The Ohio Plan

to Prevent Heart Disease and Stroke 2008–2012

Second Edition
2009

Dear Heart Disease and Stroke Prevention Partners,

Cardiovascular disease, which includes heart disease and stroke, continues to be the leading cause of death in Ohio. Reducing morbidity and mortality from cardiovascular disease is a task that requires the combined efforts of many organizations, partners and individuals to ensure success. The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, 2nd Edition is the result of such a cooperative effort. Public and private organizations; professional associations and educational institutions; faith-based health services; and major medical facilities represented on the Ohio Heart Disease and Stroke Prevention Council combined their efforts to develop goals, objectives and activities that will reduce disability and death for Ohioans.

Reducing the burden of heart disease and stroke is no simple task. This plan addresses the entire system of care: primary prevention; risk factor reduction and management; acute care services; rehabilitation; and long-term care. The plan also addresses policy development and implementation as well as health disparities. Although we have made great progress in the fight, there is still much work left to be done.

The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, 2nd Edition was developed to provide a blueprint to address heart disease and stroke risk factors, disease burden and mortality rates. The implementation of the plan's strategies is needed to improve cardiovascular health, reduce the risk of heart disease and stroke and create healthy and supportive environments for all Ohioans. It is our hope that this plan will be the catalyst that initiates action at all levels.

Yours in good health,

Alvin D. Jackson, M.D.
Director
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Acknowledgements

The second edition of the Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, represents the synergistic efforts of the Heart Disease and Stroke Prevention Council (formerly the Cardiovascular Health Alliance and the Ohio Stroke Council), and our internal and external partners across the state. Without the tireless effort of our partners, this plan would not be completed. The intent of the plan is to identify and implement strategies and interventions to reduce the costs, morbidity and mortality associated with heart disease and stroke.

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Table of Contents

Executive Summary 1
Introduction 3
Developing an Action Plan for Heart Disease and Stroke Prevention in Ohio . . 4
Burden of Heart Disease and Stroke in Ohio 5
Goals, Objectives and Strategies 11
Overarching Issue: *Eliminating Disparities* 12
GOAL 1 Support for Healthy Lifestyles 15
GOAL 2 Risk Factor Reduction and Management 21
GOAL 3 Acute Care 25
GOAL 4 Rehabilitation and Long Term Care 31
GOAL 5 Surveillance and Evaluation 35

Next Steps
Ohio's Action Plan 47
Ohio's Heart Disease and Stroke Prevention Call to Action 51
References and Sources 55
Appendix A: Ohio Heart Disease and Stroke Prevention Plan Partners 60
Appendix B: Glossary 63
Appendix C: Treatment Guidelines 67
Appendix D: Signs and Symptoms 71
Appendix E: CDC Heart Disease and Stroke Prevention Program Priority Areas 72
Appendix F: Healthy People 2010 Goals and Objectives 73

Executive Summary

The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition, (the plan) outlines a comprehensive approach to reducing the burden of the first-(heart disease) and fourth-leading (stroke) causes of death in Ohio. The plan covers the continuum of cardiovascular disease from prevention to controlling risk factors through treatment and rehabilitation in those who have had a cardiovascular event.

To address a health issue of this magnitude, the efforts of a broad spectrum of organizations are required. The plan reflects the commitment and dedication of numerous organizations, programs and associations that have partnered as the Ohio Heart Disease and Stroke Prevention Council (formerly the Cardiovascular Disease Alliance and the Ohio Stroke Council).

The plan takes a population-based approach to address individual behavior change on multiple levels of influence. This socio-ecological model calls for interventions to be implemented at the individual, interpersonal, organizational, community and public policy levels of influence. This approach recognizes the relationship that exists between individuals and their environments.

The Ohio Heart Disease and Stroke Prevention Council and partners identified objectives supporting healthy lifestyles (primary prevention); risk factor reduction and management; acute care; rehabilitation and long-term care; and surveillance and evaluation. The plan also integrates issues related to health disparities into topic areas.

Supporting healthy lifestyle's objectives focus on reducing risk factors associated with heart disease and stroke and developing policies and supportive environments for Ohioans by:

- Increasing the number of state laws and policies that support healthy lifestyle behaviors.
- Increasing the number partners promoting opportunities for physical activity, access to healthy eating options and tobacco-free environments.
- Increasing awareness of the importance of family health history in identifying individuals at greater risk for chronic disease, including cardiovascular disease (CVD).
- Increasing the percentage of Ohio schools implementing health promotion policies and environmental supports that encourage physical activity, tobacco cessation, healthy food preparation and healthy food choices.

Risk factor reduction and management objectives strive to improve the health of those with identifiable risk factors and those who have had a heart attack or stroke by:

- Increasing the proportion of Ohioans achieving clinical standards for controlling high blood pressure and cholesterol.
- Increasing the number of Ohio work sites offering health promotion programs and insurance coverage for risk factors related to heart disease and stroke.

- Increasing the number of primary care providers informed about the importance of identifying individuals with genetic risk for CVD.

Acute care objectives emphasize the need for a comprehensive system of care to improve outcomes for heart disease and stroke by:

- Increasing the number of Ohioans who recognize the warning signs and symptoms of heart attack and stroke and the importance of seeking prompt treatment (emphasis on priority populations).
- Maintaining areas of superior quality care and improving areas of inferior quality care for heart attack and stroke as defined by current clinical guidelines.
- Improving the quality of pre-hospital and inpatient health care services for cardiac and stroke events.

Rehabilitation and long-term care objectives strive to improve the function of heart attack and stroke survivors and to provide services and support to affected individuals and their families by:

- Increasing the percentage of Ohioans who receive timely and individually appropriate rehabilitation services for heart attack and stroke.
- Increasing the number of facilities offering appropriate long-term care for heart attack and stroke.

Surveillance and evaluation objectives help determine where to focus efforts and establish benchmarks to measure the level of success in achieving goals and objectives by:

- Modifying or expanding existing data sources to include more useful indicators that identify and track disparities related to heart disease and stroke.
- Increasing Ohioans' accessibility to data related to heart disease and stroke.
- Increasing the number of hospitals reporting into the Ohio Paul Coverdell Acute Stroke Registry to improve the quality of care for stroke patients.

The Heart Disease and Stroke Prevention Council recognizes that innovation in prevention and treatment modalities will change as providers become more effective in preventing, diagnosing, treating and managing heart disease and stroke. As a result, this plan must be reviewed and revised regularly to reflect the changes in best practices.

The second edition of the plan reflects current efforts to significantly reduce the burden of heart disease and stroke in Ohio. Partners and individuals must implement the strategies outlined in a coordinated and cooperative manner to ensure a heart-healthy and stroke-free Ohio.

Introduction

In Ohio, heart disease and stroke are the first- and fourth-leading causes of death, respectively, for both men and women. CVD accounts for 37 percent of all deaths in Ohio, while stroke is the leading cause of serious long-term disability in adults (Defiore-Hyrmer and Pryor, 2006).

Additionally, the economic burden of CVD continues to increase. In 2008, the estimated direct and indirect costs of CVD in the United States were $448.5 billion (American Heart Association, 2008).

While deaths due to CVD affect all Ohioans, persons with a family history of CVD and certain ethnic, racial, socioeconomic and geographic communities are affected at greater rates. More specifically African-American men suffer from a stroke mortality rate that is 53 percent higher than any other racial-gender group in Ohio (Defiore-Hyrmer and Pryor, 2006).

Although there have been many advances in CVD prevention, treatment and rehabilitation, the opportunity to impact these conditions and decrease the number of related deaths still exists.

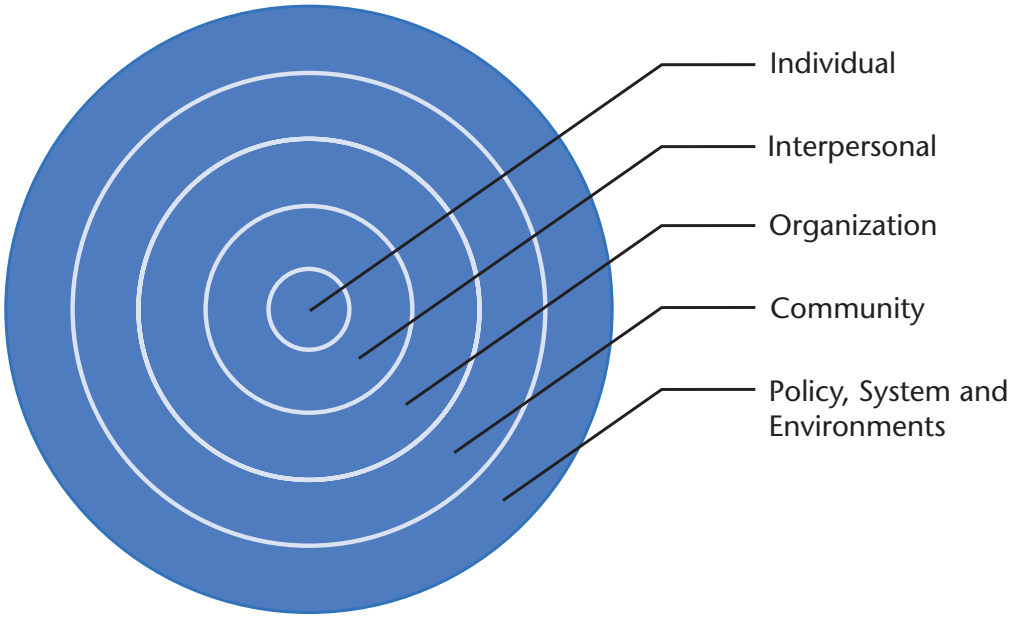
The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition, outlines a comprehensive approach to reducing the burden of heart disease and stroke. The plan invites all stakeholders to collaborate to create public education activities, policies and system changes that will allow Ohioans to make heart-healthy choices in all settings—communities, health care, schools or workplaces. The plan also proposes secondary prevention strategies to improve emergency response, acute care and rehabilitation should a heart attack or stroke occur.

The plan integrates many of the Healthy People 2010 objectives for improving health, the Centers for Disease Control and Prevention (CDC) Heart Disease and Stroke Prevention Program's (HDSP) priority areas and a number of CDC's Policy and System Outcome Indicators for State Heart Disease and Stroke Prevention Programs related to high blood pressure control. The plan also highlights the goals, objectives and strategies Ohio will take to guide the efforts in reducing disability and death from heart disease and stroke over the next five years. The result will be a more comprehensive and coordinated system of care for heart disease and stroke prevention and treatment activities in Ohio. Through established partnerships, efforts to improve the health status of Ohioans will succeed.

Developing an Action Plan for Heart Disease and Stroke Prevention in Ohio

The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition, is based on an approach that addresses individual behavior change on multiple levels of influence. The socio-ecological model calls for interventions to be implemented at the individual, interpersonal, organizational, community and public policy levels of influence. This population-based approach recognizes the relationship that exists between individuals and their environments.

While individuals are ultimately responsible for their health choices, these decisions are always made within a complex mix of social and environmental influences. Accordingly, the objectives and strategies included in this plan have been created to address the various levels within the socio-ecological model. This approach will ultimately result in sustainable behavior change that will reduce the incidence of and costs associated with CVD in Ohio.



The levels of influence within the socio-ecological model include:

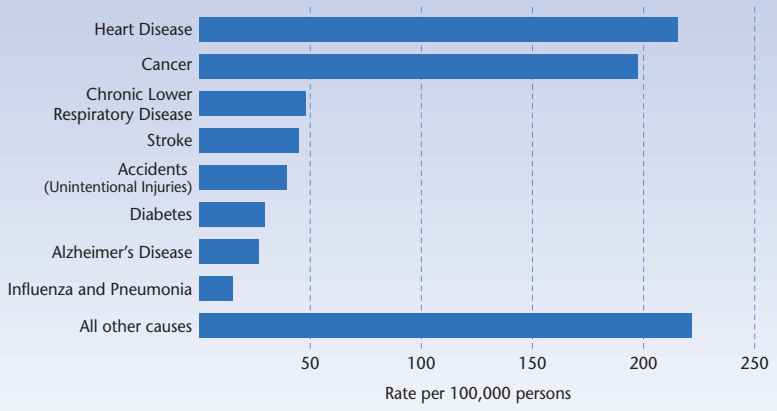
1. Individual: knowledge, attitude, beliefs and behaviors.
2. Interpersonal: family, friends, peers, co-workers.
3. Institutional/Organizational: rules, policies, procedures, incentives.
4. Community: social norms, social networks, standards, policies.
5. Policy Systems and Environments: local, state, federal government rules, regulations, law.

The Burden of Heart Disease and Stroke in Ohio

Heart Disease and Stroke Burden

In 2006, heart disease was the leading cause of death and stroke was the fourth-leading cause of death for Ohioans. In 2006, heart disease caused 26 percent (27,764) of Ohio deaths. In addition, there were more than 190,000 hospitalizations for heart disease, accounting for $4.8 billion in charges (2003). Despite decades of declining mortality rates for heart disease, it remains the leading cause of death for men and women in Ohio and in the United States (DeFiore-Hyrmer and Pryor, 2009). In 2006, stroke accounted for 5.4 percent (5,778) of Ohio deaths. In 2003, stroke caused 39,544 hospitalizations accounting for more than $717 million in billed charges (DeFiore-Hyrmer and Pryor, 2006). Ohio had the 14th worst heart disease mortality rate in the nation in 2006, and ranked 21st for stroke (Centers for Disease Control and Prevention [CDC], n.d).

Figure 1
Leading Caiuses of Death, Ohio 2006



Risk Factor Prevalence

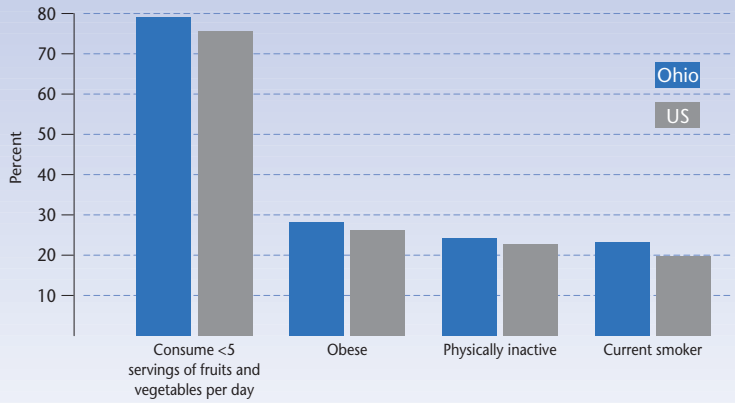
Risk factors are traits and lifestyle habits that increase the risk of disease. Non-modifiable risk factors for heart disease and stroke include age, sex, family history and race. These risk factors cannot be changed but are important characteristics that should be considered when evaluating a person's total risk for disease. Modifiable risk factors for heart disease and stroke include high blood pressure, diabetes, elevated blood cholesterol, physical inactivity, obesity, poor dietary habits and cigarette smoking. These risk factors can be improved with lifestyle changes, medical monitoring and treatment, or all three (CDC, n.d. b). All persons can reduce their risk of heart disease and stroke by addressing these risk factors. Control of risk factors is especially important for people who already have heart disease. Figure 2 shows the prevalence of modifiable risk factors among Ohioans. The prevalence of these modifiable risk factors is higher for Ohio, compared to the United States.[1]

[1] US median prevalence of the 50 State and DC

Eating a diet rich in fruits and vegetables can reduce a person's risk of developing heart disease (Wayne Rosamond, et al., 2008).

