PREVENTION WORKS:

CDC Strategies for a Heart-Healthy and Stroke-Free America

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

INTRODUCTION

"Prevention Works: CDC Strategies for a Heart-Healthy and Stroke-Free America" provides a snapshot of heart disease and stroke prevention at the Centers for Disease Control and Prevention. It also provides information on the health and economic costs of chronic diseases to our nation and outlines CDC's prevention strategies.

CDC's Heart Disease and Stroke Prevention Program, with annual appropriations of approximately $45 million, is CDC's focal point for heart disease and stroke prevention. This booklet describes the central strategies of that program, which include a focus on controlling high blood pressure and cholesterol, recognizing signs and symptoms of heart attack and stroke, improving emergency response, improving quality of care, and eliminating health disparities among population groups. Heart disease and stroke outcomes are also related to healthy eating, physical activity, and tobacco use, as well as diabetes and obesity. Therefore, the Heart Disease and Stroke Prevention Program collaborates across CDC to coordinate units and programs that specifically address these issues to improve overall cardiovascular health in the United States.

Please visit the CDC Website on heart disease and stroke prevention at www.cdc.gov/cvh. Among the items included are the following:

- Summary of the states' heart disease and stroke prevention programs.
- Data by county.
- Other publications on cardiovascular health.
- Fact sheets.
- *A Public Health Action Plan to Prevent Heart Disease and Stroke.*

HEALTH AND ECONOMIC COSTS OF HEART DISEASE AND STROKE

A NATIONAL TRAGEDY

- In the United States, heart disease and stroke are the 1st and 3rd leading killers. More than 100 people die of these diseases every hour.
- 1 in 5 adults have some form of cardiovascular disease (CVD).
- CVD is the leading cause of health-related disparities.

DISABLING

- Heart disease and stroke are among the leading causes of disability.
- Heart attack: 66% of victims never fully recover.
- Stroke: Many survivors cannot perform daily tasks; 20% will require institutional care.

COSTLY

- $394 billion was spent in 2005 ($242 billion in health care costs; $152 billion in lost productivity).
- Medicare: CVD hospitalizations cost $26 billion annually.
- Heart disease is the leading hospital diagnosis.

GROWING

- 90% of middle-aged Americans will develop high blood pressure in their lifetime; 70% who have it now do not have it controlled.
- Unless prevention and control initiatives are escalated, there will be an increase in Americans who die of heart disease and stroke or a sharp rise in the number of survivors with dependency.

Priorities of CDC's Heart Disease and Stroke Prevention Program

CONTROL HIGH BLOOD PRESSURE

CONTROL HIGH CHOLESTEROL

KNOW SIGNS AND SYMPTOMS; CALL 9-1-1

IMPROVE EMERGENCY RESPONSE

IMPROVE QUALITY OF CARE

ELIMINATE DISPARITIES

Prevention and disease control can reduce heart attacks and strokes, deaths from these diseases, and the disability suffered by heart disease and stroke survivors.

PREVENTION OPPORTUNITIES

CONTROL HIGH BLOOD PRESSURE

- A 12- to 13-point reduction in systolic blood pressure can reduce heart attacks 21%, strokes 37%, and total cardiovascular deaths 25%.
- 65 million people have high blood pressure; an additional 59 million are prehypertensive.
- 70% of people with high blood pressure do not have it under control.

CONTROL HIGH CHOLESTEROL

- A 10% decrease in total cholesterol levels may reduce the incidence of coronary heart disease by approximately 30%.
- In 2002, nearly 107 million people were told they had total blood cholesterol levels of 200 mg/dl or higher.
- Over 80% of people with high blood cholesterol do not have it under control.

KNOW SIGNS AND SYMPTOMS; CALL 9-1-1

- More than half of Americans don't know the symptoms!
- Stroke: Only 17% of the public recognizes the major warning signs of a stroke and knows to call 9-1-1.
- Heart Attack: Only 11% of the public recognizes the major signs and symptoms of a heart attack and knows to call 9-1-1.

