



**MARYLAND STATE
ADVISORY COUNCIL ON
HEART DISEASE AND STROKE**

2011 ANNUAL REPORT

*Department of Health & Mental Hygiene
Family Health Administration
Office of Chronic Disease Prevention*

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Department of Health and Mental Hygiene

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State Advisory Council on Heart Disease and Stroke



History of the Council

The Maryland State Advisory Council on Heart Disease and Stroke had its beginning in 1972 with the Hypertension Detection Follow-up Program, a study to evaluate the effectiveness of a Statewide multidisciplinary approach to identifying, treating, and following-up with hypertensive individuals. Throughout the 1970s and 1980s, the program's mission continued to evolve. Most recently, the Maryland General Assembly took action during the 2001 legislative session to rename the Council as the State Advisory Council on Heart Disease and Stroke (Advisory Council) under Subtitle 2, Health-General Article, Title 13. The broadening of the Advisory Council's scope and membership reflects the State's recognition that stroke is the number three cause of death and disability in Maryland, heart disease being the number one.

Duties of the Council

Pursuant to Health-General Article, §§13-201 – 13-205, the Advisory Council is charged with developing and promoting educational programs for the prevention, early detection, and treatment of heart disease and stroke targeted to high-risk populations and to geographic areas where there is a high incidence of heart disease and stroke. To accomplish this, the Advisory Council may use existing programs and groups. The Advisory Council is also required to recommend that the Department establish guidelines for the effective management and treatment of heart disease and stroke. The Departmental guidelines are to include primary prevention, detection, case finding, diagnosis, diagnostic workup, therapy, long-term management, and any other services that the Advisory Council believes should be covered. The State and local health departments are mandated to conform to the guidelines in carrying out any heart disease and stroke prevention, education, and treatment programs.

Council Structure and Recommendations

The Advisory Council includes a wide representation of State and local leaders and community members familiar with implementing policy, environmental, programmatic, and infrastructure changes. The Advisory Council currently addresses issues not only related to heart disease and stroke but other chronic disease prevention areas including childhood obesity, tobacco use, and diabetes, although its enabling statute has not been amended to reflect this expansion. The Advisory Council's strength is its multi-sectoral nature and strong community perspective with the involvement of local health departments, medical/health professionals, community physicians, and community members (see Appendix for a membership list).

The Advisory Council is currently organized into four Committees: 1) Cardiovascular Disease Management and Prevention; 2) Childhood Obesity; 3) Hypertension Detection, Treatment, and Prevention; and 4) Stroke Management.

I. Cardiovascular Disease Management and Prevention Committee

Rhonda Chatmon, Chair

Goal: Reduce morbidity and mortality associated with heart disease through improved quality of care and systems coordination.

Justification: Cardiovascular disease is the leading cause of death in Maryland, accounting for 196 deaths per 100,000 residents in 2008 (MD Vital Statistics Report, 2008).

Actions:

- **Collaboration on the Maryland Heart Disease and Stroke Prevention and Control Plan**

The Cardiovascular Disease Management and Prevention Committee was actively involved with the Department of Health and Mental Hygiene's (the Department) development of the Maryland Heart Disease and Stroke Prevention and Control Plan. In 2010, the Plan was published by the Department's Office of Chronic Disease Prevention (OCPD). In addition to the Advisory Council, the Plan was developed in collaboration with many other dedicated partners. Over 35 key stakeholders and organizations, including the American Heart/Stroke Association, the Maryland Association for Cardiovascular Pulmonary Rehabilitation, the Maryland Health Quality and Cost Council, the Maryland Institute for Medical Services Systems (MIEMSS), and the Maryland Stroke Alliance, participated in the development of the strategies outlined in the Plan. The Plan is a consensus-driven document that outlines objectives and action steps for State and local partners to implement in the coming years. (A copy of the Maryland Heart Disease and Stroke Prevention and Control Plan is enclosed).

The purpose of the Maryland Heart Disease and Stroke Prevention and Control Plan is to: (1) monitor the burden of heart disease and stroke in Maryland; (2) identify priority focus areas in addressing heart disease and stroke; (3) build consensus among key stakeholders around the components of prevention and systems of care in heart disease and stroke; and (4) coordinate State efforts in implementing heart disease and stroke programs and policies. The Plan addresses heart disease and stroke in seven common impact areas:

- Systems Coordination
- Primary Prevention
- Emergency Medical System Coordination
- Acute Treatment
- Sub-acute and Secondary Prevention
- Rehabilitation
- Quality Improvement

- **Review of the New MIEMSS Regulations on Cardiac Interventional Center Standards**

The Cardiovascular Disease Management and Prevention Committee monitored MIEMSS's regulations on cardiac interventional center standards while the regulations were under development and progressing through the official regulatory promulgation process. (See COMAR 30.08.16 MIEMSS – Designation of Trauma and Specialty Referral Centers – Cardiac Intervention Center Standards). The standards were approved by the Emergency

Medical Services (EMS) Board and were published in the *Maryland Register* for public comment on January 29, 2010. The comment period ended March 5, 2010. After the comment period closed, the regulations were returned to the EMS Board in April for final approval. The regulations were approved by the EMS Board and became effective in May 2011.

The Cardiac Intervention Center Standards under COMAR 30.08.16 establish an application process for the designation of cardiac interventional centers. The regulations require that to be eligible to be designated by MIEMSS as a Cardiac Interventional Center, hospitals must first be authorized by the Maryland Health Care Commission (MHCC) through the certificate of need (CON) process or by applying for a CON waiver, to provide cardiovascular services, including primary percutaneous coronary intervention (pPCI). pPCI, also known as “balloon angioplasty,” has been recognized nationally as the treatment of choice for patients experiencing a STEMI (ST-segment Elevated Myocardial Infarction), which is a severe type of heart attack.

- **Monitoring of Other Cardiac Activities in Maryland**

MIEMSS Designates 23 Cardiac Interventional Centers - As of April 1, 2011, EMS providers who have identified a STEMI patient may transport those patients to the closest designated Cardiac Interventional Center, bypassing non-designated hospitals in accordance with the Maryland Medical Protocols for EMS providers. For these patients, pPCI is recognized by the American College of Cardiology (ACC) and the American Heart Association (AHA) as the treatment of choice for STEMI and is generally associated with fewer complications and better outcomes than other forms of treatment. Additionally, the sooner a patient is treated to relieve the blockage causing the STEMI, the better the heart muscle will recover. It is therefore essential that: 1) patients who experience symptoms of a heart attack call 9-1-1 immediately, 2) EMS providers be able to rapidly identify and transport STEMI patients to designated Cardiac Interventional Centers, and 3) the Cardiac Interventional Centers are able to rapidly assess the patient and provide pPCI shortly after arrival. Reducing the time from the onset of symptoms to treatment requires that there be a high degree of coordination and integration of care between that provided by EMS providers in the field and is the care provided by medical staff in the hospital.

