is that this list provides the basis for lively debate and renewed efforts to focus attention on the nation’s leading causes of death and disability.”

To mark its 20th anniversary, the National Association of Chronic Disease Directors (NACDD) is recognizing important achievements in chronic disease prevention and control during the past 2 decades. We asked NACDD members, CDC staff, and other partners to give us their ideas on which achievements they considered to be noteworthy. Not surprisingly, we received nearly 400 nominations! A work group representing NACDD and CDC reviewed all the suggestions and narrowed the field to 25. We then asked the same audience to vote for the top 10 accomplishments in the field.

The process of selecting these achievements and seeing the results was both fun and frustrating. We hope that readers find themselves in agreement with most of the choices—if not, our wish is that this list provides the basis for lively debate and renewed efforts to focus attention on the nation’s leading causes of death and disability.

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The Ten Most Important Advances in Chronic Disease Prevention and Control

A Michigan Success Story: Michigan’s Breast & Cervical Cancer Program was under-utilized—only about 15% of eligible women had ever been served. This prompted the Michigan Department of Community Health and the American Cancer Society to develop a public service campaign, Free2Be, that resulted in dramatic increases in the volume of calls to the American Cancer Society’s toll-free call center. Overall, the campaign generated 2,850 calls and resulted in the enrollment of more than 400 new participants in the program. These women now have access to potentially life-saving breast and cervical cancer screening, detection, and treatment services.

1 Reduction in Breast and Cervical Cancer Mortality

Since 1986, breast cancer mortality has decreased by 23% and cervical cancer mortality by 34%. A key factor in these improvements is the National Breast and Cervical Cancer Early Detection Program. Since 1991, states, territories, and tribes have provided more than 6.9 million screening examinations to more than 2.9 million women and diagnosed more than 29,000 breast cancers, 94,000 precursor cervical lesions, and 1,800 cervical cancers. Inspection and quality control for mammography and Medicaid coverage for women diagnosed with breast or cervical cancer have also contributed to significant increases in mammography rates and early stage diagnosis.

2 Continued Reduction in Cardiovascular Disease Mortality

Since the 1970s, death rates for cardiovascular disease have been cut by more than half. This improvement can be attributed to primary prevention activities addressing tobacco use, physical activity, and nutrition; secondary prevention activities addressing blood pressure and lipid control; and tertiary prevention improvements in clinical management, emergency medical treatment, recognition of warning signs, and use of Automatic External Defibrillators. State-based programs promote cardiovascular health in a variety of settings, including health care clinics, work sites, schools, and community venues.

3 Reduction in Tobacco Use Among Adults and in the Onset of Tobacco Use by Adolescents

Cigarette smoking prevalence among adults has declined by more than 50% over the past decade, while the percentage of high school students who smoke has declined by more than one-third. State and national programs and policies have resulted in changes in social norms to prevent initiation of tobacco use, promote tobacco use cessation, and reduce exposure to environmental tobacco smoke. The “Joe Camel” epidemic among kids has been reversed, and more than 35% of the population is now protected by clean air regulations. Since the first Surgeon General's report on the health risks of smoking, millions of smoking-related deaths have been prevented.

4 Reducing the Progression and Complications of Type 2 Diabetes

Between 1996 and 2002, despite increases in the overall incidence of diabetes, age-adjusted incidence rates of end-stage renal disease decreased about 25%, and age-adjusted hospitalization rates for lower extremity amputations declined about 30%. Many improvements have been made in the quality of diabetes care: in the control of cholesterol and blood glucose; in the use of aspirin and influenza and pneumococcal vaccines; and in the provision of regular exams of eyes, feet, and teeth. Effective interventions are available to prevent diabetes complications, and quality of care has been improved for many people with diagnosed diabetes.

5 Reduction in Tooth Decay, Gum Disease and Tooth Loss

In 1974 a 17-year-old had, on average, more than six teeth affected by tooth decay; in 2004, that number was less than two. Every dollar spent on community water fluoridation saves from \$7 to \$42 in treatment costs, depending on the size of the community. Savings are greatest in large communities. At least 60% of the U.S. population on public water systems have received fluoridated water since 1990, translating to savings in dental treatment costs of more than \$25.7 billion in just the past decade. School-based dental sealant programs are cost saving when delivered to populations at high risk for tooth decay, such as children in low-income households.

The next five advancements should be considered emerging issues in chronic disease prevention and control. These represent areas where important initial steps have been taken, but additional work is needed to achieve significant health outcomes.

6 Obesity as a Public Health Problem

In the past 30 years, the prevalence of overweight and obesity has increased sharply for both adults and children. Since 1976, the prevalence of obesity among adults aged 20–74 years increased from 15% to 33%. Among young people, the prevalence of overweight increased from 5% to 14% for those aged 2–5 years, 7% to 19% for those aged 6–11 years, and 5% to 17% for those aged 12–19 years. These increasing rates raise concern because being overweight or obese increases the risk for many diseases and adverse health conditions.

A Georgia Success Story: The Georgia Stroke and Heart Attack Prevention Program provides monitoring, health assessments, lifestyle counseling, and treatment to low-income patients with high blood pressure. Prescribed medicines are provided at low or no cost. Nurse case managers monitor blood pressure, encourage regular clinic visits, and work with patients to help them take their medicine regularly. Participants now have better blood pressure control and lower overall medical expenses; among those who require treatment, their treatment costs are less than for non-participants. Heart attack and stroke rates have been greatly reduced.