IMPROVE EMERGENCY RESPONSE

- Only 3% to 10% of eligible stroke victims get the emergency thrombolytic therapy that can lead to recovery.
- 47% of heart attack deaths occur before an ambulance arrives.
- 48% of stroke deaths occur before hospitalization.

IMPROVE QUALITY OF CARE

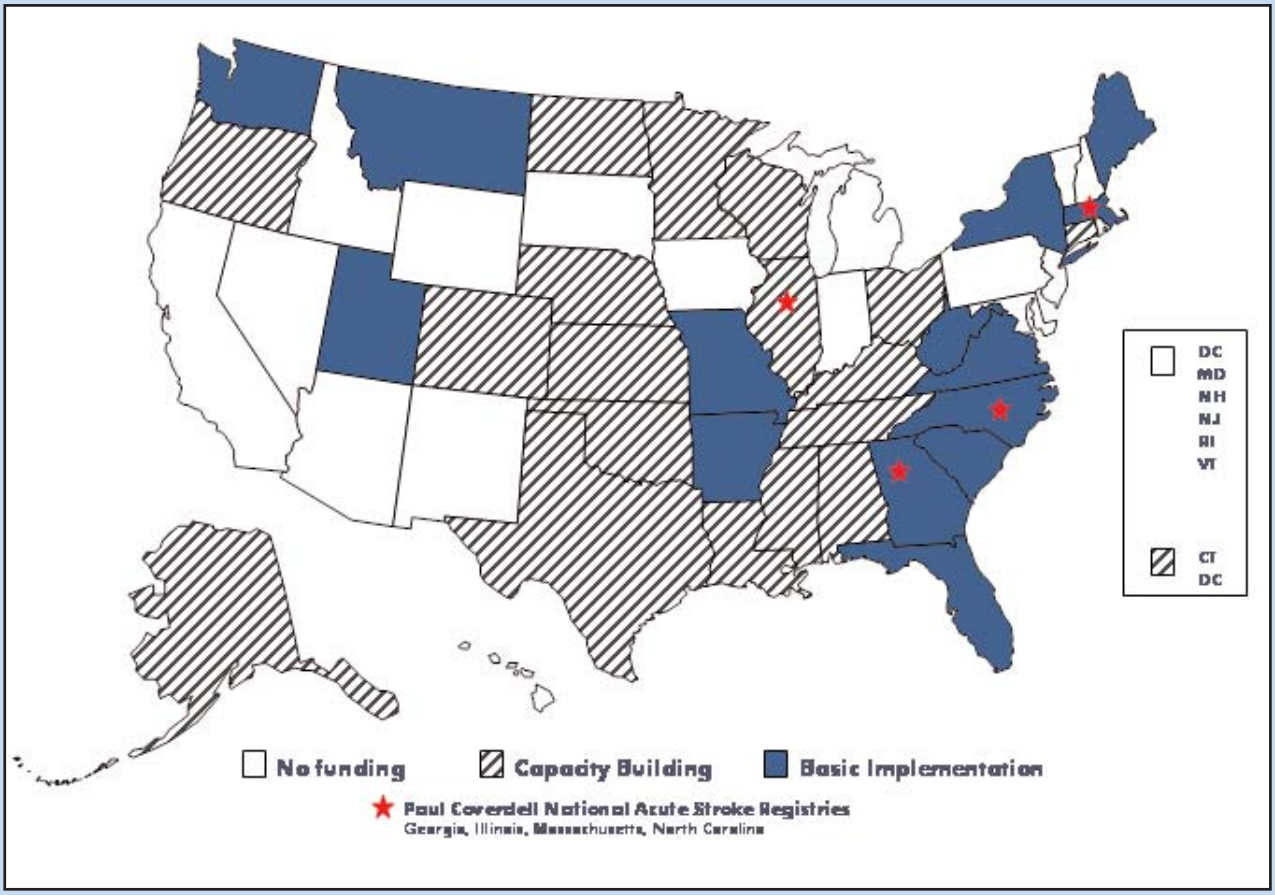
- Prevent first and second events; control risk factors and diseases.
- Expand the use of guidelines, reminder systems, preventive care, the chronic care model, patient databases, and behavioral counseling.