MIEMSS STEMI Designation and Planning - In 2011, each MIEMSS regional office developed not only a STEMI Committee, but a working Quality Assessment & Improvement (QA/QI) group to evaluate the STEMI data from across the State. In addition, Memorandi of Understanding (MOUs) were established with several out of State facilities.

Maryland Health Care Commission (MHCC) - The final recommendations from MHCC’s Data Workgroup state that a potent anti-blood clotting agent called argatroban (ARG) should be used by all Maryland hospitals providing primary angioplasty that seek designation by MIEMSS as a Cardiac Interventional Center. Based on experience with these hospitals, the Data Workgroup also recommended that MHCC’s Cardiac Data Advisory Committee explore use of the ACTION Registry®-GWTG tool to support quality improvement efforts for all Acute Myocardial Infarction (AMI) patients. Hospitals will also be required to use diagnostic cardiac catheterization and percutaneous coronary intervention

(CathPCI). The recommendations were posted in the *Maryland Register* on April 23, 2010, and final adoption was effective July 1, 2010.

Mission Lifeline: STEMI Systems of Care in Maryland - On May 22, 2010, the AHA, in partnership with the Maryland Chapter of the ACC and other key stakeholders, hosted a conference to bring together representatives from across the State to work on strengthening Maryland STEMI Systems of Care and fostering collaboration Statewide. As the State continues to implement the Cardiac Interventional Standards through MIEMSS and improve the data necessary to support quality improvement initiatives through MHCC, it will be important to continue to work to coordinate these efforts across the State and among key stakeholders and organizations. All Maryland hospitals (both pPCI and non-primary percutaneous coronary intervention (PCI)) and EMS regions have been asked to send representatives.

Cardiovascular Disease Management and Prevention Committee Recommendations:

1. Develop, support, and monitor a Statewide STEMI System of Care based on American Heart Association/American College of Cardiology guidelines.
2. Utilize health information technology (HIT) to improve provider-to-provider communication and transfer of care.
3. Increase access to culturally appropriate heart disease prevention educational resources that are based on current national guidelines and standards of care.

II. Childhood Obesity Committee

Surina Ann Jordan, PhD, Chair

Goal: Reduce childhood obesity for all Maryland children to reduce future morbidity and mortality rates associated with cardiovascular disease and diabetes in adults.

Justification: Up to 31 percent of Maryland Women, Infants, and Children (WIC) Nutrition Program participants are overweight or obese (Maryland Pediatric Nutrition Surveillance System, 2006) and 26 percent of Maryland children ages 13-18 years are overweight or obese (Maryland Youth Tobacco Survey, 2006).

Actions:

In 2009, the Maryland General Assembly charged the Advisory Council with creating a Committee on Childhood Obesity to study childhood obesity and report its recommendations to the Governor and Maryland General Assembly. Three initiatives resulted from the work of the committee:

- **The Maryland Healthy Stores Program in Charles County** - The goal of this program is to decrease obesity in low-income areas through environmental change in corner and convenience stores by encouraging store owners to stock healthy foods, providing nutrition education to consumers, and using signage to identify healthy choices at the point of sale. This builds upon evaluated healthy stores' strategies, identifies best practices for improving healthy food availability in small

retail stores, and provides a model for the role of local health departments in healthy stores implementation.

- **Maryland's Quality Rating and Improvement System (QRIS)** - QRIS is a systematic approach to assess, improve, and communicate the quality of child care. The Department has collaborated with the Maryland State Department of Education (MSDE), the Maryland Chapter of the American Academy of Pediatrics, and community-based stakeholders to include nutrition, physical activity, breastfeeding, and criteria concerning appropriate amount of time for computer and television use in Maryland's QRIS. Administered by MSDE, Maryland's QRIS pilot began in the fall of 2011, and following the pilot, all Early Care and Education providers will be eligible to voluntarily participate.
- **Maryland Summit on Childhood Obesity** - The Summit on Childhood Obesity sponsored by the University of Maryland in partnership with the Department's OCDP was held November 15-16, 2011. The purpose of this Summit was to exchange and disseminate evidence-based information; produce an inventory of resources and programs in Maryland; and educate and engage members and professionals in discussions about current policies, health disparities, and cultural influences on childhood obesity interventions.

Childhood Obesity Recommendations:

1. Develop child care wellness policies.
2. Improve nutritional and physical activity for children by demonstrating a Statewide commitment to implement and monitor local school system wellness policies from pre-kindergarten through high school.
3. Align hospital community benefit programs with evidence-based obesity prevention and intervention programs.
4. Implement a Statewide surveillance system to monitor nutrition, physical activity, and related health behaviors of children.

III. Hypertension Detection, Treatment, and Prevention Committee

Current Chair, Vacant. Chan-hing Ho, MD, Former Chair

Goal: Reduce morbidity and mortality associated with heart disease and stroke through the detection, treatment, and prevention of hypertension (high blood pressure).

Justification: High blood pressure is the most commonly diagnosed co-morbidity in stroke patients and a leading cause of cardiovascular disease in Maryland.

Actions:

- **Food Procurement Policies** - With guidance and technical support from the Advisory Council, the OCDP is exploring methods for developing and implementing healthy food procurement policies for Maryland State agencies. This policy was suggested as a potential science-informed hypertension management initiative in Maryland. Establishing nutrition standards and procurement policies for foods served by and on the grounds of government

agencies are an achievable and effective method for improving the availability of healthier food choices. As a major self-insured employer offering health benefits to 140,000 covered lives, a high-volume food purchaser, and leading institutional service provider, the Advisory Council strongly supports the efforts of the State to lead by example to improve public health and lower costs by adopting and implementing healthy food procurement policies for State agencies in Maryland. The Advisory Council is committed to supporting the State in the creation of comprehensive nutrition guidelines based on the existing models and the expertise of Departmental staff.

- **The Patients Pharmacists Partnership (P3) Program** - The Advisory Council strongly supports and advocates for the P3 Program. The P3 Program assists self-insured employers in improving their employees health management skills and has served hundreds of patients in the Mid-Atlantic region, including Maryland. This is an effective chronic disease management project that focuses on medication therapy management with patient self-management education. The program engages the employer, insurance provider, employee, and a local pharmacist to control high blood pressure, high blood cholesterol and high blood sugars (A1c hemoglobin levels). Specially trained pharmacists coach employees in medication adherence, lifestyle changes, and self-care skills. It is implemented by the University of Maryland School of Pharmacy in collaboration with the Department, the Maryland General Assembly, and the Maryland Pharmacists Association.