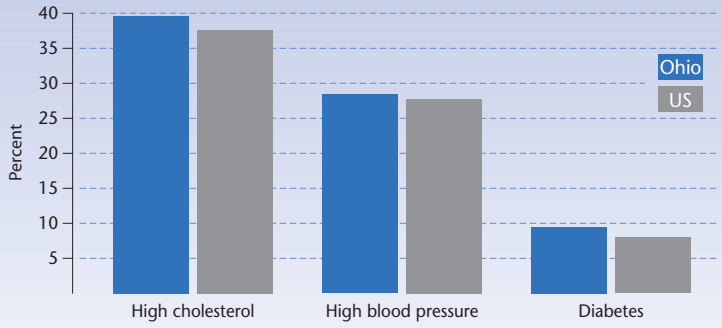
However, nearly 80 percent (79.2) of Ohio adults consumed fewer than five servings of fruits and vegetables per day. Smoking is one of the most preventable risk factors for stroke and heart disease and greatly elevates the risk of developing disease. Nearly one-quarter (23.1 percent) of Ohio adults currently smoke. In 2007, Ohio had the eighth-highest smoking prevalence in the nation. Obesity, defined as a body mass index of greater than or equal to 30, increases the risk for diabetes, high blood pressure, high cholesterol, heart disease and stroke. In 2007, nearly one-third of Ohio's population was obese (28.1 percent).

Figure 2
Prevalence of CVD Modifiable Risk Factors, Ohio and United States, 2007



Source: Behavioral Risk Factor Surveillance System

Figure 3
Prevalence of CVD Conditions, Ohio and United States, 2007



Source: Behavioral Risk Factor Surveillance System

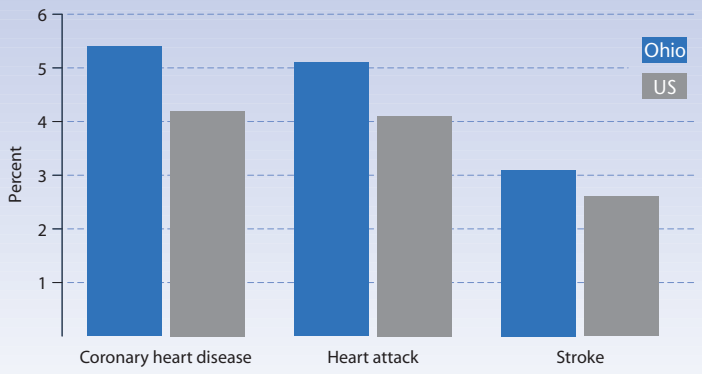
Cholesterol is a waxy substance produced by the liver and contained in certain foods. Accumulation of cholesterol in arteries can lead to narrowing of these vessels resulting heart disease and other complications (CDC, n.d. b). In 2007, nearly four out of every 10 Ohio adults (39.6 percent) reported having high cholesterol. Hypertension, commonly referred to as high blood pressure, increases a person's risk of developing heart disease, stroke and other serious conditions (CDC, n.d. b). In 2005, nearly one-third of Ohio adults reported having high blood pressure.

Diabetes is a serious disease that can greatly increase a person's risk of heart disease. Since 1997, the prevalence of diabetes has more than doubled from 4.7 percent to 9.5 percent. In 2007, nearly one in 10 Ohio adults had been diagnosed with diabetes.

Heart Disease and Stroke Prevalence

Coronary heart disease (CHD) is the most common form of heart disease in Ohio and the United States. CHD can lead to myocardial infarction (MI), more commonly known as a heart attack. Figure 4 illustrates the prevalence of CHD, MI and stroke in Ohio. The prevalence of heart disease and stroke are higher in Ohio, compared to the United States. The prevalence of CHD, MI and stroke differs by race and gender. Hispanic and white males have the highest prevalence of CHD in Ohio. Males also have the highest prevalence of MI. Males of other races, Hispanic males and black males reported the highest prevalence, compared to white (DeFiore-Hyrmer and Pryor, 2009). The prevalence of stroke also differs by race and gender. Black males and females have a higher prevalence, compared to white males and females (DeFiore-Hyrmer and Pryor, 2006). Adults of lower socioeconomic status have the highest prevalence of disease (DeFiore-Hyrmer and Pryor, 2009). The prevalence of CHD, MI and stroke were highest among adults with the lowest level of education completed and also those with lower incomes (Data not shown).

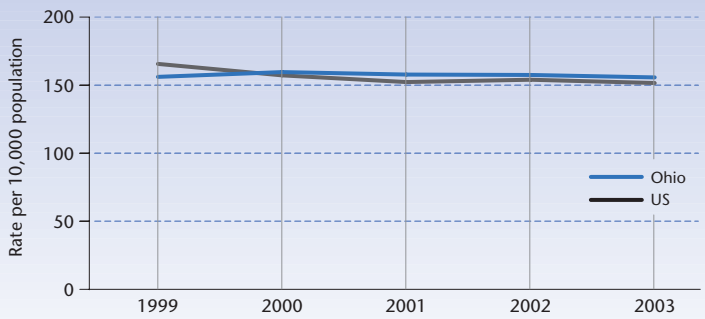
Figure 4
Prevalence of Heart Disease, Ohio and United States, 2007



Heart Disease and Stroke Hospital Discharges

Despite significant reductions in heart disease mortality, heart disease is a leading cause of hospitalization in Ohio. In 2003, there were 190,171 discharges with a principal diagnosis of heart disease. Figure 5 shows the trend in inpatient hospital discharges for the United States and Ohio from 1999–2003. The hospital discharge rate for Ohio and United States remained relatively constant. From 1999–2003, the number of discharges with heart disease listed as the principal diagnosis increased slightly from 182,564 to 190,171 (4 percent); while the age-adjusted rate remained constant at 156 discharges per 10,000 residents. The age-adjusted rate for the United States was 151.7 discharges per 10,000 (DeFiore-Hyrmer and Pryor, 2009).

Figure 5
Age-adjusted Hospital Discharge Rate for Heart Disease as First Listed Diagnosis, Ohio and United States, 1999–2003



In 2003, heart disease hospital discharge rates for males was (190 per 10,000 persons), compared to females (128 per 10,000 persons) (Figure 6). In 2003, the discharge rate for males was 48.4 percent higher, compared to females. While the majority of heart disease discharges were for persons over the age of 65 years; 30 percent of the discharges were for patient 45 to 64 years old (Defiore-Hyrmer and Pryor, 2009).

Between 1999–2003, the stroke hospital discharge rate decreased in Ohio (19 percent) and the United States (13 percent) (Figure 7). In 2003, there were 39,544 dicharges for stroke. More than 51 percent of of patients with a prinicpal diagonsis of ischemic stroke were discharged from the hospital to either a skilled nursing home facility, or some other medical facility for follow-up care (DeFiore-Hyrmer and Pryor, 2006).

Males had higher hospital discharge rates, compared to females (Figure 8). The majority of stroke discharges were for patients over the age of 65 years; persons under the age of 65 years accounted for 28 percent of stroke discharges (DeFiore-Hyrmer and Pryor, 2006).

Figure 6
Age-adjusted Hospital Discharge Rate for Heart Disease as First Listed Diagnosis by Sex, Ohio, 1999–2003

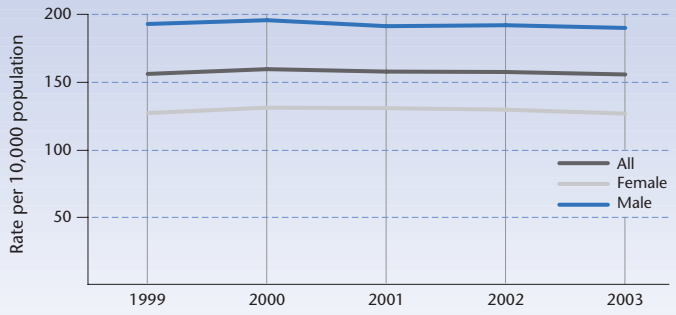


Figure 7
Age-adjusted Hospital Discharge Rate for Stroke as First Listed Diagnosis, Ohio and United States, 1999–2003

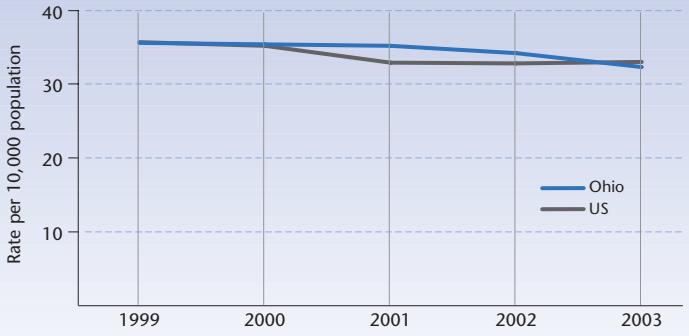
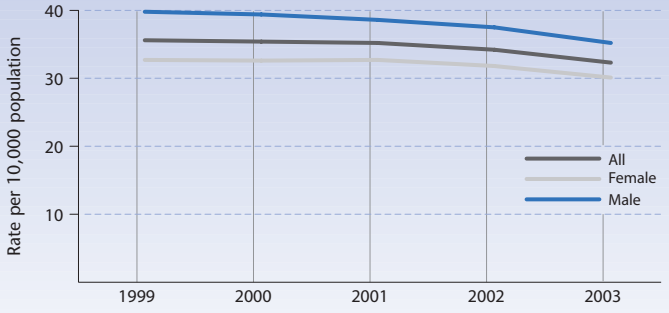


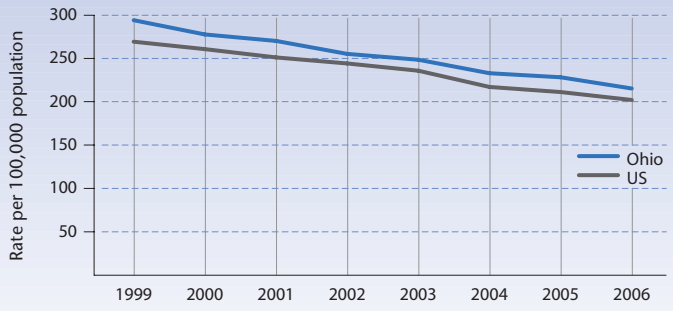
Figure 8
Age-adjusted Hospital Discharge Rate for Stroke as First Listed Diagnosis by Sex, Ohio, 1999–2003



Heart Disease and Stroke Mortality

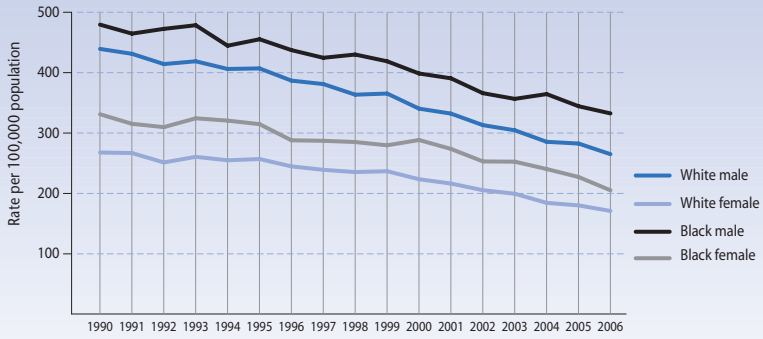
Since 1990, mortality from heart disease has declined significantly. The reductions in mortality are attributable to a combination of factors including advances in medical treatment and reduction in risk factors. From 1990 to 2006, heart disease mortality declined by 37 percent in Ohio from 341.3 to 215.2 per 100,000 persons. A similar reduction of 38 percent was observed in the US mortality rate, which declined from 321.8 to 200.2 per 100,000 persons (Figure 9) (Defiore-Hyrmer and Pryor, 2009).

Figure 9
Age-adjusted Heart Disease Mortality Rate, Ohio and United States, 1999–2006



Between 1990–2006, mortality rates from heart disease declined by 40 percent for white males, by 36 percent for white females, 38 percent for black females and by 30 percent for black males (Figure 10). Black and white males have the highest mortality rates from heart disease. In 2006, the mortality rate for black males was 332.5 deaths per 100,000 and 265.0 deaths per 100,000 for white males. This compared to 205.2 deaths per 100,000 for black females and 171.0 deaths per 100,000 for white females (Figure 10). In 2006, the heart disease mortality rate for black males was 25 percent higher, compared to white males and the mortality rate for black females was 20 percent higher, compared to white females (Figure 10) (Defiore-Hyrmer and Pryor, 2009).

Figure 10
Age-adjusted Heart Disease Mortality Rate, by Race and Gender, Ohio, 1999–2006



Ohio's stroke mortality rates over time have been slightly higher than U.S. stroke mortality rates. Between 1990-2006 the stroke mortality rate for Ohio and the United States decreased by 33 percent (Figure 11) (Defiore-Hyrmer and Pryor, 2006).

Stroke mortality rates for all racial-gender groups decreased between 1990–2006. Black males had the lowest reduction in mortality rates (20 percent), compared to white males (37 percent), white females (32 percent) and black females (32 percent). Black males also had the highest stroke mortality rates. In 2006, the stroke mortality rate for black males (66.8 per 100,000) was 55 percent higher, compared to white males (43 per 100,000) and white females (43 per 100,000). The stroke mortality rate for black females (54.5 per 100,000) was 27 percent higher, compared to white males and females. (Defiore-Hyrmer and Pryor, 2006).