ELIMINATE DISPARITIES

- 27% of the black–white life expectancy gap is due to heart disease, and 8% is due to stroke.
- Only 18% of Hispanics have their high blood pressure under control, compared with 30% of whites.
- In 2002, age-adjusted death rates for heart disease were 30% higher for African Americans than for whites, and stroke death rates were 41% higher.

CDC'S NATIONAL REACH

Fiscal Year 2005 Funding for State Heart Disease and Stroke Prevention Programs



CDC FUNDS HEART DISEASE AND STROKE PREVENTION PROGRAMS IN STATE HEALTH DEPARTMENTS and provides guidance for these programs. States are funded at two levels: capacity building (approximately $350,000 per state) and basic implementation (approximately $1.25 million per state). In fiscal year 2005, CDC funded 32 states and the District of Columbia (14 for basic implementation and 19 for capacity building).

CDC FUNDS REGIONAL STROKE NETWORKS to increase stroke awareness and prevention activities across state boundaries, and enhance prevention efforts of state heart disease and stroke prevention programs. These networks are Tri-State (North Carolina lead; others are Georgia and South Carolina), Great Lakes (Illinois lead; others are Indiana, Michigan, Minnesota, Ohio, and Wisconsin), and Delta States (Alabama lead; others are Arkansas, Louisiana, Mississippi, and Tennessee).

CDC FUNDS THE PAUL COVERDELL NATIONAL ACUTE STROKE REGISTRIES in Georgia, Illinois, North Carolina and Massachusetts (see page 8).

TAKING ACTION:

Examples from State Heart Disease and Stroke Prevention Programs

WISCONSIN: 21% INCREASE IN BLOOD PRESSURE CONTROL

Wisconsin worked with 20 health plans to collect Health Plan Employer Data and Information Set (HEDIS) measures related to cardiovascular health. Based on these data, health plans made quality improvements in blood pressure control. Among participating health plans, the percentage of patients who had their high blood pressure controlled increased from 48% to 58%, a 21% relative increase.

SOUTH CAROLINA: TAKING LOCAL ACTION IN AFRICAN AMERICAN COMMUNITIES

South Carolina worked in collaboration with local community partners to promote heart health in African American communities. Several faith organizations implemented specific policy and environmental strategies appropriate to their needs that address high blood pressure, high cholesterol, and tobacco use prevention.

MONTANA: IMPROVING EMERGENCY RESPONSE TO STROKES

When a stroke happens, calling 9-1-1 in time to prevent disability or death depends on people knowing the signs of stroke. Montana has launched a stroke signs public education campaign in the Great Falls area. Montana is also working with local hospital and health systems, a stroke task force, and local fire and ambulance services to improve emergency medical services and hospital response to stroke. Improvements that get an ischemic stroke sufferer to thrombolytic therapy within 3 hours can mean the difference between recovery and long-term disability from stroke.

NEW YORK: BUSINESSES PROVIDE EMPLOYEES WITH HEART HEALTHY OPTIONS

New York assesses work sites using a tool called heart check and helps employers establish work site interventions that promote employee heart health. Between 1995 and 2004, approximately 639 participating work sites increased policy and environmental supports for heart-health. On average work sites experienced a 62% increase in these supports. Many of these work sites are now making blood pressure screening available, offering low-fat food choices, and instituting policies for smoke-free workplaces.

CARDIOVASCULAR DISEASE COLLABORATIVE: STATE HEART DISEASE AND STROKE PREVENTION PROGRAMS BRING STATE-OF-THE-ART TECHNIQUES IN DISEASE MANAGEMENT TO THOSE MOST IN NEED

Approximately one-half of the 33 CDC-funded state heart disease and stroke prevention programs participate in the CVD Collaborative, through which they support federally qualified health centers (FQHCs) in their state in bringing state-of-the-art techniques in disease management and other public health expertise to those most in need. Techniques such as patient data management systems and training to improve blood pressure measurement have produced impressive results. For example, among participating health centers during an initial 9-month period, the percentage of people with hypertension who have their blood pressure controlled increased by 5 percentage points, and the number of patients with coronary artery disease on aspirin or other antithrombotic agents increased by 39 percentage points. The CVD Collaborative, which builds on a similar diabetes model, is a collaboration of Health Resources and Services Administration, CDC, the Agency for Health Care Research and Quality, state CVD programs, and FQHCs.

