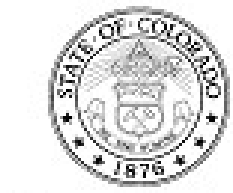
Colorado Heart Healthy and Stroke Free: Reaching the Future 2005-2010

Colorado Department
of Public Health
and Environment

May 2005



Colorado Department
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and Environment

For additional copies of this report or information contact:
Cardiovascular Health Program
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
www.cdphe.state.co.us/pp/cvd
303.692.2000 or 1.800.886.7689 (in-state)
TTD Line for the Hearing Impaired: 303.691.7700

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Chris Armijo, MSPH
Latino Research and Policy Center

Yvonne Baca, President
Board of Directors
Rocky Mountain Stroke Association

Sharon Baker, CNS, CNE
University of Colorado Hospital

Erin Bertoli, BA
Director of Government Affairs
American Heart Association

Cindy Bryant, PhD, MSHA
Division of Healthcare Policy and Research, UCHSC

Roz Davis, MS-SLP
Colorado Neurological Institute

CC Dick, BS
Director of Communication
American Heart Association

Elizabeth Evans-Miller, PhD
Penrose St. Francis Health Services

David Fending, EREMTP
The Medical Center of Aurora

Mary Fletcher, MA
Colorado Foundation for Medical Care

Sally Foland, RN, BSN
Kaiser Permanente Community Medicine

Sandra Gonzales, MAOM
Swedish Medical Center

Laurie Konsella, MPA
U.S. Public Health Service, Office on Women's Health

Gloria Latimer, MSE, EdS
Colorado Department of Public Health and Environment

Bonnie Leeman-Castillo, PhD, MS
CU Denver, Dept. of Health and Behavioral Sciences

Judith Lenane, RN, MHA
The Medical Center of Aurora

Alison Wojiack Long, MPH.
Colorado Department of Public Health and Environment

Matthew Malcolm, PhD, ORT
Colorado State University
Julie Moore, MS
Colorado Beef Council

Pam Nettro, RN, BSN, CNRN
Boulder Community Hospital

Lorri Orwig, BS
Community Volunteer

Lisa Parker
Community Volunteer

Laurel Petralia, MSM
Colorado Trust

Merilee Phillips, ORT
The Medical Center of Aurora

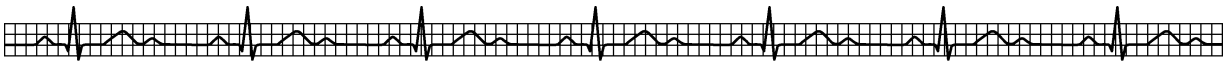
Mario Rivera, MS
Colorado Department of Public Health and Environment

Lynn Robinson, MA, BA
Easter Seals of Colorado

Stephanie Stevens, BS
Colorado Department of Public Health and Environment

Ralph Vickrey, Chief
Cunningham Fire Protection District

Snip Young, PhD
The Cooper Institute



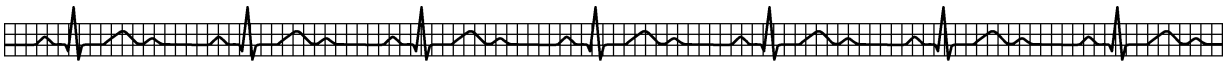
Colorado Department of Public Health and Environment

The impact of cardiovascular disease is felt in many ways. In Colorado, more than 9,000 people die from heart disease and stroke every year. That's more than one life lost every hour. Rising healthcare costs associated with long-term illness and acute treatment affect the economic future of the state. Perhaps the greatest impact is the difficult life changes that occur with heart disease and stroke—an impact that can't be measured by numbers.

In the coming years, the number of Coloradans over the age of 65 will increase dramatically. As our population increases and grows older, we can expect to see heart disease, stroke, and the economic costs associated with treatment and rehabilitation also increase. Never has the need for prevention and treatment of cardiovascular disease been greater.

Recent decreases in adult smoking, prevalence of high blood pressure, and physical inactivity demonstrate that public health programs that address risk factors for cardiovascular disease are making a difference. By continuing to support what's working and focusing additional resources on risk factors that are increasing, we expect to reach the goals set forth in this strategic plan by 2010.

To compliment the strategic plan, the Cardiovascular Disease and Stroke Prevention Program recently updated the report on The Impact of Cardiovascular Disease in Colorado. The analysis conducted for the report shows that cardiovascular disease remains the state's number one health issue, as in the nation. Colorado's health disparities parallel the national picture as well. African Americans have the highest death rate due to heart disease and the shortest life expectancy. The death rate for African Americans due to stroke is 2.7 times higher than other racial and ethnic groups. Hispanics have the highest death rate due to diabetes and the lowest rate of health insurance coverage in the state. Women have a greater likelihood of death following a heart attack and are twice as likely as men to die within the year following a heart



attack. A further concern is that few women perceive themselves to be at risk of heart disease when, in fact, more women die of heart disease than cancer and other diseases. And less than a third of people in Colorado recognize the signs and symptoms of stroke.

The objectives identified for the Colorado Heart Healthy and Stroke Free: Reaching the Future 2005-2010 state plan were developed through a strategic planning process with the Cardiovascular Health Coalition. More than thirty coalition members provided input on strategies to reach the objectives and goals through a web-based process that allowed people to participate in on-line discussions without travel demands.

The plan outlines the vision, mission, goals, and strategies that will guide efforts to reduce cardiovascular disease and its associated costs in the next five years. The plan will serve as a guide for the Cardiovascular Disease and Stroke Prevention Program at the state health department and the Cardiovascular Health Coalition.

In partnership with the members of the Cardiovascular Health Coalition, we look forward to working with you to make this strategic plan a reality.

Gloria Latimer, EdS, M.S.E.
Program Manager
Cardiovascular Disease and Stroke Prevention Program

Normie Morin Voilleque, PhD
Chronic Disease Section Director

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EXECUTIVE SUMMARY

Colorado Heart Healthy and Stroke Free: Reaching the Future 2005-2010 builds upon the successes achieved in recent years and the foundation set by the state's cardiovascular disease prevention program in previous years. Since the development of the first strategic plan, several new programs have been established at the Colorado Department of Public Health and Environment that focus on primary prevention. As a result, the Cardiovascular Disease and Stroke Prevention program shifted its focus to secondary and tertiary prevention to avoid duplication of efforts and make the most of available funding.