Hypertension Detection, Treatment, and Prevention Recommendations:

1. Explore methods for developing and implementing healthy food procurement policies for State agencies in Maryland.
2. Implement the cardiovascular disease management tool of the Department/University of Maryland P3 Program.

IV. Stroke Management Committee

Barney Stern, M.D., Chair

Goal: To reduce morbidity and mortality associated with stroke through improved quality of stroke care and systems coordination.

Justification: Stroke is the third leading cause of death in Maryland (64 deaths per 100,000 residents in 2008) and a leading cause of disability (MD Vital Statistics Report, 2008).

Actions:

- **State Telemedicine System** - The Stroke Management Committee participated in the creation of a stakeholder white paper that focused on potential models for implementation of telemedicine in Maryland. The finished product discussed the different types of telestroke systems, models, implementation barriers, and needs. As a result of the white paper, the following three bills were proposed during the 2011 legislative session: 1) House Bill 14 entitled "Health Insurance - Medically

Underserved Areas and Populations - Reimbursement for Covered Services Rendered by Telemedicine,” 2) House Bill 16 entitled “Task Force to Study the Use of Telemedicine in Medically Underserved Populations and Areas,” and 3) House Bill 17 entitled “Department of Health and Mental Hygiene - Use of Federal Funds - Priority for Medically Underserved Areas.”

Although none of the aforementioned telemedicine bills was enacted, discussions based on the bills led to a plan to empower several previously formed task forces to examine issues related to telemedicine in Maryland in greater detail. The taskforce members were divided into the following workgroups: 1) Clinical Advisory Workgroup, 2) Technical Solutions and Standards Advisory Workgroup, and 3) Finance and Business Model Advisory Workgroup. In 2011, the workgroups studied clinical, technological, informatics, legal, regulatory, and financial issues related to telemedicine, and intend to prepare a summary statement for consideration by stakeholders. In particular, suggestions for legislative initiatives to facilitate the development and stability of telemedicine services throughout the State will be highlighted.

- **Primary Stroke Centers** - Stroke is the fourth leading cause of death in Maryland. According to the American Stroke Association, the estimated direct and indirect cost of stroke in the United States for 2010 was \$71.7 billion. The designation of Primary Stroke Centers throughout Maryland was a direct result of a call to action from the Advisory Council to address systems changes in stroke prevention and coordination of the delivery of care to acute stroke victims. The goal of designating Primary Stroke Centers is to coordinate the delivery of care for acute stroke patients. A Primary Stroke Center has the necessary staffing, infrastructure, and programs to stabilize and treat most acute stroke patients.

MIEMSS has the responsibility to carry out the designation of Primary Stroke Centers as specialty referral centers Statewide. The EMS Board promulgated regulations establishing the standards for these centers, and they went into effect in May 2006. (See COMAR 30.08.11 MIEMSS – Designation of Trauma and Specialty Referral Centers – Designated Primary Stroke Center Standards). The standards are based on the recommendations of the Brain Attack Coalition, a group representing medical, scientific, nonprofit, and government leaders in the field of stroke, whose peer-reviewed recommendations for acute stroke care were published in the Journal of the American Medical Association. At present, there are 35 designated Primary Stroke Centers in the State.

- **Comprehensive Stroke Centers** - MIEMSS worked closely with various stakeholders, including the Advisory Council, AHA, the Executive Committee of the Maryland Stroke Alliance, physicians, and hospitals, on the development of the regulations establishing the standards for Comprehensive Stroke Center designation. These regulations are also based on the recommendations of the Brain Attack Coalition. The proposed regulations were published for public comment in the *Maryland Register* on July 15, 2011, and the final regulations became effective on October 17, 2011. (See COMAR 30.08.17 MIEMSS – Designation of Trauma and Specialty Referral Centers – Comprehensive Stroke Center Standards). The regulations provide structural and functional requirements

that a hospital must meet to become designated as a Comprehensive Stroke Center (CSC). A CSC would be required to have the necessary personnel, infrastructure, and expertise to address the medical and surgical needs of stroke patients who require a high intensity of care, specialized testing or therapies, or multispecialty management.

- **EMS Training** - The Advisory Council maintains its support of the Emergency Medical Dispatch Training project. The Department, in partnership with MIEMSS, continues to offer free continuing education credits to emergency medical dispatchers in Maryland in order to increase their awareness of stroke signs and symptoms. To date, 274 dispatchers in 11 counties have completed the training. Additionally, the AHA provided a free online course with continuing education credits to emergency medical pre-hospital providers entitled 'Prehospital Care of the Stroke Patient.' A total of 587 providers completed the course.

Stroke Management Committee Recommendation:

Promote and advocate for the Statewide use of telemedicine and telestroke as a prime utilization of health information technology (HIT) to increase access, improve quality, and reduce cost to Maryland's healthcare system.

Future Goals/Projects

The goals and activities of the Advisory Council align and support 10 health objectives related to heart disease, stroke, modifiable risk factors, and care as defined by the Maryland State Health Improvement Process (SHIP). SHIP is a framework for population health improvement in Maryland based on Healthy People 2020 goals. Launched in August 2011, SHIP emphasizes local action, accountability, and public engagement in working to prevent and control chronic disease, particularly among vulnerable populations experiencing health disparities. The SHIP objectives directly and indirectly impacted by the recommendations of the Advisory Council contained in this report are to: (1) increase access to healthy foods; (2) reduce deaths from heart disease; (3) reduce diabetes-related emergency department visits; (4) reduce hypertension-related emergency department visits; (5) increase the proportion of adults who are at a healthy weight; (6) reduce the proportion of adults who are at an unhealthy weight; (7) reduce the proportion of adults who are current smokers; (8) reduce the proportion of youths who use any kind of tobacco products; (9) increase the proportion of persons with health insurance; and (10) reduce the proportion of individuals who are unable to afford to see a physician.

The Advisory Council will continue to work with its many dedicated partners to develop recommendations and advocate for programs and interventions that promote better prevention, early detection, and treatment of heart disease and stroke as well as other chronic diseases.

Appendix: Membership of the State Advisory Council on Heart Disease and Stroke

The Advisory Council consists of 24 members appointed by the Governor. A member may serve two consecutive four-year terms.