HEALTH CARE SETTING

- Promote policy, environmental, and system strategies to improve quality of care. For example, promote the chronic care model and the adoption of evidence-based guidelines in hospitals (e.g., Get with the Guidelines [American Heart Association], Guidelines Applied to Practice [American College of Cardiology]).
- Establish policies to treat stroke as an emergency in hospitals, to provide immediate diagnostic evaluation and treatment within 3 hours, and to have a neurologist on call at all times.
- Provide education and public awareness on use of 9-1-1, emergency medical services, signs and symptoms of heart attack and stroke.

WORK SITE

- Provide health care coverage for employees and their families that includes primary and secondary heart disease and stroke prevention services as well as rehabilitation services.
- Promote adequate cost coverage/reimbursement for prescription drugs required for primary and secondary prevention of heart disease and stroke.
- Provide work-site detection and follow-up services with employees for control of blood pressure and cholesterol.
- Ensure employee training and education on signs and symptoms of heart attack and stroke, cardiopulmonary resuscitation (CPR),and automated emergency defibrillators.
- Assess policies and environmental supports for heart-healthy work sites and provide education on strategies to enhance environments for heart health.

COMMUNITY

- Raise awareness of signs and symptoms of heart attack and stroke through educational initiatives.
- Promote enhanced 9-1-1 services statewide.
- Promote emergency medical service training and protocols related to heart attack and stroke.
- Promote the use of community guidelines.
- Promote policies, system changes, and educational opportunities related to blood pressure and cholesterol management and the importance of heart health.

SCHOOL

- Raise awareness of signs and symptoms of heart attack and stroke, and the importance of calling 9-1-1; implement awareness interventions in the schools, and with related groups such as parent teacher organizations.
- Work with Coordinated School Health Programs to implement curricula, consistent with state education standards, to increase awareness among students regarding signs and symptoms of heart attack and stroke and the importance of calling 9-1-1.
- Promote school-based CPR training for faculty, staff, and students through after-school programs and extra credit opportunities.
- Implement policy- and systems-change interventions to address employees' access to care and management of blood pressure and cholesterol.
- Approach schools as work sites (see Work Site above).

STANDARDIZATION OF LIPID MEASUREMENTS

CDC's Lipid Reference Laboratory ensures that all lipid and lipoprotein measurements are reliable by standardizing measurements in laboratories across the nation. Standardization is provided to laboratories participating in longitudinal studies and clinical trials, clinical and hospital laboratories, manufacturers of diagnostic products, and state public health laboratories.

BUSINESS TOOL KIT

CDC is developing a Cardiovascular Health and Business Tool Kit to help employers assess which health benefits and work site health promotion services can improve cardiovascular health and reduce disease, disability, and costs associated with heart disease and stroke. This tool kit will be available in late 2005.

SOURCEBOOK FOR COMMUNITY HEALTH WORKERS

The *Community Health Workers' Heart Disease and Stroke Sourcebook* is a resource for training community health workers (CHWs) who work to increase public knowledge about heart disease and stroke and help eliminate health disparities. Topics include high blood pressure and cholesterol, compliance with treatment regimens (including medicines), communicating with doctors, diabetes, atrial fibrillation, coronary heart disease, heart attack, stroke, heart failure, and the CHW's role in supporting life-style changes and patient self-care. The *Sourcebook* is being developed by the U.S. Department of Health and Human Services (including CDC, the National Institutes of Health, the Indian Health Service, and the Office of Disease Prevention and Health Promotion), and the American Heart Association/American Stroke Association. It will be available in late 2005.

COMMUNICATION TOOL KITS

CDC provides two heart disease and stroke prevention communication guides. *CDCynergy 2001—Cardiovascular Health Edition* is a communication planning tool in CD-ROM format. To request a copy, e-mail CDC at ccdinfo@cdc.gov. CDC also provides a *Communication Guide* for educating key constituencies about how to make changes in communities, health care settings, work sites, and schools to promote cardiovascular health, and how to increase public awareness of signs and symptoms of a heart attack and stroke. This guide is available at www.cdc.gov/cvh.