With this shift in focus, the updated plan identifies strategies to prevent a second heart attack or stroke and develop systems for improving treatment. The findings listed below serve as the rationale for a new approach to cardiovascular disease prevention and treatment.

- There is inadequate data on the incidence and treatment of stroke, the state's third leading killer and a major cause of long-term disability. A stroke registry or similar data collection system is needed to collect this information.
- Data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that less than a third of Coloradans can correctly identify the signs and symptoms of heart attack or stroke. A priority of the strategic plan is to develop public information campaigns and collaborate with other partners to reach people throughout the state.
- The ability of emergency medical providers to identify symptoms of stroke and heart attack and transport to the most appropriate hospital for treatment is essential to improving outcomes. Provider education programs will be developed based on the needs of emergency medical technicians, paramedics, and other pre-hospital responders.

- As the majority of risk factors for cardiovascular disease and stroke can be reduced through lifestyle changes, the strategic plan supports increased attention to self-management of risk factors as a treatment option and collaborating with primary prevention programs for physical activity, nutrition, and smoking.
- Few hospitals in Colorado have implemented national standards for heart disease and stroke treatment such as "Get With the Guidelines for Coronary Artery Disease and Stroke" or sought accreditation from the Joint Commission of Accreditation of Hospitals as a stroke center. The strategic plan promotes the notion of adopting standards within healthcare systems.
- The state level program has a strong reputation as a provider of regional and state level trainings and conferences for healthcare providers. The strategic plan supports increasing the number of trainings provided and expanding the target groups to include public health workers in addition to healthcare providers and clinicians.

Overarching principles:

- Ongoing program evaluation is necessary to determine what's working and make adjustments in approaches that aren't showing success.
- To reach these goals, the state level program depends upon the voluntary efforts of coalition members. The plan describes activities to sustain the coalition and task forces and develop strong leadership.
- The strategic plan supports the need for dedicated funding to implement policies, guidelines, and standards that improve heart disease and stroke care.
- Health disparities are evident between racial groups and men and women. Special attention and funding must be given to eliminating health disparities.

Colorado's public health initiative to reduce cardiovascular disease is funded by the Centers for Disease Control and Prevention and follows guidelines set forth for state level programs in the Public Health Action Plan to Prevent Heart Disease and Stroke. The program is based within the Prevention Services Division of the Colorado Department of Public Health and Environment.

The Cardiovascular Health Coalition was established to enhance the program's ability to address the issues associated with cardiovascular disease in Colorado. The coalition was established in the mid-1980's and has revised its membership and responsibilities over time. Members of the coalition work together on task forces and work groups to accomplish annual goals. Each task force has a different focus and purpose that relates to the overall goals and objectives.

- The Provider Education Task Force identifies educational opportunities for Colorado's medical community and offers evidence-based trainings on cardiovascular disease and associated risk factors.
- The Community Outreach Task Force collaborates with partners throughout the state to provide risk reduction information, programs, and resources for communities.
- The Policy Advocacy Task Force promotes policies that support risk reduction and improved treatment of cardiovascular disease.
- The Stroke Prevention Task Force focuses on gaps in stroke prevention, treatment, and rehabilitation to improve stroke care in Colorado. The Stroke Prevention Task Force became a part of the Cardiovascular Health Coalition in 2004 to implement

recommendations developed by a seventeen-member board appointed by the Governor's Office, known previously as the Stroke Advisory Board.

HOW COLORADO COORDINATES WITH THE 2010 OBJECTIVES FOR THE NATION

Healthy People 2010 is a document that presents health-related goals and objectives for the United States to be achieved by 2010. This document was created through the Centers for Disease Control and provides benchmarks for states. Colorado develops annual objectives and strategies based upon Healthy People 2010 goals.

In situations where Colorado has made significant progress toward a Healthy People 2010 goal, we have set a target that is beyond the national goal.

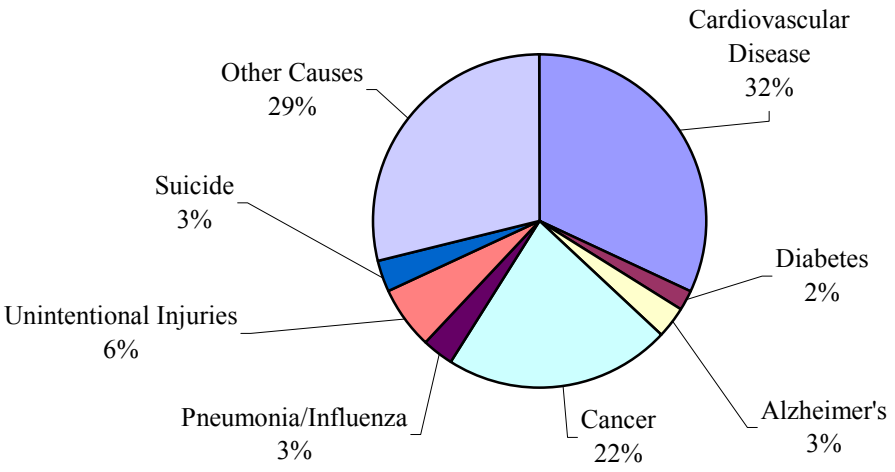
The Healthy People 2010 goals are used together with A Public Health Action Plan to Prevent Heart Disease and Stroke to build a comprehensive program to address cardiovascular disease and stroke. A Public Health Action Plan identifies five essential components of a comprehensive program:

1. Taking Action: Putting Present Knowledge to Work
2. Strengthening Capacity: Increasing the ability of public health programs and coalition partners to implement effective strategies
3. Evaluating Impact: Monitoring the Burden of Cardiovascular Disease and Tracking Progress toward Reducing the Burden
4. Advancing Policy: Defining the Issues and Recommending Changes, and
5. Engaging in Partnerships: Sharing Resources to Enhance Efforts

INTRODUCTION

Cardiovascular disease is a broad term that includes heart attack, stroke, heart failure, hypertensive heart disease, and diseases of the arteries, veins, and circulatory system. It is the leading cause of death for men and women in all race/ethnic groups in Colorado and in the United States.