Figure 11
Age-adjusted Stroke Mortality Rate, Ohio and United States, 1999–2006

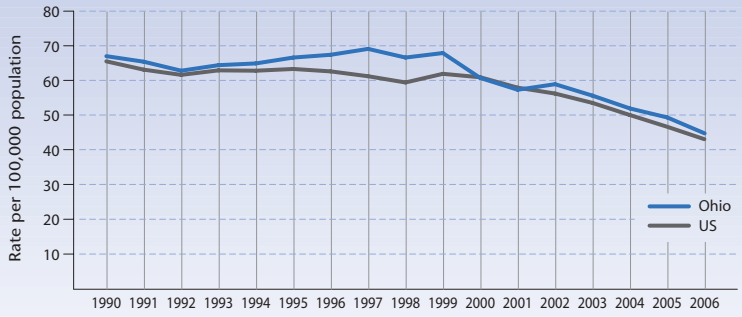
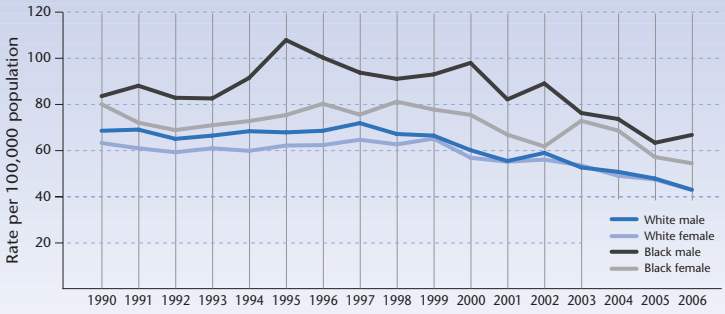


Figure 12
Age-adjusted Stroke Mortality Rate by Race and Gender, Ohio, 1999–2006



The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012

Goals, Objectives and Strategies

Statewide Plan Overarching Issue—Eliminating Disparities

Goal: All Ohioans will have equal access to culturally and linguistically appropriate quality heart disease and stroke treatment, care and resources.

The elimination of health disparities is directly related to the overall well-being of Ohio's population. Health disparities have been defined as "…differences in the incidence, prevalence, mortality and burden of diseases and other adverse health conditions that exist among specific population groups in the United States" (National Institutes of Health, cited in Carter-Pokras and Banquet, 2002). In Ohio, the African-American, Appalachian, Asian and Asian American, immigrant, Hispanic/Latino and refugee communities are priority populations because they are affected by health disparities at greater rates.

Importance of addressing health disparities

Racial and ethnic minority populations in Ohio have higher rates of disease, disability and death, compared to their white counterparts (Ramsini, 2005). Thus, health disparities could continue to increase with the growth of these populations. As a result, an enormous economic burden will be shouldered by all Ohioans related to poorly managed care, misdiagnoses and avoidable complications associated with treatment and care. For these reasons, it is worth investing in prevention efforts for all residents to produce cost savings, reduce disability and death due to disease, improve the quality of life and create opportunities to better allocate resources.

Addressing the issue:

It is important for the Ohio Department of Health, Heart Disease and Stroke Prevention Program (ODH HDSP) to engage organizations serving priority populations to assist in devising culturally appropriate strategies and plans that promote cardiovascular health.

A strategic planning session was conducted with representatives from organizations serving African-American, Appalachian, Asian and Asian American, immigrant, Hispanic/Latino and refugee populations. From the meeting, four key recommendations to address health disparities emerged:

- Create a needs assessment tool to identify commonly held beliefs and help to collect information regarding heart disease and stroke prevention within priority populations.
- Create and maintain meaningful working relationships with community-based agencies that serve priority populations.
- Institute or augment standards for a meaningful assessment of an organization's linguistic or cultural competence.
- Support policies that require norming culture health care service entities[2] and like organizations that receive funding, to integrate community health workers into prevention programs for heart disease, stroke and other chronic diseases.

[2] The norming culture is that which sets the norms around behavior, education and health for a given country. The United States' norming culture is sometimes referred to as the mainstream or dominant culture.

Additionally, the findings from the 2006 Burden of Stroke in Ohio Report indicated African-American males have a stroke death rate that is 53 percent higher than any other racial-gender group in Ohio (Defiore-Hyrmer and Pryor, 2006). This finding prompted ODH, HDSP to collaborate with the Ohio Commission on African-American Males (CAAM) to conduct age-stratified focus groups with African-American men in Cincinnati, Cleveland and Columbus. African-American males' knowledge, attitudes and beliefs about the control and treatment of high blood pressure; their perceptions of patient-provider relationships; and how they best receive health messages were assessed.

As a follow up, ODH HDSP conducted structured interviews with physicians and health care providers treating African-American males to explore provider practices; patient/provider communication strategies; and barriers related to the prevention, treatment and control of high blood pressure within the African-American male population.

Major findings from both studies noted:

- Younger African-American men (ages 19 to 29 years old) did not consider high blood pressure a major health issue. Lack of awareness and the financial cost of healthy eating were cited as deterrents in preventing and managing high blood pressure.
- African-American men described their family history of high blood pressure more easily for their maternal side of the family, compared to their paternal side.
- General feelings of negativity and pessimism toward health care providers and the health care system were expressed by African-American men.
- African-American men use traditional media (television, radio and newspaper) particularly those catering to the black community, to access health information. The information, however, must be tailored to meets the needs of various African-American male audiences.
- Tailored health education campaigns must be framed with culturally relevant messages and implemented with age-relevant strategies to increase their appeal and acceptance by African-American men.
- Seventy-five percent of health care providers interviewed had formal training or educational updates on the management of hypertension specific to the African-American population in the past five years.
- The number of different drug formularies, the lack of diversity in clinical trials and the inability to offer samples of prescription medication were cited by health care providers as some of the system barriers in treating African-American male patients for high blood pressure.

- The lack of culturally relevant educational materials and the cost of some support services not covered by health care insurance (referrals to mental and behavioral health care providers, social service providers, etc.) were cited as possible challenges/barriers health care providers face in treating African-American men for high blood pressure.
- Five different clinical practice guidelines were identified and used by health care providers to determine a "goal blood pressure reading" for patients with high blood pressure.
- Seventeen of 24 health care providers interviewed spend an average of 11 to 20 minutes with each patient during a single visit.
- Health care providers indicated their role in treating patients for high blood pressure was to: educate; prescribe medication; recommend lifestyle changes; and encourage patients to manage the condition.

There is still much work to be done to eliminate health disparities in Ohio. This will be accomplished only through the effort and dedication of all Ohioans. Findings and recommendations from ODH HDSP studies about health disparities have been integrated into related topic areas and are not isolated in a separate section. It is our aim that stakeholders, organizations, partners and the community will work collaboratively to maximize the ability to effectively address CVD health disparities within our state.

Goal 1

Support for Healthy Lifestyles

Support for Healthy Lifestyles

Heart disease and stroke are the first- and fourth-leading causes of death in Ohio, respectively, and affect families of all racial and economic backgrounds. What is encouraging, however, is most of the risk factors for heart disease and stroke can be prevented with lifestyle changes. By promoting healthy lifestyle behaviors such as controlling weight, being physically active, living tobacco free and eating healthy, the likelihood of developing heart disease or stroke can be reduced. It is also important to promote and support healthy lifestyle behaviors through policy development and developing supportive environments where people live, work and play: schools, work sites, communities and health care settings.

Support for Healthy Lifestyles

Goal 1: To establish and promote environments that support the prevention of heart disease and stroke, healthy eating, daily physical activity and tobacco-free lifestyles for all residents, with an emphasis on access to resources, services and priority populations.

Objective 1.0: By June 2012, increase the number of state laws and policies that support behaviors for a healthy lifestyle. (HP 12.1) (CDC Indicator 1.4.1)

Key Organizations:
- Action for Healthy Kids;
- Alliance for a Healthier Generation;
- American Cancer Society;
- American Dairy Association Mideast;
- American Heart Association;
- Healthy Ohio Business Council;
- Ohio Association of Health Commissioners;
- Ohio Department of Education;
- Ohio local health departments;
- Ohio Parks and Recreation Association;
- State Planning Committee for Health Education in Ohio (SPCHEO);

and the following Ohio Department of Health programs:
- Community Heart Health Projects;
- Diabetes Prevention and Control;
- Environmental Health;
- Heart Disease and Stroke Prevention;
- Tobacco Use Prevention and Cessation.

Strategies:
1. Support current efforts to maintain 100 percent smoke-free public places in Ohio.
2. Educate key policy makers on current legislative bills and policies related to nutrition, physical activity, tobacco and heart disease and stroke prevention.
3. Educate key policy makers about policy and environmental changes that will promote the prevention and control of heart disease, stroke and related risk factors.
4. Champion efforts to implement the For Your Health Ohio's Nutrition and Physical Activity Plan at state and local levels.
5. Champion efforts to implement the Ohio Obesity Prevention Plan.

Measuring Improvement
Indicator:
Number of state policies and laws that support healthy lifestyles.

Data Source
State of Ohio Legislative Database.

Measurable outcome(s)
Baseline Measure: 3 policies
2012 Target: By June 2012, the number of state policies enacted that support healthy lifestyles will increase to five.

Objective 1.1: By June 2012, increase the number partners promoting opportunities for physical activity, access to healthy eating options and tobacco-free environments. (HP 7.10) (CDC Indicator 1.4.2, CDC Indicator 1.4.3)

Key Organizations:
- American Cancer Society;
- American Heart Association;
- American Dairy Association Mideast;
- For Your Health Ohio;
- Ohio Commission on Minority Health;
- OhioHealth-Community and Congregational Partnership;
- Ohio Parks and Recreation Association;
- Ohio State University Extension;
- Wright State University—Center for Healthy Communities;

and the following Ohio Department of Health programs:
- Community Heart Health Projects;
- Diabetes Prevention and Control;
- Office of Healthy Ohio; Heart Disease and Stroke Prevention.

Strategies:
1. Support current efforts to implement For Your Health Ohio's Physical Activity and Nutrition Plan.
2. Educate and engage stakeholders to deliver culturally appropriate programs that provide resources for healthy eating options, physical activity, tobacco-free environments and family health history awareness.
3. Promote resources that encourage healthy food choices and increase consumption of fruits and vegetables, especially within priority populations and low socioeconomic communities.
4. Partner with organizations that represent or work with priority populations to provide targeted interventions aimed at preventing heart disease and stroke.
5. Promote the Ohio Department of Health Healthy Ohio Parks and Recreation and Healthy Community Awards.

Measuring Improvement
Indicator:
Number of partners actively promoting opportunities for physical activity, access to healthy eating options and tobacco-free environments.

Data Sources
Ohio Department of Health Healthy Ohio Community Award Inventory.

Ohio Department of Health Parks and Recreation Award Inventory.

Measurable outcome(s)
Baseline Measure: 28 partners
2012 Target: By June 2012, number of partners promoting health promotion and education initiatives for heart disease, stroke prevention and related risk factors will increase to 40.

Objective 1.2: By June 2012, increase the number of Ohio work sites with behavioral approaches and environmental supports that detect and manage heart disease, stroke and the related risk factors for employees.
(HP 7.5) (CDC Indicator 1.3.3, CDC Indicator 1.3.6)

Key Organizations:
– American Cancer Society;
– American Heart Association;
– For Your Health Ohio;
– Ohio Association for County Commissioners;
– Ohio Business Roundtable;
– Ohio Department of Administrative Services;
– Ohio Parks and Recreation Association;
– Ohio Department of Transportation;
– OhioHealth Community and Congregational Partnership;
– Ohio State University Extension;

and the following Ohio Department of Health programs:
– Community Heart Health Projects;
– Diabetes Prevention and Control;
– Heart Disease and Stroke Prevention;
– Healthy Ohio Business Council;
– Tobacco Use Prevention and Cessation.

Strategies:
1. Support efforts to implement For Your Health Ohio's Physical Activity and Nutrition plan for work sites.
2. Support efforts to implement the Ohio Obesity Prevention Plan for work sites.
3. Identify and disseminate information on model employee health promotion programs (including cost benefits) through outreach to Ohio employers, third-party administrators, health plans and purchasers.
4. Encourage Ohio work sites to implement comprehensive employee health promotion programs related to CVD, family health history, CVD-associated risk factors and health disparities.
5. Encourage work sites to implement policies and environmental supports that address high blood pressure, blood cholesterol and emergency response.
6. Promote the Ohio Department of Health's Healthy Ohio Worksite awards.
7. Promote the Ohio Tobacco Quit Line, 1-800-QUIT-NOW.

Measuring Improvement
Indicators:
Number of Ohio employers with policies:
1. Promoting employee participation in physical activity.
2. Promoting healthy food choices for employees.
3. Promoting employee tobacco cessation.
4. Encouraging employees to participate in the early detection and management of heart disease, stroke and related risk factors (including increased awareness of family health history).

Data Source
2009 Ohio Employer Health Survey.

Measurable outcome(s)
Baseline Measure: To be Determined (TBD)—Collection to begin summer 2009.

2012 Target: TBD upon completion of the Ohio Employer Health Survey.

Objective 1.3: By June 2012, maintain the percentage Ohioans who are aware of the importance of family health history in identifying individuals at greater risk for chronic diseases, including CVD.
(HP 7.7) (CDC Indicator 1.9.1)

Key Organizations:
- Ohio Academy of Family Physicians;
- Ohio Association of Community Health Centers;
- Ohio local health departments;
- Ohio Osteopathic Association;
- Ohio Regional Comprehensive Genetic Centers;
- Ohio Hospital Association;

and the following Ohio Department of Health programs:
- Heart Disease and Stroke Prevention;
- Genetics Services.

Strategies:
1. Develop and disseminate information through local partners about the importance of family health history.
2. Promote the United States Surgeon General's Web site and family health history tools.
3. Promote the Family Healthlink Web site—https://www.familyhealthlink.osumc.edu that collects and assesses familial risk for both coronary heart disease and cancer.
4. Encourage Ohioans to talk to their health care providers about their family health history.

Measuring Improvement
Indicators:
Percentage of Ohioans aware of the importance of family health history in identifying individuals at greater risk for chronic diseases, including CVD.

Data Source
BRFSS.

Measurable outcome(s)
Maintain awareness measure
The percentage of Ohioans aware of the importance of their family health history in identifying individuals at greater risk for chronic diseases, including CVD (94.7).