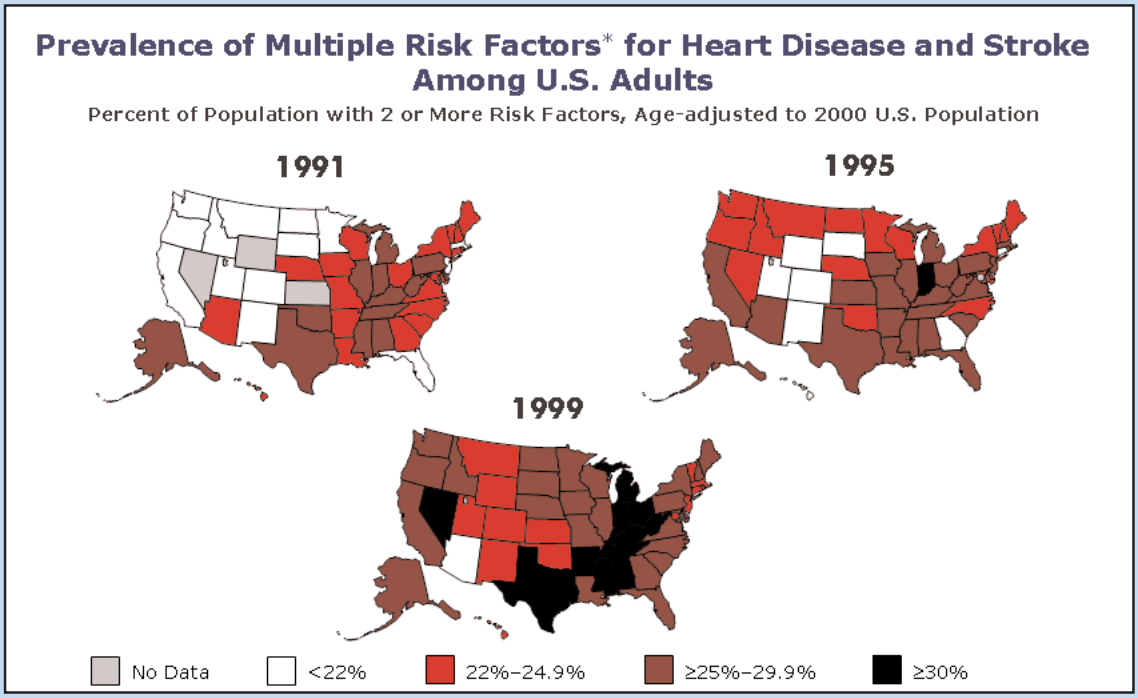
CDC PROVIDES DATA FOR DECISION-MAKING

CDC'S PAUL COVERDELL NATIONAL ACUTE STROKE REGISTRY MEASURES AND IMPROVES QUALITY OF STROKE CARE IN HOSPITALS

Four states (Georgia, Illinois, North Carolina and Massachusetts) are funded to implement state-based stroke registries. CDC's Paul Coverdell National Acute Stroke Registry addresses this problem by improving and measuring quality of care for stroke victims in hospitals. Stroke affects an estimated 5.4 million Americans and their families and is a leading cause of long-term disability in the United States. Although thrombotic medications applied within 3 hours of a stroke can improve outcomes of ischemic stroke and can sometimes mean the difference between recovery and long-term disability, only about 3% to 8% of eligible patients receive this therapy.