Figure 1: Leading Causes of Death Among Colorado Residents, 2002



Cardiovascular disease (CVD) is the number one killer of Americans. Despite a 30 percent decline in the age-adjusted death rates in the past 13 years, cardiovascular disease was the leading cause of death in Colorado during 2002. CVD claimed the lives of 9,325 Coloradans[1] and accounted for 32 percent of all deaths (Figure 1).

Colorado has made a significant impact upon the public health issue of cardiovascular disease (CVD) by realizing a 30 percent reduction in the death rate between 1990 and 2003. This decrease includes a 68 percent decrease in the death rate associated with heart attacks (ischemic heart disease).

Progress has been made in decreasing risk factors as well. Colorado's smoking rate has decreased to 18.5 percent. The prevalence of high blood pressure and physical inactivity decreased to 19.8 percent and 16.8 percent, respectively.

While there has been significant progress, cardiovascular disease remains the number one killer of Colorado residents, accounting for 32 percent of all deaths in adults during 2002.

Table 1 presents the ranking of Colorado's top causes of death. The top five causes of death in Colorado correspond to the U.S. rankings; however, the age-adjusted death rate for heart disease is notably lower for Colorado compared to the U.S.

Table 1: Top Causes of Death

Cause of Death- Colorado Rankings	2002 CO Deaths	2002 CO Age- Adjusted Rate	2001 U.S. Age- Adjusted Rate	US Rank
1. Heart Disease	6,403	184.9	247.8	1
2. Cancer	6,372	175.0	196.0	2
3. Stroke	1,907	56.5	57.9	3
4. Chronic Lower Respiratory Disease	1,847	53.7	43.7	4
5. Unintentional Injuries	1,803	43.0	35.7	5
6. Alzheimer's Disease	953	29.6	19.1	8
7. Pneumonia, Influenza	748	22.2	22.0	7
8. Suicide	724	16.1	10.7	11
9. Diabetes	657	18.1	25.3	6
10. Atherosclerosis	503	15.5	5.0	-

Sources: CDPHE, Vital Statistics Section, 2004; CDC NCHS, National Vital Statistics, 2004

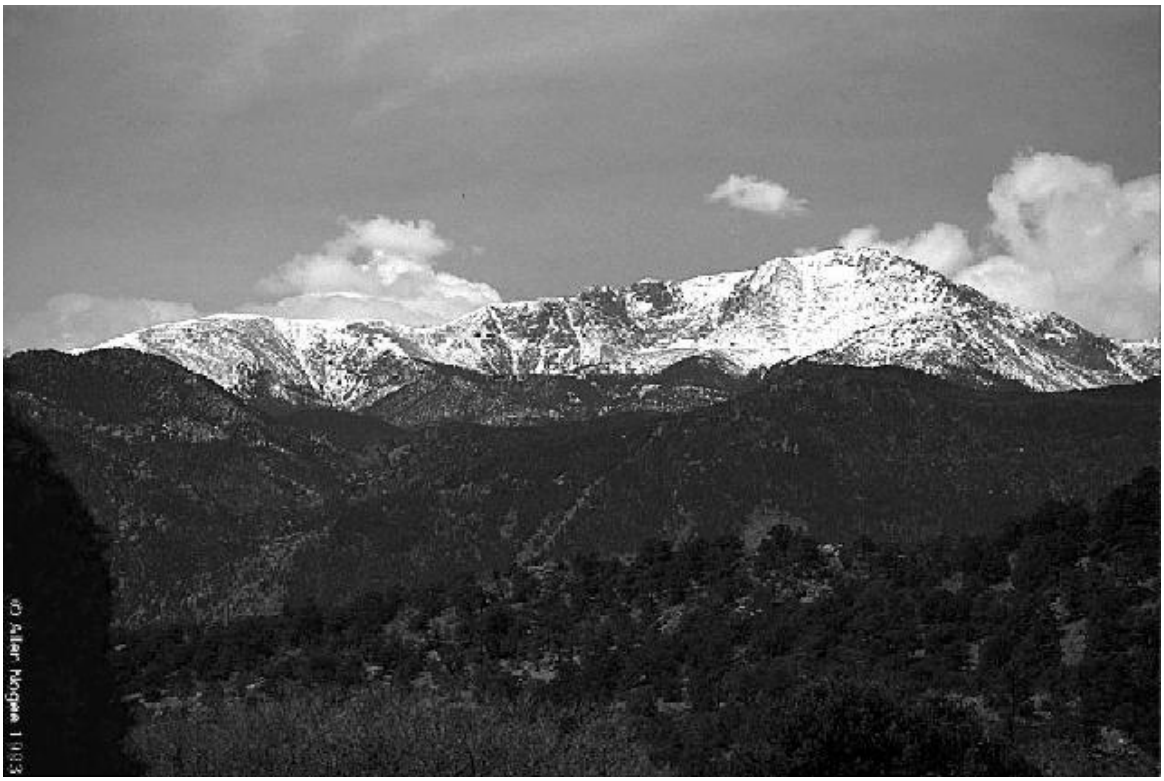
There has been little change in the death rate associated with stroke. The number of hospitalizations for which cardiovascular disease is the primary diagnosis exceeds 44,000 per

year, based on annual averages from 1998 to 2002. Additionally, the cost associated with the treatment of cardiovascular disease has increased by 45 percent since 1990.

Reducing risk factors associated with CVD remain a priority. Although Colorado has a low obesity rate in comparison to the nation as a whole, obesity is increasing rather than decreasing. Diabetes prevalence has also increased and will likely continue to rise as long as weights (Body Mass Index) increase. Health disparities in relation to cardiovascular disease and its associated risk factors are still evident in racial and ethnic groups.

VISION: "A heart healthy and stroke free Colorado."

MISSION: "To reduce cardiovascular disease and stroke and promote healthy lifestyles for all Coloradans."



GOALS, OBJECTIVES, & STRATEGIES

The following strategies were developed to reach the Healthy People 2010 Objectives for the nation within the goal areas defined in A Public Health Action Plan to Prevent Heart Disease and Stroke. Where a Healthy People 2010 Objective is not provided, coalition members developed a state level objective. Many of the strategies will help us accomplish more than one objective or goal. As we develop annual action plans to achieve the objectives, attention will be given to coordinating strategies across multiple goals and objectives.

For purposes of clarification, the following definitions apply to this document:

Goal: A broad approach taken to achieve objectives.

Objective: A statement of the desired outcome.

Strategy: Actions or approaches that will be taken to accomplish the objective.