	NAME	REPRESENTATION
1	Vacant - <i>Michael Silverman, MD, FACEP*</i>	American College of Emergency Physicians
2	Vacant – <i>Gil Eisner, MD*</i>	American College of Internal Medicine
3	Rhonda Chatmon	American Heart Association
4	Barney Stern, MD	American Stroke Association
5	Maria Prince, MD	Department of Health and Mental Hygiene
6	Roger Harrell	Maryland Association of County Health Officers
7	Anna Aycock, MHA, RN	Maryland Institute for Emergency Medical Services Systems
8	Lisa Cooper, MD, MPH, FACP	Johns Hopkins University School of Medicine
9	Richard Safeer, MD	Maryland Academy of Family Physicians
10	Chen Tung, MD	Maryland Chapter, American College of Cardiology
11	David Meyerson, MD	Maryland Hospital Association
12	Vacant – <i>Jeanne Charleston*</i>	Maryland Nurses Association
13	Howard Garber, MD	MedChi
14	Vacant	Monumental City Medical Society
15	Catherine Cooke, PharmD	Maryland Pharmacists Association
16	Surina Ann Jordan, PhD	State Advisory Council on Physical Fitness
17	Marcella Wozniak, MD, PhD	University of Maryland School of Medicine
18	Alexander Martin	Public
19	Edisa Padder, MD	Public
20	Heide Morgan	Public
21	Vacant - <i>Tom Pianta*</i>	Public
22	Vacant – <i>John Miller*</i>	Public
23	Vacant – <i>Shawn McIntosh*</i>	Public
24	Vacant	Baltimore Alliance for Careers in Healthcare

* Identified candidate with membership/paperwork pending.

Maryland Heart Disease and Stroke Prevention and Control Plan



Maryland Department of Health & Mental Hygiene

Martin O'Malley, Governor ♦ Anthony G. Brown, Lt. Governor ♦ John M. Colmers, Secretary
Russell W. Moy, MD, MPH, Director of FHA ♦ Joan H. Salim, Deputy Directory of FHA

Table of Contents

Office of Chronic Disease Prevention Heart Disease and Stroke Prevention Plan Outline

Executive Summary	1
Introduction	3
The Burden of Heart Disease and Stroke in Maryland.	5
Logic Model	7
Strategies Introduction	9
Stroke	
Systems Coordination	11
Primary Prevention	12
Emergency Medical Service	13
Acute Treatment.....	14
Sub Acute Care & Secondary Prevention	15
Rehabilitation.....	16
Quality Improvement	17
Cardiovascular	
Systems Coordination	19
Primary Prevention	20
Emergency Medical Service	22
Acute Treatment.....	24
Sub Acute Care & Secondary Prevention	25
Rehabilitation.....	26
Quality Improvement	28
Conclusion	29
Evaluation	29
Participant Acknowledgement	31
Resources	33
Childhood Obesity Recommendations	35



Purpose

The purpose of the Maryland Heart Disease and Stroke Prevention and Control Plan is to monitor the burden of heart disease and stroke in Maryland, identify priority focus areas in addressing heart disease and stroke, build consensus among key stakeholders around the components of prevention and systems of care in heart disease and stroke, and coordinate state efforts in implementing heart disease and stroke programs and policies.

Need

Heart disease and stroke are the numbers one and three leading causes of death in Maryland and among the top causes of hospitalization. Minorities in Maryland are disproportionately affected by both heart disease and stroke, with higher hospitalization and death rates for both conditions (Maryland Vital Statistics Administration, Maryland Health Services Cost Review Commission). Several risk factors are closely associated with both heart disease and stroke, such as hypertension, high cholesterol, and diabetes. In 2008 one in four (26.0%) residents report having been told by a physician that they have high blood pressure, and one in three (33.2%) report having been told they have high cholesterol (Maryland BRFSS).

Strategies

The plan addresses heart disease and stroke in six common impact areas: systems coordination, primary prevention, emergency medical systems coordination, acute treatment, sub-acute and secondary prevention and rehabilitation. The impact areas were selected through a collaborative process with the Maryland Heart Disease and Stroke Council. Within each Impact Area the plan discusses both heart disease and stroke and identifies specific objectives, activities, and resources needed to accomplish the common goals.

Key strategies include:

- Establish and monitor EMS dispatch, triage, and transport stroke protocols.
- Establish consistent hospital based practices for sub-acute and secondary stroke prevention.
- Monitor data, policies, and programs regarding the public health impact of heart failure in Maryland.
- Increase state level interagency capacity to implement and evaluate primary prevention programs that address health disparities.
- Collaborate with stakeholders to develop, support and monitor a statewide STEMI system of care.

Background

In 2008 Maryland was awarded a four year Capacity Building cooperative agreement from the Centers for Disease Control and Prevention (CDC) to address systems changes in heart disease and stroke prevention and care. A major component of the grant is to aid in the creation, implementation, and evaluation of a state heart disease and stroke plan with key stakeholders including the Maryland State Advisory Council on Heart Disease and Stroke.

Over the past five years Maryland stakeholders have been working towards common goals outlined in this plan. In 2006 the Maryland Stroke Alliance was established to serve as a clearing house of information for providers, patients and caregivers. Following a call to action from the Maryland Heart Disease and Stroke Council the Maryland Primary Stroke Center designation was created through the Maryland Institute for Emergency Medical Services System.

The Maryland Heart Disease and Stroke Prevention and Control Plan is part of a larger state movement to coordinate chronic disease prevention and care. The plan was created in collaboration with numerous partners including the American Heart/Stroke Association, the Maryland Association for Cardiovascular Pulmonary Rehabilitation, the Maryland Health Quality and Cost Council, the Maryland Institute for Emergency Medical Services Systems and the Maryland Stroke Alliance.

Acknowledgements

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With heart disease and stroke among the top three causes of death in Maryland, it is imperative that stakeholders across the spectrum of prevention, care, and rehabilitation collectively work to reduce associated economic and public health burdens. The Maryland Heart Disease and Stroke Prevention and Control Plan is a consensus driven document that outlines objectives and action items for state and local partners to implement in the coming years.

Heart disease remained the leading cause of death in Maryland in 2008. The age-adjusted mortality rate was 196.7 per 100,000 populations, 22% lower than the rate a decade ago (Maryland Vital Statistics Administration). The total estimated direct and indirect cost of cardiovascular disease is \$475.3 billion in United States for 2009. By comparison, the total estimated direct and indirect cost of all cancer and benign neoplasms was \$228 billion. Cardiovascular disease costs more than any other diagnostic group. In Maryland 2008, the total cost of heart disease hospitalization is 1.0 billion, or \$16,800 per discharge (Maryland Health Services Cost Review Commission).

Stroke is the third leading cause of death in Maryland. In 2008, the age-adjusted death rate for stroke was 40.0 per 100,000 people, which is less than the Healthy People 2010 target of 48 age-adjusted deaths per 100,000 (Maryland Vital Statistics Administration). Stroke is associated with high direct medical costs such as hospitalizations and doctor visits, as well as indirect costs including absence from work, disability and premature death. The estimated direct and indirect cost of stroke in the United States for 2009 will be \$68.9 billion (American Stroke Association). In Maryland, the total hospitalization cost for stroke is \$232.7 million for 2008, with \$12,100 per discharge for 2008 (Maryland Health Services Cost Review Commission).