CDC TRACKS STATE AND NATIONAL TRENDS IN CARDIOVASCULAR HEALTH

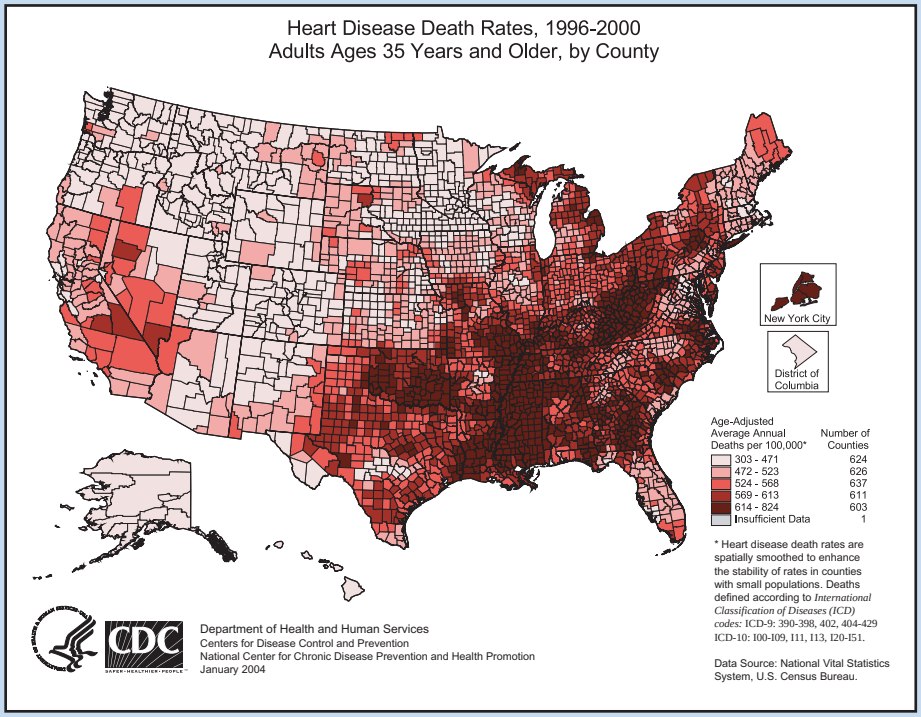
CDC identifies and tracks trends in heart disease and stroke principally using data from the National Health and Nutrition Examination Survey (NHANES) and Behavioral Risk Factor Surveillance System (BRFSS), a unique data system that provides state-specific data. For example, using BRFSS data, CDC recently found that the prevalence of multiple risk factors for cardiovascular disease among adults in 36 states had increased 10% or more from 1991 to 1999. The increase was found for both men and women and for all groups defined by race, ethnicity, age, or educational level.