Sandra Cohen was a vibrant 35-year old mother and Rabbi. When typing the weekly synagogue newsletter, she was suddenly overwhelmed by numbness, dizziness, and a crushing headache. The stroke hit without warning. Confused, crying uncontrollably, and slurring her words, the Rabbi managed to call her husband and then 911. She could only say over and over, "Something is really wrong." Because she responded to her stroke as an emergency, the Rabbi was one of the few survivors in this country treated with r-tPA.

GOAL: TAKE ACTION

By 2010, initiate proven programs and policies to prevent and reduce cardiovascular disease and stroke.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, increase the proportion of adults ages 20 or older that are aware of the early warning symptoms of a stroke to 22.1 percent, and the importance of accessing rapid emergency care importance by calling 911 to 89.6 percent**.**

(Baseline - 19.6 percent of adults age 20 and older reported all correct signs and symptoms of

stroke, 2001 BRFSS. Baseline – 87.1 percent of adults age 20 and older reported they would call 911 if they thought someone was having a stroke or heart attack, 2001 BRFSS.)

STRATEGIES:

- Conduct statewide public information campaigns using existing materials from the American Stroke Association, National Stroke Association, and other partners.
- Partner with senior service agencies and organizations reaching people over 55 years of age to distribute messages on the signs and symptoms of stroke and the importance of calling 911.
- Collaborate with partner organizations to involve business organizations and workplaces in educational programs on the signs and symptoms of stroke, prevention, and the importance of rapid emergency care.
- Partner with fire departments, volunteers, and emergency medical service providers statewide to reach the public with messages regarding early warning signs of heart attack and stroke and importance of calling 911.
- Promote enhanced 911system in portions of the state that do not have the system.
- Collaborate with EMS system to improve identification of stroke and heart attack by paramedics and other emergency service providers.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, increase the proportion of adults aged 20 years and older who are aware of the early warning symptoms and signs of a heart attack to 14.5 percent and the importance of accessing rapid emergency care by calling 911 to 89.6 percent. Target to be determined by Healthy People. (Baseline – 12.0 percent of adults age 20 and older reported all correct signs and symptoms of a heart attack, 2001 BRFSS. Baseline – 87.1 percent of adults age 20 and older reported they would call 911 if they thought someone was having a stroke or heart attack, 2001 BRFSS.)

STRATEGIES

- Conduct a statewide public information campaign using existing materials from the American Stroke Association, National Stroke Association, and other partners.
- Partner with senior service agencies and organizations reaching people over 55 years of age to distribute messages on the signs and symptoms of stroke and the importance of calling 911.
- Partner with business organizations and workplaces to educate employees on the signs and symptoms of stroke, prevention, and the importance of rapid emergency care.
- Partner with fire departments, volunteers, and emergency medical service providers statewide to reach the public with public service announcements regarding early warning signs of heart attack and stroke and importance of calling 911.
- Promote enhanced 911 systems in portions of the state that do not have the system.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, reduce the proportion of adults with high total blood cholesterol levels to 17 percent. (Baseline - 31.9 percent of adults reported that they had been told by a health professional that they had high total blood cholesterol levels, 2003 BRFSS.)

STRATEGIES

- Provide training to primary care physicians and other healthcare providers on recommendations from the National Cholesterol Education Program as part of the annual conference and regional trainings.
- Encourage physicians to implement National Committee on Quality Assurance measures and recognize recipients during annual conference and regional trainings.
- Partner with Colorado Clinical Guidelines Collaborative to establish guidelines on cardiovascular disease treatment for providers and encourage implementation of the guidelines.
- In collaboration with the Colorado Physical Activity and Nutrition Coalition, encourage workplaces to provide on site cholesterol screenings to employees.
- Encourage professional organizations to adopt policies requiring members to follow recommended national guidelines for treatment of high cholesterol as a requirement of membership.
- Educate physicians through the annual Cardiovascular Health Summit and regional trainings about the appropriate LDL level for people with coronary heart disease.
- Partner with the American Heart Association to conduct a public information campaign on normal total blood cholesterol levels.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, increase to 80 percent the proportion of adults who have had their blood cholesterol checked within the preceding five years. (Baseline 71.2 percent of adults aged 18 and older had their cholesterol checked within the past five years, 2003 BRFSS.)

STRATEGIES

- Collaborate with organizers of the Channel 9 Health Fairs (Denver's NBC affiliate) to include cholesterol screenings as part of the services offered to the public at health fairs held throughout the state.
- Partner with the Colorado Business Group on Health to organize standards and guidelines for worksite health promotion and cholesterol screenings.
- Partner with community education programs in hospitals statewide to offer cholesterol screenings at a discounted charge as part of their community outreach program.
- Partner with American Stroke Association to promote the annual Stroke Check in communities statewide.
- Partner with hospital based blood banks to offer free cholesterol screenings to those who donate blood.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, increase the proportion of adults with high blood pressure whose blood pressure is under control to 50 percent.

STRATEGIES

- Promote self-management of high blood pressure through distribution of public education materials on diet, stopping smoking, and increasing physical activity to healthcare providers.
- Collaborate with Community Health Clinics to provide appropriate self-management materials and treatment to all patients identified as having a high blood pressure reading.
- Promote the National Stroke Association's campaign focused on "*Know Your Numbers".*

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, reduce to 16 percent the proportion of adults with high blood pressure. (Baseline 19.8 percent of adults reported that they had been told by a health professional that they had high blood pressure, 2003 BRFSS.)

STRATEGIES

- Promote the National Stroke Association's campaign to "*Know Your Numbers* statewide."
- Include training on blood pressure management through self-management and drug treatment during the annual conference and regional trainings.

- Encourage providers to implement National Committee on Quality Assurance (NCQA) guidelines for high blood pressure and become recognized as a NCQA provider.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, reduce coronary heart disease deaths to a rate of 108.9 deaths per 100,000. (Baseline 118.6 coronary heart disease deaths per 100,000 population, 2003 Vital Statistics.)