Following the recommendations put forth in *A Public Health Action Plan to Prevent Heart Disease and Stroke* (2003) the Maryland Heart Disease and Stroke Prevention and Control Plan covers systems coordination, primary primordial prevention, emergency medical systems, acute treatment, sub acute care and secondary prevention, and rehabilitation. Within each of these sections the plan recommends actions around policy development, implementation of best practices, and addressing heart disease and stroke in all settings, life stages, and priority populations (*A Public Health Action Plan to Prevent Heart Disease and Stroke*, 2003).

Many important initiatives in systems of care for heart disease and stroke, such as the Primary Stroke Center Designation Program and EMT Coordination, are already in place and lead the nation in modeling change, but more can be done. The Maryland Heart Disease and Stroke Prevention and Control Plan is a joint publication of the Maryland Department of Health and Mental Hygiene's Office of Chronic Disease Prevention and the Maryland State Advisory Council on Heart Disease and Stroke. It is based on the Council's 2005 Strike Out Stroke Report and its subsequent updates in 2007 and 2009. The plan's cardiovascular component was created in 2009 through a stakeholder consensus meeting and also contains information from the 2003 Maryland Cardiovascular Plan that focused on behavior change programs.

In addition to identifying primary prevention strategies and activities outlined in the Maryland Heart Disease and Stroke Prevention and Control Plan, the Maryland State Advisory Council on Heart Disease and Stroke has researched and identified promising primary prevention strategies in addressing childhood obesity. The report discusses the influence of childhood obesity on adult health in relation to chronic conditions such as heart disease, stroke and diabetes. The Executive Summary of the report can be found at the end of the Maryland Heart Disease and Stroke Prevention and Control Plan.

The Maryland Heart Disease and Stroke Prevention and Control Plan will be evaluated on an annual basis by both organizations and will be made available on the Council's web site. More information regarding evaluation of the Maryland Heart Disease and Stroke Prevention and Control Plan can be found in the evaluation section.



Burden of Heart Disease and Stroke

Cardiovascular disease and stroke are the numbers one and three causes of death for Maryland residents. The public health impact of cardiovascular disease and stroke is substantial, both in terms of disease burden and cost. Both are linked to higher prevalence rates of chronic diseases and conditions, including hypertension, high cholesterol and diabetes. In 2008, an estimated \$1.2 billion of adult medical expenditures in Maryland were attributable to cardiovascular disease and stroke (Maryland Health Services Cost Review Commission).

Controlling risk factors such as high blood pressure, high blood cholesterol and diabetes play an important role in cardiovascular disease and stroke prevention. In 2008, over half (63.4%) of Maryland residents were overweight and obese and high blood pressure was a common co-occurring condition among residents who have experienced heart attack or stroke (Maryland BRFSS).

Special Populations

It was estimated that cardiovascular diseases and stroke affected certain segments of the population disproportionately, based on race and ethnicity, gender, age, and education and income levels from 2005 to 2008:

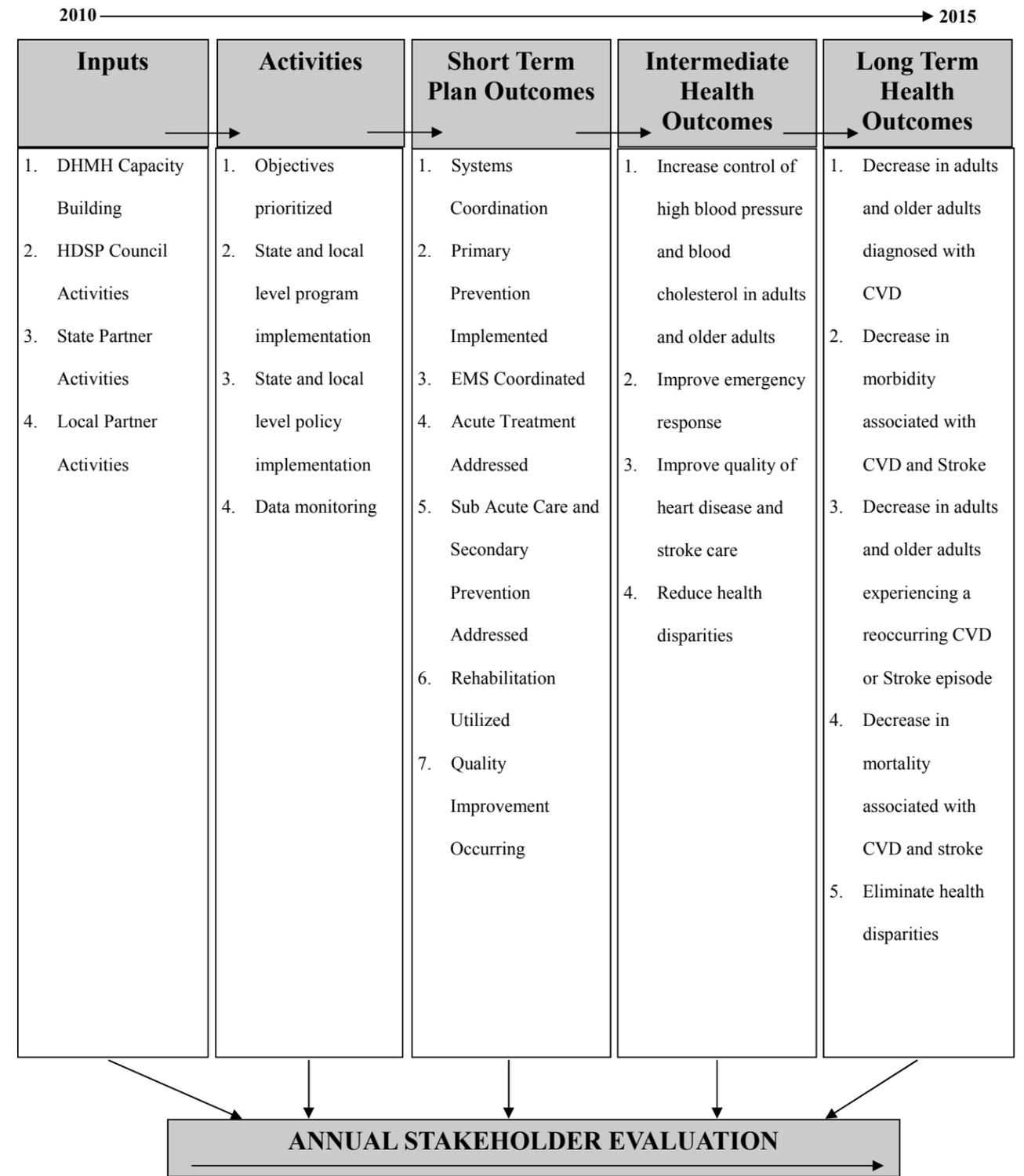
- Angina and heart attack were most prevalent among white males.
- Coronary heart disease has increased the most among white males and black females.
- Cardiovascular diseases and stroke were most prevalent in Maryland adults ages 55 and over.
- Coronary heart disease and stroke were more prevalent among those with lower household income and education.
- Women had a higher incident of stroke than men.
- Blacks had twice the hospitalization rate for stroke than whites.
- Black males experienced the highest levels of death associated with coronary heart disease and stroke.