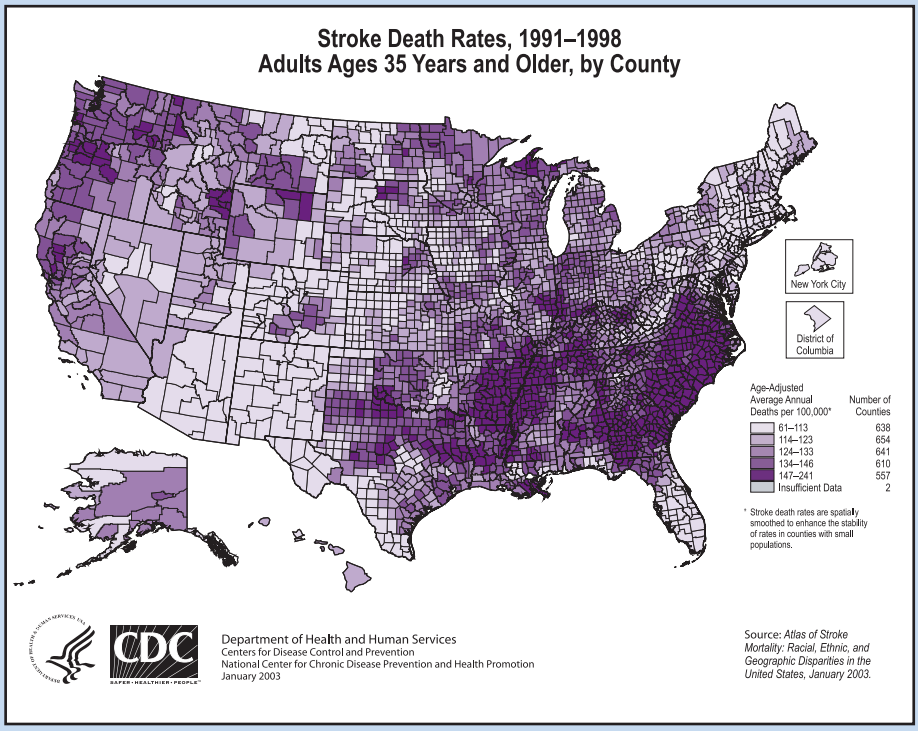


Risk factors include reported high blood pressure, high blood cholesterol, current smoking, obesity and diabetes. Although physical inactivity is an important factor, data were not available for each year and, thus, were not included.
Source: Greenlund et al. *Archive Intern Med* 2004; 164:181-8

CDC'S HEART DISEASE AND STROKE ATLASES PROVIDE LOCAL DATA AND IDENTIFY DISPARITIES

To address the serious racial, ethnic, and geographic disparities in heart disease and stroke mortality, CDC has published a series of atlases about heart disease and stroke. The atlases provide, for the first time, an extensive series of national and state maps that demonstrate local areas of need and show local differences in heart disease and stroke death rates. Data are provided for men and women and for the five largest U.S. racial and ethnic groups (American Indians and Alaska Natives, Asians and Pacific Islanders, blacks, Hispanics, and whites.) County-specific data and state maps are available at http://www.cdc.gov/cvh/maps/index.htm.





DISCOVERING WHAT WORKS – PREVENTION RESEARCH

CDC supports research to develop and evaluate effective tools and strategies for use by prevention programs and others interested in taking action to improve heart disease and stroke outcomes. Current research areas include disparities among population groups, primary and secondary prevention, policy and environmental strategies, emerging risk factors, evaluation, health economics, global issues, and the public health impact of human genome findings.

Spotlight: CDC is developing a Prevention Research Center Network in Cardiovascular Health Intervention Research and Translation to develop and implement prevention research activities that emphasize cardiovascular health promotion.

LEADERSHIP AND COLLABORATION

Cardiovascular Health Across CDC: Because of the inter-relation of heart disease and stroke outcomes with healthy eating, physical activity, and tobacco use, as well as diabetes and obesity, the heart disease and stroke prevention porgram reaches out across CDC to coordinate units and programs at CDC that address these issues and can help contribute to the nation's overall cardiovascular health.

National Collaboration: As CDC works towards achieving a heart-healthy and stroke-free America, the agency also collaborates closely with other federal agencies, states, communities, national voluntary organizations, and private organizations with an interest in heart disease and stroke prevention. Turning the tide to improve heart disease and stroke prevention will require action by many sectors of society. CDC plays a vital role in providing leadership for the prevention steps that our nation must take.

Spotlight: The *Healthy People 2010* Partnership for Heart Disease and Stroke Prevention fosters national achievement of the *Healthy People 2010* goal for heart disease and stroke prevention, which includes the prevention of risk factors, detection and treatment of risk factors, early identification and treatment of heart attacks and strokes, and a reduction in the number of recurrent cardiovascular events. Together, CDC and its partners support and coordinate the partnership. Participants include the American Heart Association/American Stroke Association and six agencies and offices of the U.S. Department of Health and Human Services: CDC; the Centers for Medicare and Medicaid Services; the Indian Health Service; the National Institutes of Health's National Heart, Lung; and Blood Institute and National Institute for Neurological Disorders and Stroke; and the Office of Disease Prevention and Health Promotion.

A PUBLIC HEALTH ACTION PLAN TO PREVENT HEART DISEASE AND STROKE

A PUBLIC HEALTH ACTION PLAN TO PREVENT HEART DISEASE AND STROKE is a groundbreaking national collaboration that will propel national prevention efforts. This plan supports an integrated, comprehensive public health strategy that encompasses two fundamental requirements (effective communication and strategic leadership, partnerships, and organization) and five essential components (taking action, strengthening capacity, evaluating impact, advancing knowledge, and engaging in regional and global partnerships). The National Forum for Heart Disease and Stroke Prevention, representing some 50 national and international organizations, serves as the vehicle for implementing the *Action Plan*. The three lead partners are the American Heart Association/American Stroke Association, the Association of State and Territorial Health Officials, and CDC. CDC provides core support for convening the national forum and implementing the *Action Plan*.