STRATEGIES

- Collaborate with hospitals statewide to provide Grand Rounds training on cardiovascular disease prevention and treatment issues.
- Provide trainings on cardiovascular disease prevention and treatment issues through the Colorado Community Health Network and the Colorado Rural Health Association.
- Partner with local and state medical societies, Area Health Education Centers (AHECS) and professional associations for healthcare providers to provide trainings on cardiovascular disease prevention and treatment strategies.
- Host a series of professional trainings for providers including an annual conference and regional trainings.
- Encourage physicians to implement National Committee on Quality Assurance guidelines and become recognized by NCQA.
- Collaborate with Colorado Clinical Guidelines Collaborative to promote implementation of guidelines on tobacco cessation counseling, diabetes treatment, and the newest guideline on the heart disease treatment.

- Collaborate with the organizers of the 9 News Health Fairs to ensure that blood pressure checks, blood cholesterol, and smoking status with appropriate self-management materials are provided at all health fair sites throughout the state.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, reduce stroke deaths to a rate of 48 deaths per 100,000. (Baseline 51.3 deaths per 100,000, 2003 Vital Statistics.)

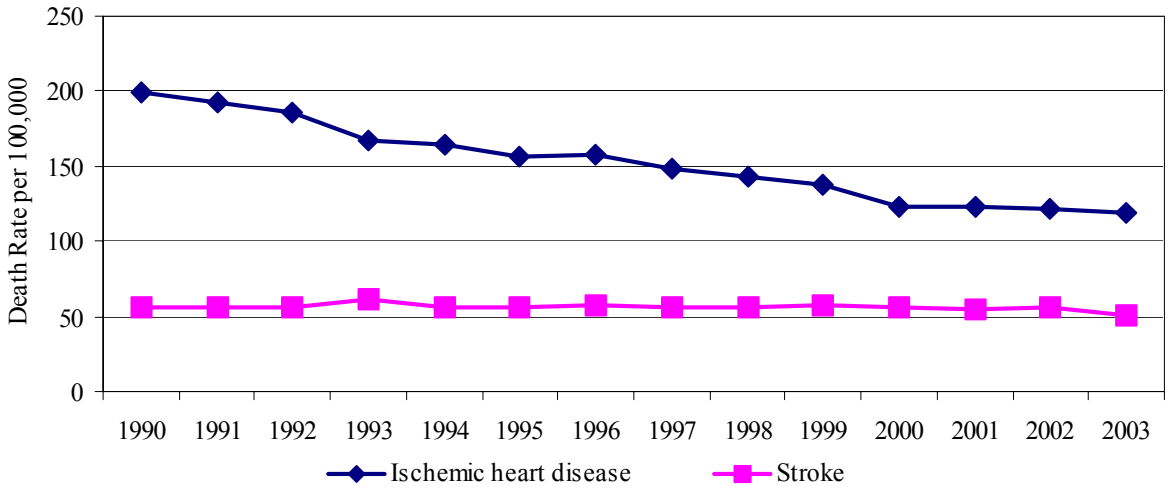
STRATEGIES

- In collaboration with the American Heart Association, promote the adoption of *"Get with the Guidelines-Stroke"* in hospitals throughout the state and co-sponsor trainings with American Heart Association.
- In partnership with directors of the state Emergency Medical System, examine the need for training on methods to decrease transport time to appropriate stroke centers for paramedics.
- Provide training on prevention of secondary strokes to rehabilitation and home health care providers.

Jennifer Fellows had her stroke at age 13. She was swimming with a friend when she noticed her ears were ringing and began to see black spots. She attempted to get out of the pool, but was unable to speak and was paralyzed on her right side. Her friend pulled her to the stairs and got a lifeguard. She collapsed when her feet hit the concrete. Jennifer was taken to a local hospital and then flown to Denver by Flight For Life. She had 2 clots and 2/3 of her middle left cerebral hemisphere is dead. According to the stroke scale, strokes can range from a 4 to 20, with 20 being the most severe. Jennifer had an 18. Her doctors call her the "Miracle Child".

- Seek adequate funding to establish a stroke registry beginning with self-designated stroke center and JCAHO certified centers in the state to improve stroke care.
- Provide specific training on effective stroke identification, quick referral, and treatment to primary care providers.
- Promote policy to establish a coordinated hospital based stroke system to improve stroke care for patients and collect data related to cardiovascular disease and stroke.
- Increase public education/awareness about Primary Stroke Centers/Hospitals.
- Increase education on the importance of quick treatment of stroke to pre-hospital transport teams and healthcare providers.

Figure 2: Age-adjusted Ischemic Heart Disease and Stroke Death Rates, Colorado Residents, 1990-2003



HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, reduce tobacco use by adults to 12 percent. (Baseline - 20 percent of Colorado adults were cigarette smokers, 2002 BRFSS.)

STRATEGIES

- Promote the state's free Quit Line and Quit Net services to healthcare providers and the public.
- Promote the idea of smoking status as a "vital sign" and include information on referrals to Quit Line and Quit Net for behavioral counseling and appropriate drug therapy.
- Support public policies that establish smoke free workplaces and public places.
- Support policy efforts to eliminate tobacco marketing to youth.

HEALTHY PEOPLE 2010 LONG TERM OBJECTIVE

By 2010, increase smoking cessation attempts to 75 percent by adult smokers. (Baseline- 51.3 percent of adult smokers stopped smoking for one day or longer because they were trying to quit, 2002 BRFSS.)

STRATEGIES

- Promote the state's free Quit Line and Quit Net services to healthcare providers and the public.
- Integrate Quit Line and Quit Net information into public relations and media activities for cardiovascular health and stroke awareness.

- Provide training to hospitals seeking Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) certification as stroke centers on tobacco cessation interventions and appropriate referrals to Quit Line and Quit Net services

GOAL: STRENGTHEN CAPACITY

By 2010, provide leadership in Colorado to plan and coordinate statewide activities with public and private partners to reduce the burden of cardiovascular disease.

Short and Mid Term Objectives (one to three years)

COMMUNITY OUTREACH: Increase the ability of state and local agencies to implement evidence-based programs statewide by providing technical assistance, training, and funding opportunities.

- Promote existing toolkits and strategies for reduction of cardiovascular disease and stroke.
- Host web based coalition meetings as a way of expanding coalition membership to include people throughout the state.
- Partner with regional and state emergency service advisory committees to reach and involve communities outside the Front Range.
- Meet quarterly with chronic disease staff in county health departments to coordinate prevention and public education programs.
- Provide mini-grants to local health departments and community based organizations to conduct initiatives to prevent and reduce cardiovascular disease and stroke in their communities.
- Conduct media events statewide during months designated to promote heart and stroke reduction in collaboration with coalition partners.