For detailed data reports regarding the morbidity and mortality of cardiovascular disease and stroke in Maryland please refer to the 2009 *Burden of Heart Disease and Stroke* report available at www.fha.maryland.gov.





Maryland Heart Disease and Stroke Prevention and Control Plan
Logic Model





Strategy Introduction

The Maryland Heart Disease and Stroke Prevention and Control Plan is organized into seven Impact Areas. The Impact Areas were selected through a collaborative process among stakeholders. The plan identifies activities, partners and outcome measures around the Impact Areas for both cardiovascular health and stroke. The Impact Areas are:

- 1. Systems Coordination:** There are multiple systems addressing both cardiovascular health and stroke in Maryland. These include hospital systems, state agency systems, and advocacy systems. Coordinating multiple stakeholders and partners around common issues will lead to improved health outcomes for Maryland residents.
- 2. Primary Prevention:** Multiple risk factors contribute to cardiovascular and stroke outcomes. These include nutrition, physical activity, weight, blood pressure and blood cholesterol. Addressing primary prevention is key in reducing the onset of cardiovascular disease and stroke.
- 3. Emergency Medical Systems (EMS) Coordination:** Emergency response plays an integral role in the coordinated system of cardiovascular and stroke care. The Maryland Institute for Emergency Medical Services Systems (MIEMSS) is the lead partner in coordinating emergency response in Maryland.
- 4. Acute Treatment:** Acute treatment focuses on treatment once a patient presents at a hospital with onset of symptoms. The previously mentioned EMS section addresses acute treatment at the scene of occurrence.
- 5. Sub-acute and Secondary Prevention:** Sub-acute and secondary prevention refer to recovering from adverse health outcomes associated with heart disease and stroke, addressing the underlying conditions and prevention of future occurrences.
- 6. Rehabilitation:** Rehabilitation helps patients reduce future morbidity associated with heart disease and stroke. Connecting patients to rehabilitation services is critical. This section addresses strategies to connect patients at hospital discharge to appropriate standardized rehabilitation services.
- 7. Quality Improvement:** Through utilizing and monitoring systems of stroke and cardiovascular health systems of care, quality improvement initiatives can improve patient outcomes.



Maryland Heart Disease and Stroke Prevention and Control Plan
Stroke Section

I. Systems Coordination

Goal: By 2015, reduce the morbidity and mortality associated with stroke through improving the quality of stroke care and statewide systems coordination.

Strategy 1: Sustain the statewide stroke collaborative to monitor data and policies regarding the public health impact of stroke and quality of stroke care in Maryland.

Activities	Partners	Timeframe	Outcome Measures
Continue operation of the Maryland Stroke Alliance (formally established in January 2006).	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2010 –2015	- Number and type of members - Number and type of projects
Conduct annual MSA Meeting and CME Conference.	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010 –2015	-Meeting occurs - Number and type of attendees -Number and type of speakers -Event satisfaction ratings
Publish Annual Stroke Fact Sheet	Maryland Department of Health and Mental Hygiene	2010 –2015	-Fact Sheet updated -Number and types of venues distributed

Strategy 2: The stroke specialty care hospital designation program (Primary Stroke Centers or PSCs) will continue to be implemented and monitored.

Activities	Partners	Timeframe	Outcome Measures
Sustain infrastructure to support Primary Stroke Centers (PSC)	Maryland Institute for Emergency Medical Services Systems	2010 –2015	-Total number of PSC hospitals - Number of new PSCs per year -Improved quality of care at PSC (measured with Get With the Guidelines)





II. Primary Prevention

Goal: By 2015, reduce the morbidity and mortality associated with stroke by increasing control of high blood pressure and high blood cholesterol via primary prevention.

Strategy 1: Evidence based public and private stroke primary prevention programs, campaigns and policies at the local and state level are implemented and monitored.

Activities	Partners	Timeframe	Outcome Measures
Continue implementing the HDSP Council patient-provider communication campaign regarding blood pressure medication adherence.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council	2010	-Message created -Number and type of outlets message disseminated through -Number of physicians reached -Number of physicians making communication changes
Implement a primary prevention campaign through Maryland worksites.	Governor's Health Quality and Cost Council, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council	2011-2015	-Number of worksites disseminating information -Number of worksites participating in primary prevention program
Continue Stroke Prevention Hospital Education	Maryland Institute for Emergency Medical Services Systems, Primary Stroke Centers	2010-2015	-Number of hospitals doing community education regarding stroke prevention -Type of education
Create an Annual Risk Factor Prevention Policy Agenda to influence policies that address risk factors for stroke.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	Annually starting in the 2010 session	-Number of policies introduced at state and local level -Number of policies passed and enacted at state and local level
Implement Worksite Case Management Demonstration Projects	Maryland Department of Health and Mental Hygiene	2010-2012	-Number of participants connected to services
Implement Faith Based, Community and Worksite Prevention Programs addressing stroke, cardiovascular health and diabetes to reduce health disparities.	Maryland Department of Health and Mental Hygiene	2010-2012	-Number of participants connected to services

III. Emergency Medical Systems Coordination

Goal: By 2015, reduce the morbidity and mortality associated with stroke through improve emergency response

Strategy 1: Emergency Medical Services dispatch, triage, and transport stroke protocols are established, implemented and monitored.

Activities	Partners	Timeframe	Outcome Measures
Monitor Emergency Medical Services Dispatch Protocols (Established 2005)	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015	-Protocol continues to be implemented
Monitor Emergency Medical Services Triage Assessment (Established 2005)	American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Number of Maryland Emergency Medical Services response systems utilizing a stroke triage assessment tool -Tool meets specific AHA/ASA guidelines
Monitor Emergency Medical Services Treatment Protocol (Established 2005)	American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Stroke treatment protocol continues to be implemented -Protocol meets specific AHA/ASA guidelines
Monitor Emergency Medical Services Transport Protocol (Established 2007)	American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Number of Emergency Medical Services responder systems established protocols re the intent to transport to PSC

Strategy 2: Continuing education for EMS dispatch and responders is established and monitored.