Objective 1.4: By June 2012, increase the percentage of Ohio schools implementing health promotion policies and environmental supports that encourage physical activity, tobacco cessation, healthy food preparation and healthy food choices.
(HP 7.2) (CDC Indicator 1.4.1)

Key Organizations:
- Alliance for a Healthier Generation Ohio;
- American Heart Association;
- American Cancer Society;
- American Dairy Association Mideast;
- Ohio Action for Healthy Kids;
- Ohio Department of Education;
- Ohio School Nurses Association;
- Ohio State University Extension;
- State Planning Committee for Health Education in Ohio (SPCHEO);
- Ohio Parks and Recreation;
- Ohio School Employees Health Care Board;

and the following Ohio Department of Health programs:
– Community Heart Health Projects;
– Office of Healthy Ohio;
– School and Adolescent Health.

Strategies:

1. Maintain current efforts to establish 100 percent tobacco-free campuses for all Ohio school districts.
2. Champion current policy efforts to establish minimum nutrition standards for foods and beverages sold and provided in schools.
3. Encourage schools to implement and evaluate federally mandated school wellness policies.
4. Engage comprehensive school health teams to promote the Ohio Department of Health's Buckeye Best Healthy School Award Program.
5. Support current efforts to adopt Ohio standards for quality health education for full implementation of the physical education standards for elementary, middle and high school students.
6. Support the efforts of For Your Health Ohio school components of the Ohio's Physical Activity and Nutrition Plan.
7. Support the efforts of the Ohio Obesity Prevention Plan.

Measuring Improvement

Indicators

Percentage Ohio schools with a copy of the districts school wellness policies.

Percentage of school districts with 100 percent tobacco-free school policies.

Percentage of Ohio schools participating in the Ohio Department of

Health's Buckeye Best Healthy School Award Program.

Data Source

Ohio Department of Education School Health Profile School Principal Questionnaire.

Ohio Department of Health Tobacco Use Prevention and Cessation Program Tobacco-Free School District Policies Database.

Ohio Department of Health Buckeye Best Healthy Schools Award Inventory.

Measurable outcome(s)

Baseline Measure: 89 percent
2012 Target: By June 2012, the number of schools with a copy of the districts' school wellness policies will increase to 100 percent.

Baseline Measure: 28 percent of local public school districts
2012 Target: By June 2012, the percentage of school districts implementing 100 percent tobacco-free school policies will increase to 50 percent.

Baseline Measure: 24.3 percent
2012 Target: By June 2012, the percentage of schools participating in the Ohio Department of Health Buckeye Best Healthy School Award Program will increase to 30 percent.

Goal 2

Risk Factor Reduction and Management

Risk Factor Reduction and Management

Risk factors for heart disease and stroke that cannot be changed include: age, sex, family history and genetics; while others such as high blood pressure, high cholesterol and diabetes, can be modified. It is important for health care providers to recognize and adhere to established clinical guidelines to address heart disease and stroke and for employers to assure work sites implement policies and environmental supports for their employees and families. Early detection, treatment and control of risk factors can prolong and improve the quality of life for people affected by heart disease and stroke.

Risk Factor Reduction and Management

Goal: All Ohioans will receive evidence-based, culturally appropriate identification and treatment of risk factors for heart disease and stroke (emphasis on priority populations).

Objective 2.0: By June 2012, increase the proportion of Ohioans achieving clinical standards for controlling high blood pressure and cholesterol. (HP 12.10, HP 12.15) (CDC Indicator 1.5.6, CDC Indicator 1.6.9, CDC Indicator 1.7.1, CDC Indicator 1.8.1)

Key Organizations:
– American Heart Association;
– Ohio Academy of Family Physicians;
– Ohio Commission on Minority Health;
– Ohio Hospital Association;
– Ohio KePro; Ohio Medicare;
– Business Coalition on Health;

and the following Ohio Department of Health programs:
– Heart Disease and Stroke Prevention;
– Ohio Paul Coverdell Acute Stroke Registry.

Strategies

1. Educate Ohioans on the importance of controlling risk factors for heart disease and stroke particularly among priority populations.
2. Encourage health care providers to adhere to established clinical guidelines for the diagnosis, treatment and care of high blood pressure and high cholesterol.
3. Encourage providers to track and follow-up with patient with elevated results and refer for treatment and care.

Measuring success
Indicators:

Percentage of Ohioans achieving clinical standards for controlled blood pressure.

Percentage of Ohioans achieving clinical standards for controlled cholesterol.

Data Sources

HEDIS.
Medicaid.

Measurable outcome(s)

Baseline Measure: Collection to begin summer 2009 and include percentage of members of commercial plans and Medicaid members.

2012 Target: Appropriate expectations for change will be determined as part of the initial effort.

Baseline Measure: Collection to begin summer 2009 and include percentage of CVD patients screened or whose LDL-C was controlled to greater than 100 mg/dl.

2012 Target: Appropriate expectations for change will be determined as part of the initial effort.

Objective 2.1: By June 2012, increase the number of Ohio work sites offering health promotion programs and insurance coverage for risk factors related to heart disease and stroke. (HP 7.5) (CDC Indicator 1.3.1, CDC Indicator 1.3.3, CDC Indicator 1.11.1)

Key Organizations:

– American Cancer Society;
– American Heart Association;
– For Your Health Ohio;
– Insurance Companies;
– Ohio Association of Community Health Centers;
– Ohio Chamber of Commerce;
– Ohio Department of Administrative Services;
– Ohio Partners for Cancer Control;

and the following Ohio Department of Health programs:

– Diabetes Prevention and Control;
– Heart Disease and Stroke Prevention;
– Healthy Ohio Business Council;
– Tobacco Use Prevention and Cessation.

Strategies:

1. Present evidenced-based health promotion tools to engage benefits purchaser groups to understand the burden of heart disease and stroke.
2. Encourage employers to provide health risk assessments and screenings for early detection and referral for risk factors related to heart disease and stroke.
3. Provide training and technical assistance to work sites to help in the development and implementation of policies and environmental supports that target the reduction of risk factors for heart disease and stroke.
4. Encourage employers and health plan contracts to include reimbursement for risk reduction and management initiatives and services.
5. Develop relationships with Healthy Ohio Regional Business Council chairs, benefits purchasers and health plans to disseminate information on cost-effectiveness of worksite health promotion programs.
6. Encourage employers to adopt recommendations included in "A Purchasers Guide to Clinical Preventive Services: Moving Science into Coverage."

Measuring success

Indicators:

Percentage of employers providing work site programs that include coverage for: tobacco cessation, blood pressure control, cholesterol control and chronic disease self-management.

Percentage of Ohio employers providing health insurance benefits that include: tobacco cessation, blood pressure control, cholesterol control and chronic disease self-management.

Data Source
2009 Ohio Employer Health Survey.

Measurable outcome(s)
Baseline Measure: To be determined (TBD)—Collection to begin summer 2009
2012 Target: To be determined (TBD) upon completion of the Ohio Employer Health Survey.

Objective 2.2: By June 2012, increase the percentage of health care providers who discuss genetic risk for certain diseases (including CVD) and provide patients with recommendations based on family history. (HP 7.7)

Key Persons/Organizations:
– Medical professionals;
– Ohio Academy of Family Physicians;
– Ohio Association of Community Health Centers;
– Ohio Hospital Association;
– Ohio Nurses Association;
– Ohio Regional Comprehensive Genetic Centers;
– Behavioral Coalition on Health;
and the following Ohio Department of Health programs:
– Heart Disease and Stroke Prevention;
– Genetics Services.

Strategies:
1. Collaborate with medical and professional organizations to conduct continuing education events about family history information as a risk indicator.
2. Conduct grand rounds in each regional comprehensive genetics center on importance of and strategies for collecting and interpreting family health history.
3. Provide resources and educational materials on genetics and the importance of family health history related to chronic disease risks to primary care physicians' offices and clinics.

Measuring Improvement Indicators:
Percentage of health care providers discussing genetic risk for certain diseases.

Percentage of health care providers providing patients with recommendations based on family history.

Data Source
BRFSS.

Measurable outcome(s)
Baseline Measure: 63.7 percent
2012 Target: By June 2012, the percentage of health care providers discussing genetic risk for certain diseases with their patients will increase to 67 percent.

Baseline Measure: 62.3 percent
2012 Target: By June 2012, the percentages of health care providers providing patients with recommendations based on family history will increase to 65 percent.

Goal 3

Acute Care

Acute Care

A comprehensive system of care is required to improve the outcomes for heart disease and stroke. This system should include public awareness of the signs and symptoms of a heart attack or stroke; a statewide comprehensive 9-1-1 system; an informed emergency medical system (EMS) and a team of first responders; hospital protocols outlining diagnosis, treatment and management of acute events; and adequate rehabilitation and long-term care services to effectively address acute events.

Goal: To develop a coordinated system of care in Ohio that provides timely and appropriate care for people experiencing acute heart attack and stroke events.

Objective 3.0: By June 2012, increase the number of Ohioans who recognize the warning signs and symptoms of heart attack and stroke and the importance of seeking prompt treatment (emphasis on priority populations). (HP 12.2, HP 12.8) (CDC Indicator 1.5.1)

Key Organizations:

- American College of Emergency Physicians—Ohio Chapter;
- American Heart Association;
- Behavioral Coalition on Health;
- National Medical Association—Ohio Chapter;
- Ohio Department of Public Safety (Emergency Medical Services);
- Ohio Hospital Association;
- Ohio Nurses Association;
- Ohio Osteopathic Association;
- Ohio State Medical Association;

and the following Ohio Department of Health programs:

- Ohio Paul Coverdell Acute Stroke Registry;
- Heart Disease and Stroke Prevention;
- Heart Disease and Stroke Prevention REACH Telemedicine Hospitals.

Strategies:

1. Promote public awareness campaigns about the signs and symptoms of heart attack and stroke and the need to call 9-1-1 to seek immediate care in the community and workplace.
2. Promote partnerships to incorporate messages regarding signs and symptoms and the importance of creating an emergency action plan, into existing health education opportunities.

Measuring Improvement:

Indicator:

Percentage of Ohioans who are aware of early signs of heart attack and to call 9-1-1 when someone may be having a heart attack or stroke.

Percentage of Ohioans who are aware of early signs of stroke and to call 9-1-1 when someone may be having a heart attack or stroke.

Data Source:

BRFSS.

Measurable outcome(s)

Baseline Measure: 33.3 percent
2012 Target: By June 2012, the percentage of Ohioans who know the early signs of heart attack and the appropriate actions to take will increase to 38 percent.

Baseline Measure: 41.4 percent
2012 Target: By June 2012, the percentage of Ohioans who know the early signs of stroke and the appropriate actions to take will increase to 45 percent.

Objective 3.1: By June 2012, maintain areas of advanced quality care and improve areas of lesser quality of care for heart attack and stroke as defined by current clinical guidelines.
(CDC Indicator 1.5.6)

Key Organizations:
- American College of Emergency Physicians—Ohio Chapter;
- American Heart Association;
- Behavioral Coalition on Health;
- National Medical Association—Ohio Chapter;
- Ohio Department of Public Safety (Emergency Medical Services);
- Ohio Hospital Association;
- Ohio Nurses Association;
- Ohio Osteopathic Association;
- Ohio State Medical Association;

and the following Ohio Department of Health programs:
- Ohio Paul Coverdell Acute Stroke Registry;
- Heart Disease and Stroke Prevention;
- Heart Disease and Stroke Prevention REACH Telemedicine Hospitals.

Strategies:
1. Promote training for first responders on recognition of signs and symptoms of heart attack and stroke and appropriate actions to take in the case of an acute event.
2. Promote training for emergency department and clinical staff on current clinical practice guidelines for heart disease and stroke treatment and management.
3. Increase the number of hospitals enrolled in the Ohio Paul Coverdell Acute Stroke Registry to improve the quality of care for acute stroke patients.
4. Enhance access to services for the diagnosis and treatment of heart disease and stroke in rural populations by expanding the Ohio REACH telemedicine network.

Measuring Improvement:
Indicators:

Percentage of improvement in areas of inferior quality care for stroke (defined).

Percentage of improvement in areas of inferior quality care for heart attack (defined).

Data Sources:

Ohio Department of Health Paul Coverdell Acute Stroke Registry.

Ohio KePro.

Measurable outcome(s)

Maintain quality of Acute Stroke Performance measures:

Percentage of stroke patients who receive DVT prophylaxis by end of Day 2 (95.3 percent).

Percentage of stroke patients who receive antithrombotics at discharge (97.5 percent).

Percentage of stroke patients who receive anticoagulation therapy for a trial fibrillation (91.6 percent).

Percentage of stroke patients who receive antithrombotic at end of hospital Day 2 (95.7 percent).

Percentage of stroke patients who receive smoking cessation counseling or medication (96.5 percent).

Percentage of stroke patients who receive rehabilitation assessment at discharge (92.1 percent).

Improve quality of Acute Stroke Performance measures:

Baseline Measure: 69.2 percent
2012 Target: By June 2012, the percentage of eligible stroke patients who receive IV tPA for ischemic strokes will increase to 90 percent.

Baseline Measure: 85.7 percent
2012 Target: By June 2012, the percentage of stroke patients who receive lipid-lowering therapy at discharge will increase to 90 percent.

Baseline Measure: 72.6 percent
2012 Target: By June 2012, the percentage of stroke patients who receive dysphagia screening prior to any oral intake will increase to 90 percent.

Baseline Measure: 70.2 percent
2012 Target: By June 2012, the percentage of stroke patients who receive stroke patient/caregiver education (all measures) will increase to 90 percent.

Baseline Measure: 94.5 percent
2012 Target: By June 2012, the percent of heart attack patients given smoking cessation advice/counseling (98.5 percent).

Maintain quality Heart Attack Process of Care Measures:

Percent of heart attack patients given aspirin at arrival (96.5 percent).

Percent of heart attack patients given aspirin at discharge (96.7 percent).

Percent of heart attack patients given beta blocker at arrival (94.0 percent).

Percent of heart attack patients given beta blocker at discharge (96.3 percent).

Improve quality of Heart Attack Process of Care Measure:

Baseline Measure: 83.8 percent
2012 Target: By June 2012, the percentage of heart attack patients given ACE Inhibitor or ARB for left ventricular systolic dysfunction (LVSD) will increase to 89 percent.

Objective 3.2: By June 2012, improve the quality of pre-hospital and inpatient health care services for heart attack and stroke events. (HP 12.3)

Key Organizations:
- American College of Emergency Physicians—Ohio Chapter;
- American Heart Association;
- National Medical Association—Ohio Chapter;
- Ohio Department of Public Safety (Emergency Medical Services);
- Ohio Hospital Association;
- Ohio Nurses Association;
- Ohio Osteopathic Association;
- Ohio State Medical Association;

and the following Ohio Department of Health programs:
- Ohio Paul Coverdell Acute Stroke Registry;
- Heart Disease and Stroke Prevention;
- Heart Disease and Stroke Prevention REACH Telemedicine Hospitals.