- Establish a centralized materials clearinghouse for the public, providers, and community organizations to order materials related to heart disease and stroke prevention and treatment.
- Provide funding and technical assistance to organizations that have the ability to reach groups with health disparities related to cardiovascular disease and stroke.

PROVIDER EDUCATION: Increase the number of trainings targeting healthcare providers who provide care to persons with cardiovascular disease and stroke to five per year and evaluate the quality of each training by summarizing training evaluations.

- Conduct an annual needs assessment to determine training needs.
- Co-sponsor trainings and seminars with partners.
- Partner with professional organizations and associations for healthcare providers to and integrate cardiovascular disease prevention and treatment issues into related conferences and trainings.
- Establish centralized materials clearinghouse for the public and providers to order materials related to heart disease and stroke prevention and treatment free of charge.
- Develop a mentoring program between hospitals with established protocols for cardiovascular disease and stroke treatment and those that are developing protocols.

POLICY ADVOCACY: By 2010, reduce the burden of cardiovascular disease and stroke by developing a policy agenda each year and supporting at least one policy to reduce risk factors for cardiovascular disease and stroke and improve treatment options that has statewide reach.

- Review list of Medicaid and Medicare services available to people with cardiovascular disease, stroke, and related issues to determine treatment and rehabilitation gaps.
- Identify current insurance coverage for rehabilitation for stroke.
- Develop a list of supporters for cardiovascular disease prevention within elected officials in the state.

At the young age of 17, Kelly Richardson suffered a stroke while driving to work. She spent 3 weeks in the hospital and 2 weeks in inpatient rehabilitation. 16 years later she still goes to outpatient therapy 3 times a week. She says it's been a long road and she's only half way there. Speech is her biggest problem.

- Advocate for funding to support rehabilitation programs for stroke survivors.
- Partner with the Colorado Physical Activity and Nutrition Program to include signs and symptoms of heart attack and stroke and risk reduction activities for lowering cholesterol and blood pressure in the worksite toolkit.
- Submit resolutions for endorsement by the Colorado Board of Health that support cardiovascular disease prevention and treatment.

STROKE PREVENTION: By 2010, partner with at least ten healthcare organizations and support agencies to increase the ability of providers and facilities to coordinate standards of care for stroke treatment and rehabilitation each year.

- Partner with Regional Emergency Trauma Advisory Committee (RETAC) and State Emergency Trauma Advisory Committee (SEMTAC) to reach EMS providers throughout the state with stroke and cardiovascular disease information and policy developments.
- Collaborate with Emergency Department physicians through Colorado Academy of Certified Emergency Physicians (ACEP) to expand coalition's outreach to front line providers.
- Partner with any agencies and organizations that serve senior citizens i.e. Colorado State University's Center of Aging and Colorado Gerontological Association.

GOAL: EVALUATE IMPACT

By 2010, monitor the impact of cardiovascular disease and stroke and measure progress towards objectives through an annual review of program effectiveness and analysis of BRFSS findings.

SHORT AND MID TERM OBJECTIVES

COMMUNITY OUTREACH

- Increase the sample size of BRFSS questions related to cardiovascular disease and stroke in selected counties of the state.
- Conduct an annual evaluation of program effectiveness.
- Evaluate the increase in adults who know the warning signs and symptoms of stroke by funding the inclusion of the stroke module on the Behavioral Risk Factor Surveillance System every other year.
- Measure the increase in 911 calls related to stroke by requesting call data from the 911 system on an annual basis.
- Based on available data, develop fact sheets on risk factors, health disparities, and economic costs associated with cardiovascular disease.

PROVIDER EDUCATION

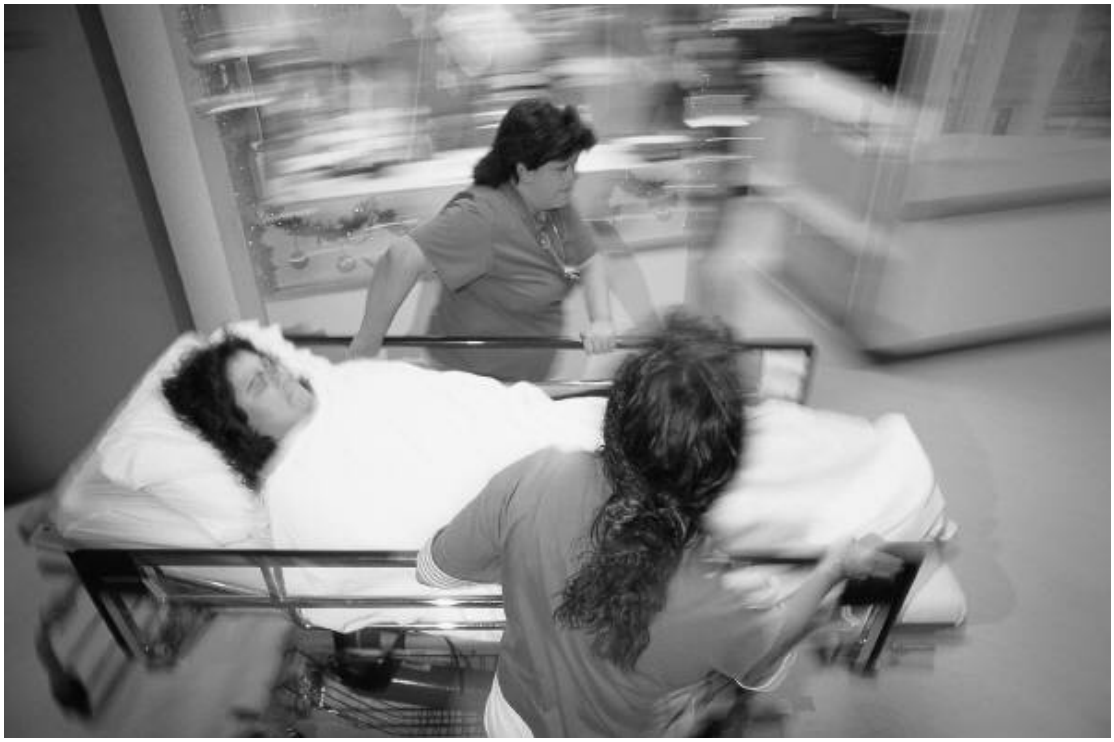
- Conduct process evaluations on each training offered
- Request aggregate and blinded data from hospitals that implement *"Get With the Guidelines"*.
- Analyze data from the Cardiovascular Disease and Diabetes Collaborative to determine progress in reaching quality improvement goals.