At the Third National Forum in April 2005, participants built on the foundation of previous years by reviewing the plans and accomplishments of the task groups in the seven priority areas. Participants also laid the groundwork for adopting a long-term organizational structure for the National Forum.

EFFECTIVE COMMUNICATION
Establish a media task force.

STRATEGIC LEADERSHIP, PARTNERSHIPS, AND ORGANIZATION
Convene public health agencies at national, state, and local levels.

TAKING ACTION
Commission a group to address priority policies for heart disease and stroke prevention.

STRENGTHENING CAPACITY
Commission a group to define infrastructure and staff competencies required for the full range of CVH activities by state and local health agencies.

EVALUATING IMPACT
Bring key partners and stakeholders together to address gaps in heart disease and stroke-related data systems and convene a planning committee for a “watershed” conference to address the science of evaluating public health programs for policy and environmental change.

ADVANCING KNOWLEDGE
Convene a group to address the prevention research agenda for heart disease and stroke prevention.

ENGAGING IN REGIONAL AND GLOBAL PARTNERSHIPS
Establish a steering group to oversee assessment of U.S. policies directly relevant to global heart disease and stroke prevention.

HEART DISEASE & STROKE

NOTES

Partners

Alliance of Community Health Plans

American Academy of Family Physicians

American Academy of Neurology

American Academy of Pediatrics

American Association for Clinical Chemistry

American Association of Diabetes Educators

American Association of Retired People

American College of Cardiology

American College of Preventive Medicine

American Diabetes Association

American Dietetic Association

American Heart Association/ American Stroke Association

American Legacy Foundation

American Public Health Association

Association of Asian Pacific Community Health Organizations

Association of Black Cardiologists

Association of Public Health Laboratories

Association of Schools of Public Health

Association of State and Territorial Health Officials

Association of State and Territorial Public Health Nutrition Directors

Canadian Public Health Association

Canadian Institutes of Health Research – Institute of Circulatory and Respiratory Health

Cardiovascular Health Council, Chronic Disease Directors, ASTHO

Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services (HHS)

Centers for Medicare and Medicaid Services

Chinese Task Force, AHA

Chronic Disease Directors (CDD), ASTHO

Chronic Disease Prevention Alliance of Canada

Council of Cardiovascular Nurses, AHA

Council of Chief State School Officers

Directors of Health Promotion and Education (DPHE), ASTHO

Foundation for Accountability

Health Canada

Health Research and Educational Trust

Health Resources and Services Administration (HRSA)

HealthPartners

Heart and Stroke Foundation of Canada

Healthcare Georgia Foundation, Inc.

Indian Health Service

InterAmerican Heart Foundation

International Society for Hypertension in Blacks

International Stroke Society

Jacobs Institute of Women's Health

Kaiser Permanente Care Management Institute

Mass PRO

National Association for Sport and Physical Education

National Association of City and County Health Officials

National Business Group on Health

National Civic League

National Committee for Quality Assurance

National Council of La Raza

National Governors Association

National Conference of State Legislatures

National Heart, Lung, and Blood Institute, National Institutes of Health (NIH), HHS

National Indian Health Board

National Institute of Diabetes and Digestive and Kidney Diseases

National Institute of Neurological Disorders and Stroke, NIH, HHS

National Medical Association

National Stroke Association

New York State Department of Health

North Carolina Department of Health and Human Services

Office of Disease Prevention and Health Promotion, Office of Public Health and Science, HHS

Pan American Health Organization

Partnership for Prevention

Prevention Research Centers Program, CDC, HHS

Preventive Cardiovascular Nurses Association

Pulmonary Hypertension Association

Smart Growth America

Society for Public Health Education

Society of State Directors of Health, Physical Education and Recreation

St. Luke's Episcopal Health Charities

University of North Carolina at Chapel Hill

University of Rochester Medical Center

University of Texas Health Science Center at Houston School of Public Health

US Department of Education

Wake Forest University School of Medicine

The World Bank Group

World Health Organization

YMCA of America

World Heart Federation