Strategies:
1. Promote linkages between hospital emergency departments and emergency medical service (EMS) providers.
2. Educate EMS providers about the rapid evaluation and transport of stroke patients.
3. Improve pre-arrival communication between EMS and hospitals for suspected stroke patients.
4. Support policy development that standardizes EMS treatment guidelines that are consistent with established clinical guidelines across the State of Ohio for stroke.
5. Adopt a standardized assessment tool for use in the pre-hospital setting to evaluate a possible stroke patient.
6. Encourage hospitals to develop written protocols for emergency care of acute stroke patients.

Measuring Improvement
Indicators:

Percentage of hospitals with written policies in place addressing acute stroke events.

Percentage of EMS providers with written stroke protocols for the management of suspected stroke patients.

Data sources

Ohio Hospital Association Stroke Capacity Survey.

Ohio Emergency Medical Services Stroke Care Survey.

Measurable outcome(s)

Baseline Measure: 63.9 percent
2012 Target: By June 2012, the percentage of hospitals with written policies/care pathways in place to address emergency care for acute stroke events will increase to 75 percent.

Baseline Measure: 95.8 percent
2012 Target: By June 2012, the percentage of EMS providers with written stroke protocols for the management of suspected stroke patients will increase to 100 percent.

Goal 4

Rehabilitation and Long-term Care

Rehabilitation and Long-term Care

Heart attack and stroke are the leading causes of long-term disability in Ohio. It is important for those affected to receive comprehensive assessment and access to available resources and services to help them cope with the effects of these acute events. The goal of rehabilitation is to improve function, so a heart attack or stroke survivor can become as independent as possible.

Long-term care provides many services and supports for individuals who require daily assistance with physical, cognitive or emotional needs. Services may be delivered in homes, in assisted living or supportive housing, in adult day centers or in nursing homes or other institutional settings. The services provided can help survivors and their families achieve the best possible long-term outcomes.

Rehabilitation and Long-term Care

Goal: Improve the access, coordination and the quality of acute care rehabilitation and long-term care services for all heart attack and stroke survivors in Ohio.

Rehabilitation

Objective 4.0: By June 2012, increase the percentage of Ohioans who receive timely and individually appropriate rehabilitation services for heart attack and stroke. (HP 1.15) (CDC Indicator 1.9.2)

Key Organizations:

- National Association of Social Workers—Ohio Chapter;
- Ohio Assisted Living Association;
- Ohio Department on Aging;
- Ohio Council for Home Care;
- Ohio Hospital Association;
- Ohio Physical Therapy Association;
- Ohio Association of Rehabilitation Facilities;
- Ohio Speech and Language-Hearing Association;
- Ohio Occupational Therapy Association;
- Ohio Association of Vascular and Pulmonary Rehabilitation;
- Ohio Academy of Nursing Home Facilities;

and the

- Ohio Department of Health, Heart Disease and Stroke Prevention Program.

Strategies

1. Encourage hospital inpatient rehabilitation units to become certified by CARF (Commission on Accreditation of Rehabilitation Facilities).
2. Encourage rehabilitation professionals to provide culturally appropriate educational materials for heart attack, heart failure and stroke survivors and their families.

3. Strengthen partnerships between physicians, hospitals and other (including home health care, cardiac rehabilitation, outpatient, inpatient rehabilitation) rehabilitation facilities to help heart attack and stroke survivors in receiving referrals for rehabilitation.
4. Encourage referrals to behavior change experts (e.g., dietitians, physical, occupational and speech therapists, exercise physiologists, smoking cessation counselors, social workers and psychologists) who are able to facilitate lifestyle changes following hospital discharge for heart attack, heart failure or stroke.
5. Encourage health care plans to expand the rehabilitation services options available for heart attack and stroke survivors.
6. Encourage health care plans to provide adequate reimbursement for rehabilitation and behavioral change programs.
7. Strengthen partnerships with social service agencies to obtain resources for stroke survivors and families.
8. Encourage employers to provide the level of rehabilitation coverage appropriate to the diagnosis (i.e., one level for routine musculoskeletal injury and another level for acute/severe events such as stroke—that require more than 15 visits).

Data Source:
BRFSS.

Measuring Improvement:
Indicator:
Percentage of Ohioans who participate in outpatient rehabilitation following a heart attack.

Percentage of Ohioans who participate in outpatient rehabilitation following a stroke.

Measurable outcome(s)
Baseline: 35.8 percent
2012 Target: By June 2012, the percentage of Ohioans who participate in outpatient rehabilitation following a heart attack will increase to 50 percent.

Baseline: 32.3 percent
2012 Target: By June 2012, the percentage of Ohioans who participate in outpatient rehabilitation following a stroke will increase to 40 percent.

Long-term Care

Objective 5.0: By June 2012, increase the number of facilities offering appropriate long-term care for stroke survivors. (HP 1.15) (CDC Indicator 1.9.2)

Key Organizations:
- National Association of Social Workers—Ohio Chapter;
- Ohio Department of Aging;
- Ohio Assisted Living Association;
- Ohio Association of Rehabilitation Facilities;
- Ohio Association of Vascular and Pulmonary Rehabilitation;
- Ohio Hospital Association;
- Ohio Occupational Therapy Association;
- Ohio Physical Therapy Association;
- Ohio Speech and Language—Hearing Association;
- Ohio Academy of Nursing Home Facilities;

and the
- Ohio Department of Health,
- Heart Disease and Stroke Prevention Program.

Strategies:

1. Ensure quality, person-centered, long-term care for Ohio stroke survivors.
2. Develop a system that ensures the transition of care when stroke patients are transferred between health care settings.
3. Encourage long-term care facilities providing stroke rehabilitation to become accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF) for stroke specialty.
4. Provide stroke-specific trainings to staff from skilled nursing facilities.
5. Reward facilities for providing excellence in long-term care for stroke survivors.

Measuring Improvement:

Indicators:

Percentage of long-term care facilities offering occupational therapy, physical therapy and speech therapy to stroke survivors.

Percentage of long-term care facilities accredited by CARF for stroke specialty.

Data Source:

Great Lakes Regional Stroke Network (GLRSN) Stroke Rehabilitation Survey.

Measurable outcome(s)

Baseline: 91.6 percent
2012 Target: By June 2012, the percentage of facilities offering occupational therapy for stroke survivors will increase to 95 percent.

Baseline: 93.3 percent
2012 Target: By June 2012, the percentage of facilities offering physical therapy for stroke survivors will increase to 95 percent.

Baseline: 83.3 percent
2012 Target: By June 2012, the percentage of facilities offering speech therapy for stroke survivors will increase to 90 percent.

Baseline: 2.8 percent
2012 Target: By June 2012, the percentage of facilities accredited by CARF for stroke specialty will increase to 5 percent.

Goal 5

Surveillance and Evaluation

Surveillance

Surveillance and evaluation are important components of The Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition. Surveillance and evaluation are critical in determining the best methods of achieving goals. Surveillance provides an ongoing, systematic, collection, analysis and interpretation of current efforts to reduce heart disease and stroke in Ohio, while evaluation helps determine where to focus current efforts and the level of success in achieving stated goals and objectives.

Surveillance

Goal: Collect comprehensive heart disease and stroke data that are readily available to assess, monitor and describe the burden of heart disease and stroke in Ohio.

Objective 6.0: By June 2012, modify or expand existing data sources to include more useful indicators that identify and track disparities related to heart disease and stroke.
(HP 23.4) (CDC Indicator 1.6.1, CDC Indicator 1.10.1, CDC Indicator 1.10.2)

Key Organizations:
- Ohio Commission on Minority Health;
- Ohio Department of Job and Family Services (Medicaid);
- Ohio Department of Public Safety;
- Ohio Hospital Association;
- Ohio KePRO;
- Ohio Regional Comprehensive Genetic Centers;

and the following Ohio Department of Health programs:
- Center for Public Health Statistics and Informatics;
- Heart Disease and Stroke Prevention;
- Ohio Paul Coverdell Acute Stroke Registry;
- Ohio REACH Telemedicine Network hospitals.

Strategies
1. Identify existing data sources and develop methodology to identify disparities in treatment and care across demographic variables.
2. Identify opportunities for data sharing among partners.
3. Create formal mechanisms for data sharing with organizations.
4. Ensure adequate resources to develop and maintain surveillance data systems.
5. Provide partners with training and education in data collection and dissemination.

Measuring Improvement
Indicator:
Number and type of indicators identified to track disparities.

Data Sources
Ohio REACH Telemedicine Network.
Ohio Paul Coverdell Acute Stroke System Registry.
Ohio Hospital Discharge Data.
HEDIS Measures.
Vital Statistics.
Ohio Family Health Survey.
BRFSS.

Measurable outcome

Baseline Measure: To be Determined (TBD).

2012 Target: Appropriate expectations for change will be determined as part of initial effort.

Objective 6.1: By June 2012, increase Ohioans' accessibility to data related to heart disease and stroke. (HP 23.2)

Key Organizations:

– American Heart Association;
– Ohio Commission on Minority Health; Ohio Department of Public Safety;
– Ohio Hospital Association;
– Ohio Heart Disease and Stroke Prevention Council;

and the following Ohio Department of Health programs:

– Center for Public Health Statistics and Informatics;
– Heart Disease and Stroke Prevention;
– Ohio Paul Coverdell Acute Stroke Registry;
– Ohio REACH Telemedicine Network hospitals.

Strategies

1. Create public access to heart disease and stroke treatment outcomes data via Web site postings and other appropriate media strategies.
2. Partner with local, regional and national organizations and partners to disseminate data.
3. Seek opportunities for data sharing through local, regional and statewide conferences, symposiums, etc.
4. Provide appropriate media outlets with data pertaining to heart disease, stroke and related risk factors for articles and stories.

Measuring Improvement

Indicator:

Number and type of Ohio heart disease and stroke data resources disseminated.

Data Sources

Ohio Hospital Compare Web site

Measurable outcome(s)

Baseline Measure: To be Determined (TBD).

2012 Target: Appropriate expectations for change will be determined as part of initial effort.

Objective 6.2: By June 2012, increase the number of hospitals reporting to the Ohio Paul Coverdell Acute Stroke Registry to improve the quality of care for stroke patients.

Key Organizations:

– American Heart Association;
– Ohio Hospital Association;

and the following Ohio Department of Health programs:

– Center for Public Health Statistics and Informatics;
– Heart Disease and Stroke Prevention;
– Ohio Paul Coverdell Acute Stroke Registry;
– Ohio REACH Telemedicine Network hospitals.

Strategies

1. Partner with key organizations and groups to increase the visibility of the Ohio Paul Coverdell Acute Stroke Registry.
2. Encourage additional hospitals to participate in the Ohio Paul Coverdell Acute Stroke Registry to collect new case reports of stroke
3. Create awareness about the registry via websites and other appropriate media and electronic outlets.

Measuring Improvement
Indicators

Number of hospitals reporting to the Ohio Paul Coverdell Acute Stroke Registry.

Number of new stroke case reported to the Ohio Paul Coverdell Acute Stroke Registry.

Data Sources

Ohio Paul Coverdell Acute Stroke Registry.

Measurable outcome(s)

Baseline Measure: 13 hospitals

2012 Target: By June 2012, the number of hospitals participating in the Ohio Paul Coverdell Acute Stroke Registry will increase to 50 hospitals.

Baseline Measure: 6000 cases

2012 Target: By June 2012, the Ohio Paul Coverdell Acute Stroke Registry will increase its collection of new case reports of stroke to a total of 15,000 cases.

Objective 6.3: Support the coordination of data sets to better describe the burden of heart disease and stroke.
(HP 23.14)

Key Organizations:

– American Heart Association;
– Ohio Heart Disease and Stroke Prevention Council;
– Ohio Commission on Minority Health;
– Ohio Department of Public Safety;
– Ohio Hospital Association;
and the following Ohio Department of Health programs:
– Center for Public Health Statistics and Informatics;
– Heart Disease and Stroke Prevention;
– Ohio Paul Coverdell Acute Stroke Registry;
– Ohio REACH Telemedicine Network hospitals.

Strategies

1. Promote linkages among local-, state- and federal-level data.
2. Improve communication among local, state and federal organizations related to data sharing and surveillance.
3. Support policy development that encourages data coordination and sharing.

Measuring Improvement
Indicators:

Number of systems with linked data sets.

Data Sources

Ohio Department of Public Safety—Emergency Medical System (EMS) Incident Reporting System.

Ohio Paul Coverdell Acute Stroke Registry.

REACH Telemedicine Network.

Ohio Hospital Discharge data.

Measurable outcome(s)

Baseline Measure: To be Determined (TBD).

2012 Target: Appropriate expectations for change will be determined as part of initial effort.

Evaluation

Process Evaluation

Process evaluation aims to control, assure or enhance the implementation of programs and activities. This evaluation involves tracking progress toward achieving objectives and activities that are directly linked to state plan goals. Process evaluation will assure the plan is being implemented as intended and will also pinpoint areas where improvements can be made. ODH HDSP staff, partners and stakeholders participating in the implementation of the plan will collect data to ensure process and successful program outcomes are achieved.

Examples of data that will be collected by ODH HDSP staff, partners and stakeholders related to state plan goals include the following:

Goal 1: To establish environments that support the prevention of heart disease and stroke; healthy eating; daily physical activity; and tobacco-free lifestyles for all residents, with an emphasis on access to resources, services and priority populations.

- Minutes of meetings related to policy and environmental changes to reduce risk factors for heart disease and stroke (work sites, school, community, health care settings).
- Evidence of policies established related to reducing risk factors for heart disease and stroke (emphasis on priority populations).
- Documentation of partners involved with creating strategies to prevent heart disease and stroke risk factors.
- Implementation of educational initiatives to increase awareness of risk factors of heart disease and stroke (emphasis on priority populations).
- Implementation of environmental supports to reduce risk factors for heart disease and stroke.
- Documentation of partners working collaboratively to implement strategies to address risk factors for heart disease and stroke.

Goal 2: All Ohioans will receive evidence-based, culturally appropriate identification and treatment of risk factors for heart disease and stroke.

- Documentation of trainings provided to health care professionals related to cultural and linguistic competency.
- Implementation of culturally appropriate education campaigns aimed at reducing disparities.
- Implementation of curriculum into health care facilities to improve cultural competence of health care providers and staff.
- Documentation of culturally appropriate materials being used to educate patients.
- Screening events held—documentation of number of participants, locations, etc.