A Maine Success Story: The Partnership for a Tobacco-Free Maine, a program of the Maine Center for Disease Control and Prevention, guides state tobacco initiatives including funding for community and school initiatives to reduce tobacco use and tobacco-related disease, statewide counter-marketing campaigns, statewide tobacco treatment services including the Maine Tobacco HelpLine, enforcement of tobacco laws that reduce young people's access to tobacco products and protect the public from secondhand smoke, and other evidence-based tobacco prevention and control programs. These efforts contributed to a 60% decline in the smoking rate among high school students in Maine between 1979 and 2004.

A Missouri Success Story: *The Missouri Diabetes Prevention and Control program supports the Missouri Diabetes Collaborative, whose members include federally qualified health centers, hospitals, and private physician practices. Collaborative members form practice teams to improve their care of patients with diabetes using a proven model to manage disease. Fourteen measures of patient diabetes care in the group of collaborative patients have improved, and more people in the high-risk population receive better diabetes care, reducing their risk of death and serious complications.*

An Alaska Success Story: *By supporting and managing state water fluoridation programs, the Alaska Oral Health Program applies the evidence that community water fluoridation can prevent or even reverse tooth decay. When the fluoridation program of the community of Craig was threatened, professionals worked together to address the fears of the community and save the program, highlighting the value of collaboration in maintaining essential disease prevention programs.*

7 Importance of Physical Activity Across the Lifespan

Engaging in regular physical activity substantially reduces the risk of dying of coronary heart disease and decreases the risks for stroke, colon cancer, diabetes, and high blood pressure. It also helps control weight; contributes to healthy bones, muscles, and joints; reduces falls among older adults; helps relieve the pain of arthritis; reduces symptoms of anxiety and depression; and is associated with fewer hospitalizations and physician visits and less need for medications. In short, people of all ages benefit from participating in regular moderate-intensity physical activity, such as 30 minutes of brisk walking five or more times a week.

8 Value of Self-Management of Chronic Diseases

There is growing evidence that self-care is a critical factor in the control of diseases such as diabetes, arthritis, and asthma. Chronic disease self-management programs can help participants increase self-efficacy and improve health-related behaviors, appropriate health care utilization, and use of effective coping strategies. By using a variety of approaches to help people develop self-management skills, better health status has been observed in many different populations.

9 Role That Infections Play in Developing Chronic Disease:

Some diseases once thought to be primarily related to lifestyle factors are now known to be caused by micro-organisms. In recent years, one chronic disease after another has been linked, in some cases definitively, to an infectious etiology (e.g., peptic ulcer disease with *Helicobacter pylori*, cervical cancer with human papilloma virus). Evidence implicating microorganisms as etiologic agents of chronic diseases continues to mount, opening the door to vaccine prevention strategies, such as use of the new HPV vaccine.

10 Potential for Reductions in Health Disparities

For too many racial and ethnic minorities in the United States, good health is elusive. Their access to health promotion and prevention programs and appropriate health care is often relative to their economic status, sex, education, disability, geographic location, or sexual orientation. CDC's REACH 2010 Program (Racial and Ethnic Approaches to Community Health) is an important example of public health efforts to eliminate racial and ethnic health disparities. In more than 40 communities across the nation, REACH supports innovative programs that have shown great promise for eliminating health disparities.

Where Do We Go Next?

In spite of significant progress in many areas, a serious disconnect remains between chronic disease funding and chronic disease burden. Reducing the burden of chronic disease must come from population-based public health strategies, but at present less than 3% of health funding is directed to prevention efforts. The bias against prevention is so pervasive, so embedded, so intractable, that many people, including policy makers, fail to recognize that the development of most chronic illnesses is almost entirely outside the purview of clinical care.

Chronic disease control today is similar to where the nation was a century ago with regard to basic sanitation. We know a great deal about what to do and why, but we have not made the overall commitment to actually carry it out. Only with focused efforts to prevent chronic diseases, delay their onset, and slow their progression will we see people's life spans continue to lengthen, with better quality of life for all.

We must put our priorities where the evidence offers a reasonable expectation of achieving widespread success, where the burden of disease is great, and where disparities across populations are substantial. State and local programs must leverage their limited resources and coordinate the efforts of all groups with a stake in chronic disease prevention and control.

With a committed and focused effort, the next 20 years can bring coordinated, integrated, and comprehensive chronic disease prevention and control to all people living in all states and territories. However, if we are to make further improve-ments in health status and real progress toward completely eliminating health disparities, the following efforts will be required:

- ◆ Improving state and local policies (including school, workplace, and community settings) that support healthy living and reordering of national and state policies to pay first for prevention.
 - ◆ Establishing primary, secondary, and tertiary prevention programs that are actively engaged with managed care organizations and other providers in addressing the quality of care and improving the quality of life for people living with chronic diseases.
 - ◆ Expanding access to care for uninsured and underinsured persons, especially those who have or are at risk of developing chronic diseases.
 - ◆ Forming stronger and more diverse partnerships, including collaborations with nontraditional partners such as the media and transportation and urban planning agencies.
 - ◆ Building a solid infrastructure for chronic disease prevention and control at the national, state, and local levels.
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