Activities	Partners	Timeframe	Outcome Measures
Establish 2 hrs of Stroke CEU as requirement of licensure renewal	American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-CEU requirement established - Education material follows national AHA/ASA guidelines
Implement an EMD Operator Training addressing recognition of stroke signs and symptoms.	Maryland Department of Health and Mental Hygiene, Maryland Institute for Emergency Medical Services Systems	2010-2012	-Number of participating jurisdictions -Number of CEU's requested



IV. Acute Treatment for Stroke

Goal: By 2015, reduce the morbidity and mortality associated with stroke through improving acute treatment for Stroke by increasing use of TPA

Strategy 1: The stroke specialty care hospital designation program (Primary Stroke Centers or PSCs) will continue to be implemented and monitored. *See Section 1 Strategy 2

Strategy 2: A systems map of PSC including hospital roles, drive times, and geographical needs is created, monitored and disseminated.

Activities	Partners	Timeframe	Outcome Measures
Map PSC hospitals with drive times to address health disparities	American Heart Association, Maryland Institute for Emergency Medical Services Systems	Annually	- Map updated - Map disseminated
Map hospital roles	American Heart Association, Maryland Institute for Emergency Medical Services Systems	Annually	- Map updated - Map disseminated - Roles and responsibilities for each hospital included on map
Monitor TPA Use	Maryland Institute for Emergency Medical Services Systems	2010-2015 (Monitoring)	- TPA use (when applicable)



Learn the warning signs at StrokeAssociation.org or 1-888-4-STROKE.



V. Subacute and Secondary Prevention

Goal: By 2015, reduce the morbidity and mortality associated with stroke through improving sub-acute and secondary prevention.

Strategy 1: Consistent hospital based practices for sub-acute and secondary prevention are established and monitored.

Activities	Partners	Timeframe	Outcome Measures
Ensure all PSC hospitals establish and consistently use clinical pathways for all patients with a history of stroke based on national standards.	American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Number of hospitals using GWTG-stroke
Ensure hospitals adopt and consistently use standardized protocols that screen for and ensure timely transition from inpatient to appropriate next level of care. (Consistent with The Joint Commission (TJC) standards for all patients with a history or suspected history of stroke or transient ischemic events)	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015 (Monitoring)	-Number of hospitals that adopt and implement policies



VI. Rehabilitation

Goal: By 2015, reduce the morbidity and mortality associated with stroke through improving stroke rehabilitation.

Strategy 1: Stroke rehabilitation candidates are referred.

Activities	Partners	Timeframe	Outcome Measures
Create and implement a standardized screening and assessment tool (Tool is consistent with national guidelines for hospitalized stroke patients).	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2013	-Screening tool selected -Screening tool evaluated - number of referrals resulting from use of the screening tool.
Ensure compliance with policies or standards of screening tool	Maryland Institute for Emergency Medical Services Systems	2010-2013	-PSCs in compliance -Screenings occurring
Implement state-wide mechanisms to ensure hospitalized stroke patients are referred for post-stroke care	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015	-GWTG referral outcome
Develop rehabilitation programs to evaluate compliance with the national guidelines for post acute care and establish system performance measures for compliance.	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015	-To be determined

Strategy 2: Stroke rehabilitation resources and are utilized.

Activities	Partners	Timeframe	Outcome Measures
Identify and publish post stroke care resources and services.	American Heart Association, Maryland Stroke Alliance	2010-2015	-MSA web site launched -MSA web site content updated and verified -Hits on resources page of MSA website

VII. Quality Improvement

Goal: By 2015, reduce the morbidity and mortality associated with stroke through monitoring and improving stroke systems of care.

Strategy 1: A state wide stroke data collection and monitoring tool is implemented and monitored.

Activities	Partners	Timeframe	Outcome Measures
Ensure 100% of primary stroke centers and acute stroke capable hospitals establish and consistently use stakeholder group approved (or state approved) quality improvement tools, such as GWTG Stroke.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015 (Monitoring)	-Number of PSC hospitals utilizing tool -Tool performing desired data analysis -Outcomes analyzed -Outcomes shared with stakeholders
Ensure Quality Improvement Collaborative (QIC) reviews PSC GWTG outcomes and recommends improvement initiatives	American Heart Association, Maryland Institute for Emergency Medical Services Systems, Maryland Stroke Alliance	2010-2015	-Number of recommendations resulting from QIC reviews

Strategy 2: Continuing education for EMS dispatch and responders is established and monitored*

*See Section 3 Strategy 2.





Maryland Heart Disease and Stroke Prevention and Control Plan Cardiovascular Section

I. Systems Coordination

Goal: By 2015, reduce the morbidity and mortality associated with cardiovascular disease through improved quality of care and systems coordination.

Strategy 1: Monitor and disseminate data, policies, and programs regarding the public health impact of heart failure in Maryland.

Activities	Partners	Timeframe	Outcome Measures
Establish a Maryland Heart Failure Collaborative	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2010-2012	-Collaborative established with representative members

Strategy 2: Collaborate with stakeholders to develop, support and monitor a statewide STEMI (ST segment elevation myocardial infarction) System of Care based on AHA and the American College of Cardiology (ACC) guidelines.

Activities	Partners	Timeframe	Outcome Measures
Covene Mission: Lifeline (STEMI) Stakeholder Groups to develop a coordinated STEMI systems of care that assures access to treatment in all communities.	American College of Cardiology, American Heart Association, Governor’s Health Quality and Cost Council, Maryland Department of Health and Mental Hygiene, Maryland Health Care Commission, Maryland Hospital Association, Maryland Institute for Emergency Medical Services Systems	2010-2012	-Recommendations for a STEMI Systems of Care Implementation Plan developed

Strategy 3: Increase public recognition of the importance of calling 9-1-1 at the first sign of chest pain.

Activities	Partners	Timeframe	Outcome Measures
Establish an outcome based community media campaign.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Number and types of media outlets utilized. -Change in public’s knowledge as measured through mode of arrival to hospital



II. Primary Prevention

Goal: By 2015, reduce the morbidity and mortality associated with cardiovascular disease by addressing blood pressure and blood cholesterol control through primary prevention programs and policies targeting healthy lifestyles.

Strategy 1: Increase state level interagency capacity to implement and evaluate primary prevention programs.