- Review and analyze data on cardiovascular disease and stroke to determine trends and compare findings.

STROKE PREVENTION

- Review the guidelines set forth by American Stroke Association and the Centers for Disease Control to determine feasibility of establishing a stroke registry in Colorado.

- Seek funding to implement "*Get With the Guidelines for Stroke"* in hospitals statewide.
- Develop and promote state recognition program for hospitals participating in "*Get With The Guidelines for Stroke."*
- Request data from hospitals implementing the "*Get With The Guidelines for Stroke"* protocol from the American Heart Association.



GOAL: ADVANCE POLICY

By 2010, collaborate with at least 10 partner agencies to identify healthcare, business, school, and community level priorities for cardiovascular disease and stroke prevention and determine best methods to implement and sustain policies.

SHORT AND MID TERM OBJECTIVES

COMMUNITY OUTREACH

- Update the cardiovascular disease and stroke prevention program's inventory of voluntary and enacted policies that influence cardiovascular disease and stroke prevention and treatment in communities statewide.
- Advocate for a sustainable funding source for cardiovascular disease and stroke prevention and treatment programs.
- Collaborate with other chronic disease programs at the Colorado Department of Public Health and Environment to advance evidence based policies to reduce the impact of all chronic diseases.

PROVIDER EDUCATION

- Support treatment protocols within healthcare systems and hospitals.

POLICY ADVOCACY

- In partnership with Cardiovascular Health Coalition members, host an annual legislative breakfast to inform and educate policy makers about cardiovascular disease and stroke issues.
- Develop a list of legislators interested in cardiovascular disease and stroke. Meet with key legislators/invite to coalition meetings.

- In collaboration with Cardiovascular Health Coalition members and other chronic disease coalitions, develop a policy agenda on an annual basis.

STROKE PREVENTION

- In partnership with Cardiovascular Health Coalition members, support efforts to establish a stroke registry for Colorado.
- Review policies related to pre-hospital care for people with signs and symptoms of stroke and set policy for continuing education of providers.

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GOAL: ENGAGE IN LOCAL, STATE, REGIONAL, AND NATIONAL PARTNERSHIPS

By 2010 collaborate with members of the Cardiovascular Health Coalition to mobilize resources for cardiovascular health promotion and extend the reach of the program throughout the state.

SHORT TERM OBJECTIVES

- Tailor health education messages to populations with the greatest health disparities related to cardiovascular disease and stroke.
- Build partnerships with other health advocacy groups.
- Participate in Chronic Disease Directors/National Association of State Units on Aging, National Heart Lung and Blood Institute, and Association of State and Territorial Health Officers.
- Establish a regular meeting between program managers, coalition leadership, and American Heart Association liaison in Colorado, Arizona, Wyoming, and New Mexico.

EVALUATION

The Colorado Cardiovascular Disease and Stroke Prevention Program will conduct program evaluation to measure progress in reaching its goals and objectives. The evaluation will support state staff, local public health staff and healthcare providers working on prevention and treatment issues, and coalition volunteers in assessing the progress, accomplishments, and opportunities for improvement.

Evaluation activities will allow the program to make necessary modifications and assess program impact. The intent of the evaluation is to support the program as it evolves and to allow for the flexibility to respond to emerging issues and contextual circumstances.

By 2010, the Colorado State Plan to address Cardiovascular Disease and Stroke Prevention will demonstrate success in meeting the objectives within the plan as indicated by:

1. Increased awareness of the early warning symptoms and signs of a stroke and heart attack and the importance of accessing rapid emergency care by calling 911
2. Decreases in trends of the risk factors (high cholesterol, high blood pressure, tobacco use) associated with heart disease and stroke
3. Decreases in trends of mortality rates due to heart disease and stroke
4. Increased capacity to implement evidence-based programs
5. Increased quantity and quality of trainings to healthcare providers
6. The promotion of policies that reduce risk factors for cardiovascular disease and stroke and improve treatment options

Evaluation Goals

The evaluation will focus on completing four overall evaluation goals[1]:

1. Document changes in Colorado's capacity to address cardiovascular disease and stroke.
2. Document cardiovascular disease and stroke burden using surveillance data (progress made towards Healthy People 2010 and Colorado 2006 objectives).
3. Document changes in policies and environmental supports and, to the degree possible, the impact on cardiovascular health.
4. Document the process and outcomes of the program's goals, objectives, and activities.

Process Evaluation

This component of the evaluation focuses on the ongoing tracking of progress made towards completing objectives and activities designed to bring about changes directly linked to the program's goals.

The process evaluation will determine:

- The extent to which the plan is being implemented as intended.
- The degree to which objectives are progressing towards completion over the course of the five-year plan. This also includes assessing the strengths, weaknesses, and lessons learned during the implementation of the plan.
- How the program appropriately focuses cardiovascular health efforts, especially towards priority populations.

Outcome Evaluation

The outcome evaluation determines whether or not changes are occurring and the impact of the changes in the state. Intermediate outcomes include community changes such as new

[1] U.S. Department of Health and Human Services, *CDC State Heart Disease and Stroke Prevention Program: Evaluation Framework.* U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; 2004.

services, new policies, and changes in attitudes and knowledge. All of the long-term outcomes specified in the plan are Healthy People 2010 objectives. Long-term outcomes include changes in cardiovascular disease risk factors, such as blood cholesterol, high blood pressure, and tobacco use.

The outcome evaluation will:

- Determine changes in behavior, services, and policies that have occurred as a result of the plan.
- Assess the inroads in addressing health disparities.
- Determine if educational intervention increases public awareness of cardiovascular disease (e.g., its signs and symptoms).
- Track the changes occurring in the state population's cardiovascular disease burden and risk factors over time. (As measured primarily through vital statistics, hospital discharge data, and the BRFSS.)
- Track the extent to which changes in the outcomes contribute towards achieving the objectives of Healthy People 2010.

Surveillance

Using existing data systems, such as the BRFSS, vital statistics, and hospital discharge data, the Cardiovascular Disease and Stroke Prevention Program has the capacity to track changes in CVD and related risk factors. The program will continue to use the existing data systems to maintain surveillance of cardiovascular disease and related risk factors.