Goal 3: To develop a coordinated system of care in Ohio that provides timely and appropriate care for people experiencing acute cardiac and stroke events.

- Number of new policies developed related to improving acute heart attack and stroke events.
- Evidence of new memorandums of understanding/partnership agreements established.
- Documentation of partner involvement.
- Reports written outlining findings and recommendations for creating a coordinated system for acute heart attack and stroke events in Ohio.

Goal 4: Improve the access, coordination and the quality of acute care rehabilitation and long-term care services for all heart attack and stroke survivors in Ohio.

- Documentation of new partnership agreements/memorandums of understanding established.
- Written reports of intervention strategies implemented (method, audience, impact, activities, etc.).
- Implementation of educational campaigns aimed at educating Ohioans about acute care services.
- Implementation of training for health care providers related to stroke rehabilitation and long-term care.

Goal 5: Collect comprehensive heart disease and stroke data that are readily available to assess, monitor and disseminate the burden of heart disease and stroke in Ohio.

- Identification of new heart disease and stroke indicators.
- Documentation of data disseminated to partners, key stakeholders and the general public.
- Written reports highlighting the burden of heart disease and stroke in Ohio.
- Documentation of media attention received on new burden documents and heart disease and stroke reports created.

Outcome Evaluation

Goal 1: To establish and promote environments that support the prevention of heart disease and stroke; healthy eating; daily physical activity; and tobacco-free lifestyles for all residents, with an emphasis on access to resources, services and priority populations.

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 1.0: Increase the number of state laws and policies that support behaviors for a healthy lifestyle.	3 policies	5 policies	State of Ohio Legislative Database	12.1 Reduce the number of coronary heart disease deaths	1.4.1 Number of legislative policies to support therapeutic lifestyle behaviors for blood pressure control
Objective 1.1: Increase the number of partners promoting opportunities for physical activity, access to healthy eating options and tobacco-free environments.	28 communities	40 communities	Ohio Department of Health Community Award Inventory; Ohio Department of Health Parks and Recreation Inventory	7.10 Community health promotion programs	1.4.2 Number of community interventions to control high blood pressure 1.4.3 Prevalence of health education activities to control high blood pressure
Objective 1.2: Increase the number of Ohio work sites with behavioral approaches and environmental supports that detect and manage heart disease, stroke and the related risk factors for employees.	1.–4. Collection begins summer 2009	1.–4. To be determined upon completion of the Ohio Employer Health Survey	Ohio Employer Health Survey	7.5 Work site health promotion programs	1.3.3 Proportion of workplaces with behavioral approaches for controlling high blood pressure and cardiovascular risk factors for employees 1.3.6 Proportion of workplaces with environmental changes to control high blood pressure
Objective 1.3: Maintain the percentage of Ohioans aware of the importance of their family health history in identifying individuals at greater risk for chronic diseases, including CVD.	94.7 percent	94.7 percent	Behavioral Risk Factor Surveillance System (BRFSS)	7.7 Patient and family education	1.9.1 Proportion of individuals with elevated cardiovascular risk

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 1.4: Increase the percentage of Ohio schools implementing health promotion policies and environmental supports that encourage physical activity, tobacco cessation, healthy food preparation and healthy food choices.	1. 89.0 percent 2. 28.0 percent 3. 24.3 percent	1.100.0 percent 2. 50.0 percent 3. 30.0 percent	Ohio Department of Education School Health Profile Survey; Ohio Department of Health Tobacco Use Prevention Cessation Program; Tobacco-Free School District Policies Database and the Ohio Department of Health Buckeye Best Healthy Schools Award Inventory	7–2. School health education	1.4.1 Number of legislative policies to support therapeutic lifestyle behaviors for blood pressure control

Goal 2: All Ohioans will receive evidence-based, culturally appropriate identification and treatment of risk factors for heart disease and stroke.

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 2.0: Increase the proportion of Ohioans achieving clinical standards for controlling high blood pressure and cholesterol.	1.–3. Collection begins summer 2009	Appropriate expectation for change will be determined as a part of initial effort	Health care Effectiveness Data and Information Set (HEDIS) Medicaid	12–10 High blood pressure control 12–15 Blood cholesterol screening	1.5.6 Proportion of individuals who have visited a health care provider according to clinical guidelines for treatment of high blood pressure 1.6.9 Proportion of individuals with high blood pressure in compliance with hypertensive medication regimens 1.7.1 Average blood pressure levels among individuals with high blood pressure 1.8.1 Proportion of individuals who have achieved blood pressure control

Objective 2.1: Increase the number of Ohio work sites that offer health promotion programs and insurance coverage for risk factors related to heart disease and stroke	Collection begins summer 2009	To be determined upon completion of the Ohio Employer Health Survey	Ohio Employer Health Survey	7.5 Work site health promotion programs	1.3.1 Proportion of work sites with employer payment for services to control high blood pressure and cardiovascular risk factors 1.3.3 Proportion of workplaces with behavioral approaches for controlling high blood pressure and cardiovascular risk factors for employees 1.11.1 Average annual employer costs attributable to high blood pressure and related health outcomes (per person with high blood pressure)
Objective 2.2: Increase the percentage of health care providers who discuss genetic risk for certain diseases (including CVD) and provide patients with recommendations based on family history.	1. 63.7 percent 2. 62.3 percent	1. 67.0 percent 2. 65.0 percent	Behavioral Risk Factor Surveillance System (BRFSS)	7.7 Patient and family education	N/A

Goal 3: To develop a coordinated system of care in Ohio that provides timely and appropriate care for people experiencing acute heart attack and stroke events.

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 3.0: Increase the number of Ohioans who recognize the warning signs and symptoms of heart attack and stroke and the importance of seeking prompt treatment (emphasis on priority populations).	1. 33.3 percent 2. 41.4 percent	1. 38 percent 2. 45 percent	Behavioral Risk Factor Surveillance System (BRFSS)	12–2 Knowledge of symptoms of heart attack and importance of calling 9-1-1 12–8 Knowledge of early warning symptoms of stroke	1.5.1 Proportion of individuals who are aware of the risks associated with uncontrolled high blood pressure (both causes and consequences)
Objective 3.1: Maintain areas of advanced quality of care and improve areas of lesser quality care for heart attack and stroke as defined by current clinical guidelines.	1. 69.2 percent 2. 85.7 percent 3. 72.6 percent 4. 70.2 percent 5. 94.5 percent 6. 83.8 percent	1. 90.0 percent 2. 90.0 percent 3. 90.0 percent 4. 90.0 percent 5. 98.5 percent 6. 89.0 percent	Ohio Paul Coverdell Acute Stroke Registry; Ohio KePRO	N/A	1.5.6 Proportion of individuals who have visited a health care provider according to clinical guidelines for treatment of high blood pressure
Objective 3.2: Improve the quality of pre-hospital and inpatient health care services for heart attack and stroke events.	1. 63.9 percent 2. 95.8 percent	1. 75.0 percent 2. 100.0 percent	Ohio Hospital Association Hospital Capacity Survey; Ohio Emergency Medical Services Stroke Care Survey	12-3 Increase the proportion of eligible patients with heart attacks who receive artery-opening therapy within an hour of symptom onset	N/A

Goal 4: Improve the access, coordination and the quality of acute care rehabilitation and long-term care services for all heart disease and stroke survivors in Ohio.

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 4.0: Increase the percentage of Ohioans who receive timely and individually appropriate rehabilitation services for heart attack and stroke.	1. 35.8 percent 2. 32.3 percent	1. 50.0 percent 2. 40.0 percent	Behavioral Risk Factor Surveillance System (BRFSS)	1.15 Long-term care services	1.9.2 Average level of quality of life

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 5.0: Increase the number or facilities offering appropriate long-term care for stroke survivors.	1. 91.6 percent 2. 93.3 percent 3. 83.3 percent 4. 2.8 percent	1. 95.0 percent 2. 95.0 percent 3. 90.0 percent 4. 5.0 percent	Great Lakes Regional Stroke Network Stroke Rehabilitation Survey	1.15 Long-term care services	1.9.2 Average level of quality of life

Goal 5: Collect comprehensive heart disease and stroke data that are readily available to assess, monitor and disseminate the burden of heart disease and stroke in Ohio.

Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Objective 6.0: Modify or expand existing data sources to include more useful indicators that identify and track disparities related heart disease and stroke.	TBD	Appropriate expectations for change will be determined as part of initial effort	Ohio REACH telemedicine Network System; Ohio Paul Coverdell Acute Stroke Registry; Hospital Discharge Data; Health Care Effectiveness Data and Information Set (HEDIS); Behavioral Risk Factor Surveillance System (BRFSS); Ohio Family Health Survey; Vital Statistics	23.4 Data for all population groups	1.6.1 Degree of reduction in disparities in high blood pressure risk factors between general and priority populations 1.10.1 Degree of reduction in disparities in cardiovascular morbidity associated with high blood pressure between general and priority populations 1.10.2 Degree of reduction in disparities in cardiovascular mortality associated with high blood pressure between general and priority populations

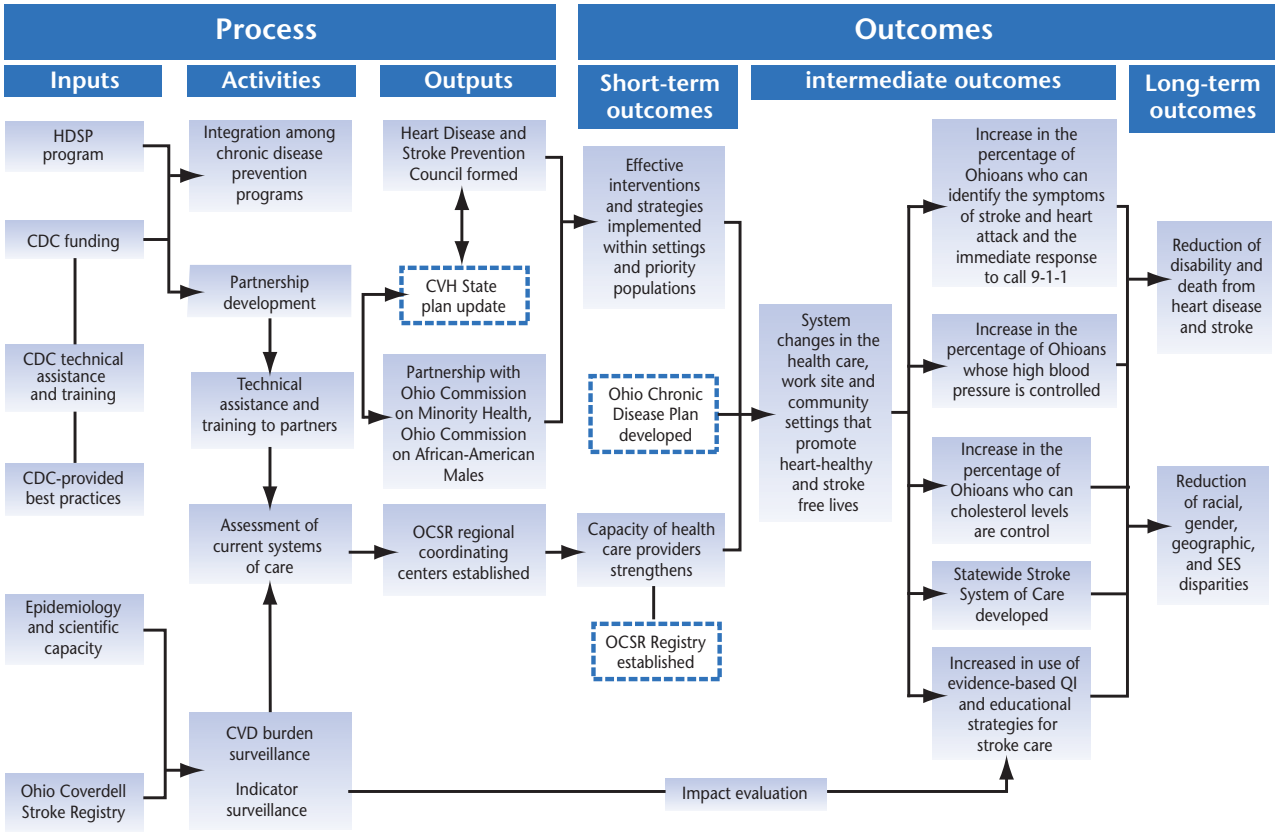
Objective	Baseline (number/percentage)	2012 Target (number/percentage)	Data Source (s)	HP2010 Objectives	CDC Policy and System Outcome Indicators
Ojective 6.1: Increase Ohioans' accessibility to data related to heart disease and stroke.	TBD	Appropriate expectations for change will be determined as part of initial effort	Ohio Hospital Compare Web site	23.2. Public access to information and surveillance data	N/A
Objective 6.2: Increase the number of hospitals reporting to the Ohio Paul Coverdell Registry Program to improve the quality of care for stroke patients.	1. 13 hospitals 2. 6,000 cases	1. 50 hospitals 2. 15,000 cases	Ohio Paul Coverdell Acute Stroke Registry	N/A	N/A
Objective 6.3: Support the coordination of data sets to better describe the burden of heart disease and stroke.	TBD	Appropriate expectations for change will be determined as part of initial effort.	Ohio Department of Public Safety-Emergency Medical System (EMS) Incident Reporting System; Ohio Paul Coverdell Acute Stroke Registry; REACH Telemedicine Network; Hospital discharge data	23.14 Access to epidemiology services	N/A

Developing an Action Plan for Heart Disease and Stroke Prevention in Ohio

Developing an Action Plan for Heart Disease and Stroke Prevention in Ohio

It was important for ODH HDSP to select and implement a framework to engage partners to achieve the goals of preventing and managing heart disease, stroke and their respective risk factors. ODH HDSP created a logic model to assist in the planning, management and evaluation of program interventions and activities. This graphical representation communicates the intended effects of program activities and the expected results. ODH HDSP realizes logic models are not static and must be revised periodically to reflect changes in context, resources, activities and expectations.

Ohio Disease and Stroke Prevention Program Logic Model 2007–2012



Disseminating the State Plan, Updating and Charting Progress

ODH HDSP and our partners believe all Ohioans play a role in preventing heart disease and stroke. It is our hope that partners and stakeholders will embrace the plan and commit to its implementation. As such, ODH HDSP will work collaboratively with partners on the Ohio Heart Disease and Stroke Council to distribute the plan to key stakeholders and other interested partners.

Over the next five years, ODH HDSP, in consultation with our partners, the Ohio Heart Disease and Stroke Prevention Council and key stakeholders, will evaluate the plan's progress to determine the extent of its implementation and recommend changes or updates as necessary. Revisiting the plan periodically will also allow ODH to appropriately focus prevention activities and refine workplan objectives. Revisions to the entire state plan will be completed every five years with input and recommendations from our partners around the state.

Call to Action

Call to Action

The Ohio Heart Disease and Stroke Prevention Plan 2008–2012: Call to Action

The Ohio Heart Disease and Stroke Prevention Plan 2008–2012, Second Edition, lays out broad goals and specific objectives that will aid in reducing the burden of heart disease and stroke for Ohioans, but everyone's effort is needed to accomplish these goals. Partners and stakeholders throughout the state must work collectively to achieve these goals. There are, however, small steps everyone can take now to assist in the ultimate goal of eliminating death and disability due to heart disease and stroke.

Below are a few examples of what you can do to assist in realizing the stated goals and objectives. Use these examples and think of other actions you can take to reduce the burden of heart disease and stroke throughout Ohio.

If you are a hospital:

Collaborate to sponsor community blood pressure and cholesterol screening events.

Promote training for care staff on current clinical practice guidelines for heart disease and stroke treatment and management and cultural competency.

Conduct community education events to increase awareness of risk factors for heart disease and stroke and increase knowledge of signs and symptoms and the need to call 9-1-1 quickly.

If you are an employer:

Implement work site policies and environmental supports for heart disease and stroke prevention, including 100 percent tobacco-free campuses, healthy food options and increased opportunity for physical activity.

Partner with hospitals to host blood pressure and cholesterol screening events.

Assure employee awareness of signs and symptoms of heart attack, stroke, the need to call 9-1-1 and the use of CPR and AEDs (automated external defibrillator).

Assess benefit plans and determine if adequate coverage is provided for primary and secondary heart disease and stroke services.

If you are a school:

Raise awareness of signs and symptoms of heart attack and stroke and the need to call 9-1-1. Encourage CPR training for staff and AED implementation within schools with established need.

Implement policies and environmental supports for heart disease and stroke prevention including 100 percent tobacco-free campuses, healthy food options and physical activity.

If you are a health care provider:	Provide heart disease and stroke awareness information to patients. Promote blood pressure and cholesterol screening, management and follow-up among patients. Treat and manage patients' conditions to current clinical guidelines for heart diseases and stroke.
If you are an EMS provider:	Become familiar with the signs and symptoms of stroke and heart attack. Support policy development of statewide, standardized EMS treatment protocols that are consistent with established clinical guidelines for heart attack and stroke.
Local and community:	Become familiar with the signs and symptoms of stroke and heart attack and the need to call 9-1-1. Support the implementation of E9-1-1 systems.

How to endorse the Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition

By endorsing the Ohio Plan to Prevent Heart Disease and Stroke 2008–2012, Second Edition you become a champion for cardiovascular health. You will be acknowledged on the state plan and in plan-related promotional material. Your contact information will remain confidential and will not be used for any other purposes. Registering as a champion ensures you will have up-to-date information on the plan's implementation. ODH HDSP will provide feedback about implementation and also evaluate and make recommendations for future activities. You can request a plan by contacting HealthyO@odh.ohio.gov

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National Heart Lung and Blood Institute (NHLBI)

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Ohio Department of Health, Heart Disease and Stroke Prevention

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The National Committee for Quality Assurance

- HEDIS and Quality Measurement. Retrieved January 16, 2009, at http://www.ncqa.org/tabid/59/Default.aspx.

Data Sources for Goal 1 figures and tables

Risk Factor Graphs

Source: Behavioral Risk Factor Surveillance System. Ohio Data:Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health. U.S. Data retrieved from CDC BRFSS at http://apps.nccd.cdc.gov/brfss/

Hospital Discharge Graph

Source: Ohio Hospital Association. Analysis completed by the Center For Public Health Statistics and Informatics,Ohio Department of Health. U.S. Data retrieved from Health Data Interactive at http://www.cdc.gov/nchs/hdj.htm The direct age-adjusted rates were calculated using the post-censal bridged estimates for 2006 as the denominator and to U.S. 200 standard population for age adjustment.

Heart disease defined as ICD-9 codes: 390--398, 402, 404, 410-429. Stroke defined as ICD-9 codes:430-438.

Ohio Mortality and Leading Causes of Death graphs

Source: Center for Public Health Statistics and Informatics, Ohio Department of Health.

Heart Disease and Stroke Mortality Graphs

Sources: Center for Public Health Statistics and Informatics, Ohio Department of Health.U.S. mortality rates obtained from CDC Wonders at http://wonder.cdc.gov/mortSQL.html.

Resources

American Heart Association
Great Rivers Affiliate
5455 North High Street
Columbus, OH 43214
http://strokeassociation.org
http://www.americanheart.org

American Cancer Society
Ohio Division Inc.
555 Frantz Road
Dublin, OH 43017
http://www.cancer.org

American Diabetes Association
471 East Broad Street
Suite 1630
Columbus, OH, 43215
http://www.diabetes.org

Centers for Disease Control
and Prevention
Division of Heart Disease
and Stroke Prevention
(Mail Stop K–47)
4770 Buford Hwy, NE
Atlanta, GA 30341–3717
http://www.cdc.gov/DHDSP/
library/fs_strokesigns.htm

National Association of
Chronic Disease Directors
2872 Woodcock Blvd, Suite 220
Atlanta, GA 30341
http://www.chronicdisease.org

National Center for Chronic Disease
Prevention and Health Promotion
4770 Buford Hwy. NE
MS K-40
Atlanta, GA 30341-3717
http://www.cdc.gov/nccdphp

National Heart Blood and Lung Institute
P.O. Box 30105
Bethesda, MD 20824-0105
http://www.nhlbi.nih.gov

National Forum for Heart Disease
and Stroke Prevention
2872 Woodcock Blvd. Suite 220
Atlanta, GA 30341
http://www.hearthealthystrokefree.org

National Institute of Neurological
Disorders and Stroke
P.O. Box 5801
Bethesda, MD 20824
http://www.ninds.nih.gov

Great Lakes Regional Stroke Network
1645 West Jackson Blvd., Suite 400
Chicago, IL 60612
http://www.uic.edu/depts/glstrknet

Ohio Department of Health
246 North High Street
Columbus, OH 43215
http://www.odh.ohio.gov

Ohio Department of Health
Heart Disease and
Stroke Prevention Program
246 North High Street
Columbus, OH 43215
http://www.odh.ohio.gov/odhPrograms/
hprr/cardio/hdsp.aspx

Ohio Department of Health
Paul Coverdell Acute Stroke
Registry Program
246 North High Street
Columbus, OH 43215
http://www.odh.ohio.gov/odhPrograms/
hprr/cardio/hdsp.aspx

Appendices

Appendix A:
Ohio Heart Disease and Stroke Prevention 2008–2012
Prevention Plan Partners

Ohio Heart Disease and Stroke Prevention Council

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American Cancer Society

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Brian A. Stettler, ME
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American Heart Association
Ohio Great Rivers Affiliate

Cresha Auck-Foley, MA
American Heart Association
Ohio Great Rivers Affiliate

Melanie Arum, MPH
American Heart Association
Ohio Great Rivers Affiliate

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Get with the Guidelines

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Karen Bakies, RD, LD
Dairy Council Mid East

Tom Houston, MD
Ohio Academy of Family Physicians

Barb Emmets, PT
Debbie Link, MS, PT
Ohio Association of Rehabilitation Facilities

Lynn Boydelatour
Ohio Department of Natural Resources

Tim Erskine, EMT-P
Ohio Emergency Medical Services

Greg Gandy
Ohio Department of Transportation

Kate Whitman, RN, BSN
Ohio Health-Community Partnership Outreach

Rosalie Weakland, RN
Ohio Hospital Association

Josue Vicente
Ohio Hispanic Coalition

Rita Bowling, RN, MSN, MNBA
Ohio KePro

Jane Schetter, BSN, MSN
Ohio Nurses Association

Albert M. Solomon, DO
Ohio Osteopathic Association

Cheryl Markino
Ohio Osteopathic Association

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Appendix B: **Glossary**

Age-adjusted rates: Age-adjustment is a statistical process applied to rates of disease, death, injuries or other health outcomes that allows communities with different age structures to be compared.

Acute care: Medical treatment given to individuals whose illness or health problems are short term (usually under 30 days) or episodic. Acute care facilities are those hospitals that mainly serve persons with short-term health problems.

Automated external defibrillator (AED): A small, lightweight device that analyzes a person's heart rhythm (through special pads placed on the torso) and can detect ventricular fibrillations, also referred to as sudden cardiac arrest. The device prompts the operator to deliver a harmless electrical shock if needed. AEDs are designed to be used by lay rescuers or first responders.

Blood cholesterol: The blood concentration of a family of lipid or "fatty" molecular compounds obtained directly from the diet or produced in the body from fatty dietary components. Subtypes of cholesterol differ in their relation to cardiovascular disease risk; high-density lipoprotein (HDL) cholesterol is considered "good" and low-density cholesterol (LDL) is considered "bad."

Behavioral Risk Factor Surveillance System (BRFSS): A state-based, Centers for Disease Control and Prevention (CDC)-sponsored system of health surveys that generate information about health risk behaviors and attitudes, clinical preventive practices and health care access primarily related to chronic disease and injury.

Blood pressure: The force or pressure exerted by the heart in pumping blood; the pressure of blood in the arteries.

Body mass index (BMI): A measurement of weight in relation to height. It is calculated as weight (in kilograms) divided by the square of height (in meters). It correlates highly with body fat in most people. A BMI of less than 25 is considered normal, 25–29 is overweight and 30 or greater is obese.

Buckeye Best Healthy School Awards Program: The program is sponsored by the Ohio Department of Health in partnership with the American Cancer Society – Ohio Division as part of the Ohio Department of Health's Healthy Ohio campaign. The award is designed to recognize those schools whose policies and practices reflect a high priority on healthy outcomes for children and staff. This self-reported survey is administered yearly and is designed to measure a school's progress over time.

Cardiovascular disease (CVD): May refer to any of the disorders that can affect the circulatory system, but often means coronary heart disease (CHD), heart failure and stroke, taken together.

Cholesterol: A waxy, fat-like substance found in the bloodstream and produced in the liver.

Clinical practice guidelines: Systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.

Continuum of care: A comprehensive set of services ranging from preventive and ambulatory services to acute care to long-term and rehabilitative services. By providing a continuum of care, the continuum focuses on prevention and early intervention for those who have been identified as high risk and provides easy transition from service to service as needs change.

Cardiopulmonary resuscitation (CPR): Cardiopulmonary resuscitation or CPR, is emergency first aid for an unconscious person whose breathing and pulse have stopped. CPR is commonly taught to ordinary people who may be the only ones present in the crucial few minutes before emergency personnel are available.

Diabetes (or diabetes mellitus): A metabolic disorder resulting from insufficient production or utilization of insulin. Cardiovascular disease is a common complication.

Evaluation: A system that measures components critical to the success of the heart disease and stroke program, including surveillance, program monitoring and formative evaluation. Evaluation should address capacity building, strategy implementation and changes in policies and the physical and social environments affecting cardiovascular health.

Evidenced-based programs: Programs that have shown the greatest levels of effectiveness are those that have established generalizability (replicated in different settings and with different populations over time) through research studies.

Health disparities: Differences in the burden and impact of disease among different populations defined, for example, by sex, race or ethnicity, education, income, disability, place of residence or sexual orientation.

Healthy People 2010: A document that presents health-related goals and objectives for the United States to be achieved by the year 2010.

Heart attack: An acute event in which the heart muscle is damaged because of a lack of blood flow from the coronary arteries, typically accompanied by chest pain and other warning signs, but sometimes occurring without recognized symptoms (i.e., “silent heart attack”).

Healthy Ohio: A key component of Gov.Ted Strickland’s comprehensive health care reform initiative located at the Ohio Department of Health. The goal of the program is to improve the health of all Ohioans and create a better quality of life, assure a more productive

workforce and equip students for learning, while also contributing to the more efficient and cost-effective use of medical services.

Heart disease: Any affliction that impairs the structure or function of the heart (e.g. atherosclerotic and hypertensive diseases, congenital heart disease, rheumatic heart disease, cardiomyopathies).

Health care effectiveness data and information set (HEDIS): Health care systems' evaluation of the effectiveness of their care in managing blood pressure, cholesterol, diabetes and smoking cessation in their constituencies.

Hemorrhagic stroke: Occurs when blood vessels rupture and cause bleeding in the brain or in the space between the brain and the skull.

High blood pressure: A chronic condition in which the pressure in the arterial circulation is greater than desired and associated with increased risk for heart disease, stroke, chronic kidney disease and other conditions. Blood pressure is considered "high" if systolic pressure (measured at the peak of contraction of the heart) is greater than140 mm Hg or if diastolic pressure (measured at the fullest relaxation of the heart) is greater than 90 mm Hg.

Incidence: The number of new cases of disease occurring in a population of given size within a specified time interval (e.g., the average annual incidence of stroke for women in during 1985–1989 was approximately 120/100,000 population).

Ischemic stroke: Caused by the blockage of arterial blood supply to the brain. Ischemic strokes account for 70 to 80 percent of all stroke deaths.

Morbidity: Disease; any departure, subjective or objective, from a state of physiological or psychological health and well-being.

Mortality rate: Rate of death expressed as the number of deaths occurring in a population of a given size within a specified time interval.

Norming culture: That which sets the norms around behavior, education and health for a given country. The United States' norming culture is sometimes referred to as the mainstream or dominant culture.

Obesity: A condition characterized by excessive body fat. Usually defined as a body mass index of 30 or higher.

Paul Coverdell Acute Stroke Registry: A state-based registry that measures and tracks acute stroke care. The data from the registry are used to improve the quality of care for Ohio residents.

Physical inactivity: lack of habitual activity sufficient to maintain good health, resulting in an unfavorable balance between energy intake and expenditure and fostering the development of overweight or obesity and other risk factors for heart disease and stroke.

Policy and environmental change: An intervention approach to reducing the burden of chronic disease that focuses on enacting effective policies (e.g., laws, regulations, formal and informal rules) or promoting environmental change (e.g., changes to economic, social or physical environment).

Prevalence: The frequency of a particular condition within a defined population at a designated time (e.g., 12.6 million Americans living with heart disease in 1999 or 36.4 percent black men aged 20–74 years found to have hypertension in a survey conducted in 1988–1994).