Logic Models

Logic models provide a systematic way to visually depict a program including inputs (resources), outputs (activities and who is reached), and short, intermediate, and long-term

outcomes. An overall logic model for the state plan is presented at the end of this section. The program currently utilizes logic models as tools for program design, management, and evaluation. The evaluation will continue to incorporate the use of logic models for purposes of planning and evaluation.

Data Sources

Process measures will be collected on an on-going basis as activities are put into action. The timing of analyses of these measures will be coordinated with progress reporting timeframes that occur semi-annually.

The data source for the collection of intermediate outcome measures will principally include an activity monitoring system. The sources of data for long-term outcomes measures include the Behavioral Risk Factor Surveillance System Survey (BRFSS), the Colorado Hospital Association, and Vital Statistics. Other surveys will be developed as needed to collect outcome measures.

Evaluation Objectives

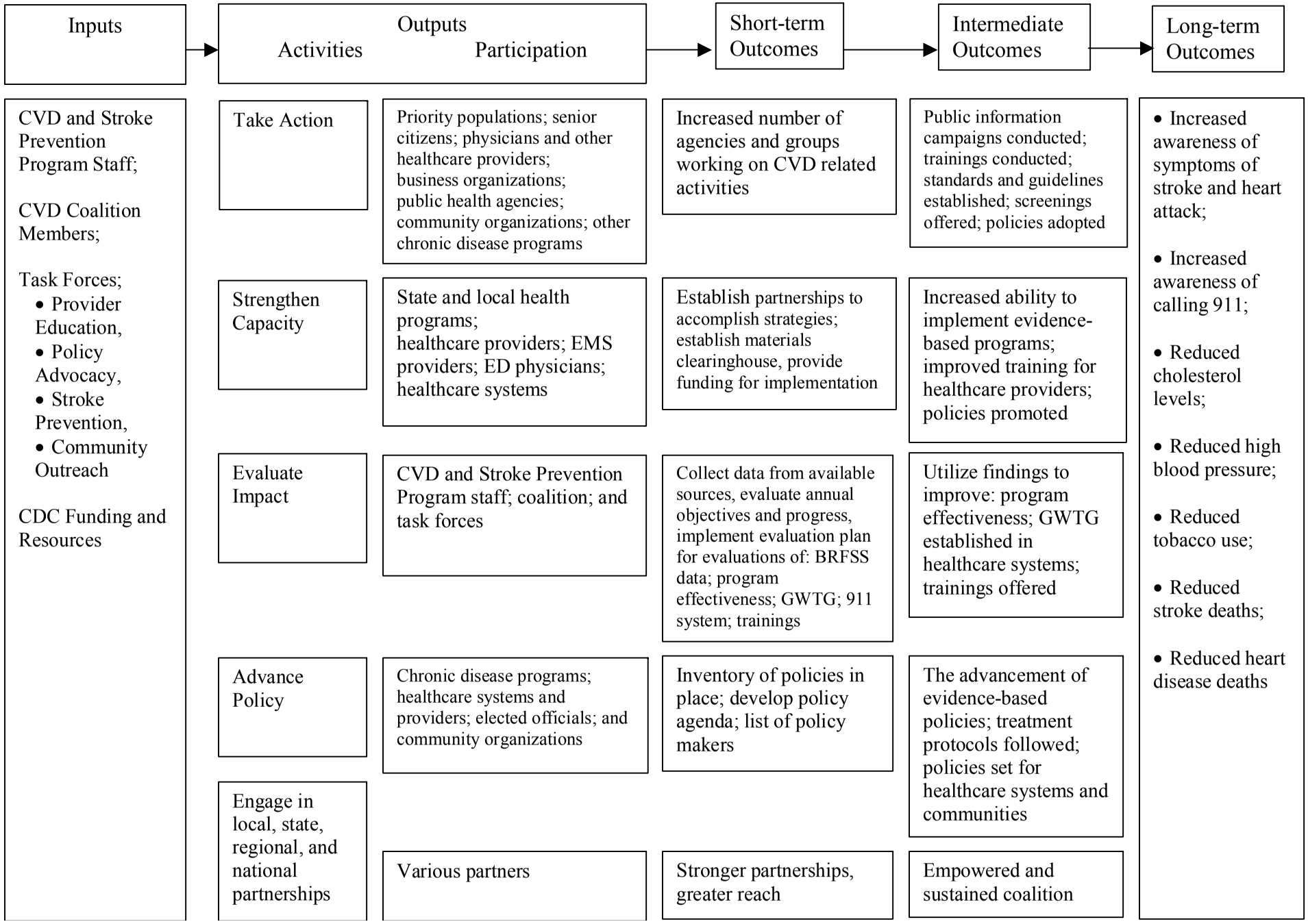
Process and Outcome Evaluation: During 2005 the program evaluator will develop an activity monitoring system for the program to track progress.

Logic Models: During 2005 the program evaluator will develop logic models for each goal to elaborate on the overall logic model presented at the end of this section.

Long-Term Outcome Evaluation: As data becomes available the program evaluator will conduct on-going surveillance of modifiable risk factors, mortality, and morbidity related to cardiovascular disease and stroke.

Reporting Processes: Evaluation data will be made available for inclusion in progress reports to the Centers for Disease Control. An annual evaluation report will be produced on the progress towards the completion of the goals, objectives, and activities.

CARDIOVASCULAR DISEASE & STROKE PREVENTION STATE PLAN LOGIC MODEL



NEXT STEPS

The major modifiable behavioral risk factors—tobacco use, physical inactivity, poor nutrition, overweight and obesity, and the major biological risk factors—high blood pressure, high blood cholesterol, and diabetes—are most effectively addressed through population-based primary and secondary prevention strategies.

This strategic plan serves as a blueprint for reaching the state objectives and Healthy People 2010 objectives in Colorado. Over the next five years, the Cardiovascular Disease and Stroke Prevention Program at the state health department will use this plan as the foundation for yearly action plans. It is hoped that this plan will guide local public health efforts, community health clinics, hospitals, and healthcare providers as they establish community level programs and coalitions to reduce the impact of heart disease and stroke. The members of the Cardiovascular Health Coalition urge other agencies and partners to adopt these strategies as their own and integrate the overall goals of the plan into theirs.