Primary CVD prevention: A set of interventions, including the detection and control of risk factors, designed to prevent the first occurrence of heart attack, heart failure or stroke among people with identifiable risk factors

Priority populations: Groups at especially high risk for cardiovascular disease (CVD), such as those identified by sex, race or ethnicity, education, income, disability, place of residence or sexual orientation.

Remote Evaluation of Acute IsCHemic Stroke Telemedicine Network: The Remote Evaluation of Acute IsCHemic Stroke (REACH) system is a Web-based, hub-and-spoke telemedicine system that provides support solutions for remote diagnosis and evaluation of acute stokes.

Rehabilitation: An intervention approach designed to limit disability among survivors of CVD events and reduce their risk for subsequent events.

Risk factor: An individual characteristic associated with increased frequency of specified health problems; for example, high LDL cholesterol, high blood pressure and diabetes are all associated with CVD.

Secondary CV prevention: A set of interventions aimed at survivors of acute CVD events (e.g., heart attack, heart failure or stroke or others with known CVD in which long-term case management is used to reduce disability and risk for subsequent CVD events.

Stroke: Sudden interruption of blood supply to the brain caused by an obstruction or rupture of a blood vessel. There are two types of stroke: ischemic and hemorrhagic.

Appendix C: **Teatment Guidlines**

Reference Card From the

Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7)

EVALUATION

Classification of Blood Pressure (BP)*

Category	SBP mmHg		DBP mmHg
Normal	<120	and	<80
Prehypertension	120–139	or	80–89
Hypertension, Stage 1	140–159	or	90–99
Hypertension, Stage 2	≥160	or	≥100

* See Blood Pressure Measurement Techniques (reverse side)
Key: SBP = systolic blood pressure DBP = diastolic blood pressure

Diagnostic Workup of Hypertension

- Assess risk factors and comorbidities.
- Reveal identifiable causes of hypertension.
- Assess presence of target organ damage.
- Conduct history and physical examination.
- Obtain laboratory tests: urinalysis, blood glucose, hematocrit and lipid panel, serum potassium, creatinine, and calcium. Optional: urinary albumin/creatinine ratio.
- Obtain electrocardiogram.

Assess for Major Cardiovascular Disease (CVD) Risk Factors

- Hypertension
- Obesity (body mass index ≥30 kg/m²)
- Dyslipidemia
- Diabetes mellitus
- Cigarette smoking
- Physical inactivity
- Microalbuminuria, estimated glomerular filtration rate <60 mL/min
- Age (>55 for men, >65 for women)
- Family history of premature CVD (men age <55, women age <65)

Assess for Identifiable Causes of Hypertension

- Sleep apnea
- Drug induced/related
- Chronic kidney disease
- Primary aldosteronism
- Renovascular disease
- Cushing's syndrome or steroid therapy
- Pheochromocytoma
- Coarctation of aorta
- Thyroid/parathyroid disease

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National Heart, Lung, and Blood Institute

TREATMENT

Principles of Hypertension Treatment

- Treat to BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.
- Majority of patients will require two medications to reach goal.

Algorithm for Treatment of Hypertension

Lifestyle Modifications

Not at Goal Blood Pressure (<140/90 mmHg)
(<130/80 mmHg for patients with diabetes or chronic kidney disease)
See *Strategies for Improving Adherence to Therapy*

Initial Drug Choices

Without Compelling Indications

Stage 1 Hypertension (SBP 140–159 or DBP 90–99 mmHg)
Thiazide-type diuretics for most. May consider ACEI, ARB, BB, CCB, or combination.

Stage 2 Hypertension (SBP ≥160 or DBP ≥100 mmHg)
2-drug combination for most (usually thiazide-type diuretic and ACEI, or ARB, or BB, or CCB).

With Compelling Indications

Drug(s) for the compelling indications
See *Compelling Indications for Individual Drug Classes*
Other antihypertensive drugs (diuretics, ACEI, ARB, BB, CCB) as needed.

Not at Goal Blood Pressure

Optimize dosages or add additional drugs until goal blood pressure is achieved. Consider consultation with hypertension specialist.
See *Strategies for Improving Adherence to Therapy*

Blood Pressure Measurement Techniques

Method	Notes
In-office	Two readings, 5 minutes apart, sitting in chair. Confirm elevated reading in contralateral arm.
Ambulatory BP monitoring	Indicated for evaluation of "white coat hypertension." Absence of 10–20 percent BP decrease during sleep may indicate increased CVD risk.
Patient self-check	Provides information on response to therapy. May help improve adherence to therapy and is useful for evaluating "white coat hypertension."

Causes of Resistant Hypertension

- Improper BP measurement
- Excess sodium intake
- Inadequate diuretic therapy
- Medication
  - Inadequate doses
  - Drug actions and interactions (e.g., nonsteroidal anti-inflammatory drugs (NSAIDs), illicit drugs, sympathomimetics, oral contraceptives)
  - Over-the-counter (OTC) drugs and herbal supplements
- Excess alcohol intake
- Identifiable causes of hypertension (see reverse side)

Compelling Indications for Individual Drug Classes

Compelling Indication	Initial Therapy Options
• Heart failure	THIAZ, BB, ACEI, ARB, ALDO ANT
• Post myocardial infarction	BB, ACEI, ALDO ANT
• High CVD risk	THIAZ, BB, ACEI, CCB
• Diabetes	THIAZ, BB, ACEI, ARB, CCB
• Chronic kidney disease	ACEI, ARB
• Recurrent stroke prevention	THIAZ, ACEI

Key: THIAZ = thiazide diuretic, ACEI= angiotensin converting enzyme inhibitor, ARB = angiotensin receptor blocker, BB = beta blocker, CCB = calcium channel blocker, ALDO ANT = aldosterone antagonist

Strategies for Improving Adherence to Therapy

- Clinician empathy increases patient trust, motivation, and adherence to therapy.
- Physicians should consider their patients' cultural beliefs and individual attitudes in formulating therapy.

The National High Blood Pressure Education Program is coordinated by the National Heart, Lung, and Blood Institute (NHLBI) at the National Institutes of Health. Copies of the JNC 7 Report are available on the NHLBI Web site at http://www.nhlbi.nih.gov or from the NHLBI Health Information Center, P.O. Box 30105, Bethesda, MD 20824-0105; Phone: 301-592-8573 or 240-629-3255 (TTY); Fax: 301-592-8563.

Principles of Lifestyle Modification

- Encourage healthy lifestyles for all individuals.
- Prescribe lifestyle modifications for all patients with prehypertension and hypertension.
- Components of lifestyle modifications include weight reduction, DASH eating plan, dietary sodium reduction, aerobic physical activity, and moderation of alcohol consumption.

Lifestyle Modification Recommendations

Modification	Recommendation	Avg. SBP Reduction Range†
Weight reduction	Maintain normal body weight (body mass index 18.5–24.9 kg/m²).	5–20 mmHg/10 kg
DASH eating plan	Adopt a diet rich in fruits, vegetables, and lowfat dairy products with reduced content of saturated and total fat.	8–14 mmHg
Dietary sodium reduction	Reduce dietary sodium intake to ≤100 mmol per day (2.4 g sodium or 6 g sodium chloride).	2–8 mmHg
Aerobic physical activity	Regular aerobic physical activity (e.g., brisk walking) at least 30 minutes per day, most days of the week.	4–9 mmHg
Moderation of alcohol consumption	Men: limit to ≤2 drinks* per day. Women and lighter weight persons: limit to ≤1 drink* per day.	2–4 mmHg

* 1 drink = 1/2 oz or 15 mL ethanol (e.g., 12 oz beer, 5 oz wine, 1.5 oz 80-proof whiskey).

† Effects are dose and time dependent.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Heart, Lung, and Blood Institute
National High Blood Pressure Education Program

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Appendix C: **Teatment Guidlines**
Classification and Management of Blood Pressure for Adults Aged 18 Years or Older

				Management*		
				Initial Drug Therapy		
BP Classification	**Systolic BP, mm Hg***		**Diastolic BP, mm Hg***	**Lifestyle Modification**	**Without Compelling Indication**	**With Compelling Indications †**
Normal	< 120	and	< 80	Encourage		
Prehypertension	120–159	or	80–89	Yes	No antihypertensive drug indicated	Drug(s) for the compelling indications ‡
Stage 1 hypertension	140–159	or	90–99	Yes	Thiazide-type diuretics for most; may consider ACE inhibitor, ARB, ß-blocker, CCB, or combination	Drug(s) for the compelling indications Other antihypertensive drugs (diuretics, ACE inhibitor, ARB, ß-blocker, CCB) as needed
Stage 2 hypertension	> =160	or	> =100	Yes	2-Drug combination for most (usually thiazide-type diuretic and ACE inhibitor or ARB or ß-blocker or CCB)§	Drug(s) for the compelling indications Other antihypertensive drugs (diuretics, ACE inhibitor, ARB, ß-blocker, CCB) as needed

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin-recepetor blocker; BP, blood pressure; CCB, calcium channel blocker.

* Treatment determined by highest BP category.

Treat patients with chronic kidney disease or diabetes to BP goal of less than 130/80 mm Hg.

§ Initial combined therapy should be used cautiously in those at risk for orthostatic hypertension. U.S. Department of Health and Human Services (2004). The seventh report of the national committee on prevention, detection, evaluation and treatment of high blood pressure. Bethesda, MD: US Department of Health and Human Services. National Institutes of Health, National Heart, Lung and Blood Institute.

Appendix C: **Treatment Guidelines**

LDL Cholesterol—Primary Target of Therapy

<100	Optimal
100–129	Near Optimal/Above Optimal
130–159	Borderline High
160–189	High
190	Very high

Total Cholesterol

<200	Desirable
200–239	Borderline High
240	High

HDL Cholesterol

<40	Low
60	High

U.S. Department of Health and Human Services (2002). The third report of the National Cholesterol Education Program (NCEP) expert panel on detection, evaluation and treatment of high blood cholesterol in adults (adult treatment panel III). Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute.

ATP III Classification of LDL, Total, and HDL Cholesterol (mg/dL)

ATP III Classification of Serum Triglycerides (mg/dL)

Triglyceride Level	Classification	Recommended Treatment
< 150 mg/dL	Normal	Primary aim of therapy is to reach LDL goal. Intensify weight management. Increase physical activity. If triglycerides are 200 mg/dL after LDL goal is reached, set secondary goal for non-HDL cholesterol (total - HDL) 30 mg/dL higher than LDL goal.
150–199 mg/dL	Borderline High	Treatment same as above
200–499 mg/dL	High	Intensify therapy with LDL-lowering drug or add nicotinic acid or fibrate to further lower VLDL.
500 mg/dL	Very High	Very low-fat diet (15% of calories from fat) weight management and physical activity. Fibrate or nicotinic acid When triglycerides <500 mg/dL, turn to LDL-lowering therapy.

Appendix D: **Signs and Symptoms**

Warning Signs of a Stroke

If you think someone may be having a stroke, act **F.A.S.T.** and do this simple test:

FACE Does the face look uneven? Ask the person to smile.

ARMS Does one arm drift downward? Ask the person to raise both arms.

SPEECH Does their speech sound strange? Ask the person to repeat a simple sentence. For example, "The sky is blue." Are the words slurred? Can he/she repeat the sentence correctly?

TIME If you observe any of these signs, then it's time to call 9-1-1.

Another way to remember stroke symptoms:

- Sudden numbness or weakness on one side of the body.
- Sudden confusion, trouble speaking or understanding.
- Sudden trouble seeing in one or both eyes.
- Sudden trouble walking, dizziness, loss of balance or coordination.
- Sudden severe headache with no known cause.

These signs may last only a few minutes. They should not be ignored! If you or someone you are with shows any of these signs, call 9-1-1 to get help right away!

Warning Signs of a Heart Attack

- **Chest discomfort—** You may feel uncomfortable pressure, squeezing, fullness or pain in the middle of the chest that lasts for more than a few minutes or goes away and comes back.
- **Discomfort in the upper body—** You may feel pain or discomfort in one or both arms, the back, neck, jaw or stomach.
- **Shortness of breath—** This happens with chest discomfort but it also can also happen before chest discomfort.
- **Other symptoms—** You may break out in a cold sweat, feel light-headed or nauseous.

Women are more likely than men to have some of the other warning signs of a heart attack. Women may have:

- Pain or discomfort in the center of the chest.
- Spreading pain to one or both arms, back, jaw or stomach.
- Shortness of breath and trouble breathing.
- Unexplained anxiety, weakness or tiredness.
- Cold sweats and nausea, paleness or dizziness.

The signs may be mild or severe. If you or someone you are with is having any of these signs call 9-1-1.

Appendix E:
CDC Heart Disease and Stroke Prevention Program Priority Areas

- Increase control of high blood pressure.
- Increase control of high cholesterol.
- Increase awareness of signs and symptoms of heart attack and stroke and the need to call 9-1-1.
- Improve emergency response.
- Improve quality of care.
- Eliminate disparities.

Appendix F: **Healthy People 2010 Goals and Objective**

Healthy People 2010 Heart Disease, Stroke and Related Risk Factors Objectives

12-1	Reduce coronary heart disease deaths.
12-2	Increase the proportion of adults aged 20 years and older who are aware of the early symptoms and signs of a heart attack and the importance of accessing rapid emergency care by calling 9-1-1.
12-3	Increase the proportion of eligible patients with heart attacks who receive artery-opening therapy within an hour of symptom onset.
12-4	Increase the proportion of adults aged 20 years and older who call 9-1-1 and administer cardiopulmonary resuscitation (CPR) when they witness an out-of-hospital cardiac arrest.
12-5	Increase the proportion of eligible persons with witnessed out-of-hospital cardiac arrest who receive their first therapeutic electric shock within six minutes after collapse recognition.
12-6	Reduce hospitalization of older adults with congestive heart failure as the principal diagnosis.
12-7	Reduce stroke deaths.
12-8	Increase the proportion of adults who are aware of the early warning signs and symptoms of a stroke.
12-9	Reduce the proportion of adults with high blood pressure.
12-10	Increase the proportion of adults with high blood pressure whose blood pressure is under control.
12-11	Increase the proportion of adults with high blood pressure who are taking action to help control their blood pressure.
12-12	Increase the proportion of adults who have had their blood pressure measured within the preceding two-year and can state whether their plod pressure was normal or high.
12-13	Reduce the mean total cholesterol level among adults.
12-14	Reduce the proportion of adults with high total blood cholesterol levels.
12-15	Increase the proportion of adults who have had their blood cholesterol checked within the preceding five years.
12-16	Increase the proportion of persons with coronary heart disease who have their LDL-cholesterol treated to a goal of less than or equal to 100mg/DL.

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