Activities	Partners	Timeframe	Outcome Measures
Establish and maintain State health department infrastructure for heart disease.	Maryland Department of Health and Mental Hygiene	2010	-Program fully staffed -State Strategic Plan created and monitored -Demonstration Project funded
Implement Worksite Case Management Demonstration Projects.	Maryland Department of Health and Mental Hygiene	2010-2012	-Number of participants connected to services
Implement Faith Based, Community and Worksite Prevention Programs addressing stroke, cardiovascular health and diabetes.	Maryland Department of Health and Mental Hygiene	2010-2012	-Number of participants connected to services
Establish an interagency worksite wellness collaborative .	American Heart Association, Maryland Department of General Services, Maryland Department of Health and Mental Hygiene, Mid Atlantic Business Group on Health, Private Business	2012-2015	-Collaborative established -Best practices shared

Strategy 2: Identify and monitor primary prevention nutrition, physical activity, and access to services policies at the local and state level.

Activities	Partners	Timeframe	Outcome Measures
Create Annual Risk Factor Prevention Policy Agenda to influence policies that address risk factors for heart disease.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Institute for Emergency Medical Services Systems	Annually starting in the 2010 session	-Number of policies introduced at state and local level -Number of policies passed and enacted at state and local level
Inventory and monitor number of local level policies regarding walking and biking to school.	Maryland Department of Health and Mental Hygiene, Maryland Department of Transportation, Maryland State Department of Education	2010-2015	-Number and type of policies identified -Number and type of policies changed or enacted
Leverage state resources to address local food distribution in Maryland to address health disparities.	Maryland State Community Food Coalition	2010-2015	-Number of schools participating in state Farm to School Program -Number of policies introduced and/or enacted at the state and local level increasing access to local health food options.

Strategy 3: Increase access to culturally appropriate heart disease prevention educational resources that are based on current national guidelines and standards of care.

Activities	Partners	Timeframe	Outcome Measures
Align Power to End Stroke with local health department prevention programs.	American Heart Association, Local Health Departments, Maryland Department of Health and Mental Hygiene	Annually	-Number of Ambassadors trained - Number of Ambassador events -Number of pledge cards received
Align Go Red for Women with local health department prevention programs.	American Heart Association, Local Health Departments, Maryland Department of Health and Mental Hygiene	Annually	-Number of people trained -Number of GRFW events
Ensure the Fruit and Veggies More Matters campaign information and resources are disseminated.	Local Health Departments, Maryland Department of Health and Mental Hygiene	Annually	-Amount and type of resources disseminated -Reach and impact of disseminated resources



III. Emergency Medical Systems

Goal: By 2015, reduce the morbidity and mortality associated with acute STEMI and sudden cardiac arrest through improving emergency response.

Strategy 1: Establish and monitor Emergency Medical Services dispatch, treatment, and transport protocols for acute ST Elevated Myocardial Infarction.

Activities	Partners	Timeframe	Outcome Measures
Establish and monitor Emergency Medical Services Dispatch Protocols	Emergency Number Systems Board, Maryland Institute for Emergency Medical Services Systems, PSAPs	2010-2015	-Statewide chest pain protocol for EMD established including administration of Aspirin. - Protocol meets specific AHA/ASA guidelines
Monitor Emergency Medical Services Treatment Protocol	American College of Cardiology, American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-All ALS providers trained to perform 12 lead ECG and recognize STEMI -All ALS units equipped with 12 lead ECG - Protocol meets specific AHA/ASA guidelines
Implement Emergency Medical Services Transport Protocol	American College of Cardiology, American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Implementation of statewide protocol that allows transport of STEMI patients to designated primary PCI centers with activation of the cath lab from the field and direct transport to cath lab with bypass of non primary PCI centers
Monitor the standard 12 lead ECG curriculum	Emergency Medical Services Education Office, Maryland Institute for Emergency Medical Services Systems	2010-2015	Establish minimum required standards and competency for 12 lead ECG education

Strategy 2: Improve emergency response to out of hospital sudden cardiac arrest.

Activities	Partners	Timeframe	Outcome Measures
Update and monitor the Out of Hospital Cardiac Arrest Database and send quality improvement reports to participating jurisdictions	Local EMS Offices, Maryland Department of Health and Mental Hygiene, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Data base updated -Data base monitored - EMS QI reports run -Work with jurisdictions to improve data submission and outcomes from OHCA -Link prehospital and hospital data to determine long-term outcomes from OHCA
Improve and integrate post-resuscitation care	American College of Cardiology, American Heart Association, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Establish EMS treatment and transfer protocols for post resuscitative care.

Strategy 3: Address AED Policy Challenges

Activities	Partners	Timeframe	Outcome Measures
Extend Maryland's AED Statute immunity protection to all AED users and program facilitators regardless of implementation of training or other program requirements	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2010	-Legislation passed





IV. Acute Treatment

Goal: By 2015, reduce the morbidity and mortality associated with STEMI through improving acute treatment for STEMI.

Strategy 1: Establish and monitor the creation of a STEMI specialty care hospital designation.

Activities	Partners	Timeframe	Outcome Measures
Create infrastructure to support STEMI designated centers.	Maryland Health Care Commission, Maryland Hospital Association, Maryland Institute for Emergency Medical Services Systems	2010-2012	-STEMI designation program assigned to MIEMSS -Program Manager assigned
Ensure all stakeholders approve of STEMI regulations that adhere to AHA/ACC guidelines and are consistent with Mission Lifeline recommendations.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Health Care Commission, Maryland Heart Disease and Stroke Council, Maryland Hospital Association, Maryland Institute for Emergency Medical Services Systems	2010	-All stakeholders approve
Establish, monitor and maintain a designation process.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Health Care Commission, Maryland Heart Disease and Stroke Council, Maryland Hospital Association, Maryland Institute for Emergency Medical Services Systems	2013-2015	-Data is monitored -Quality of Care is monitored

Strategy 2: Reduce delays in treating myocardial infarctions.

Activities	Partners	Timeframe	Outcome Measures
Improve door to treatment (balloon) times by utilizing a state approved data registry	American Heart Association, Governor's Health Quality and Cost Council, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2010-2015	-Action Get With the Guidelines Registry (once approved) or other state approved registry.

V. Secondary Prevention

Goal: By 2015, reduce the morbidity and mortality associated with cardiovascular disease through improving sub-acute and secondary prevention.

Strategy 1: Utilize provider management tools to improve patient control of blood pressure and blood cholesterol.

Activities	Partners	Timeframe	Outcome Measures
Establish a Primary Care Physicians Collaborative with Federally qualified Health Care Centers	Maryland Department of Health and Mental Hygiene, Mid-Atlantic Association of Community Health Centers	2010-2012 (Blood Pressure) 2012-2014 (Blood Cholesterol)	-Percentage of pt with Blood pressure controlled via chart review, score on guideline pre-test/post-test -Cholesterol values at baseline compared to year 4
Establish a 2 hour CME requirement per every state medical licensing cycle regarding blood pressure treatment utilizing JNC 7 guidelines	Maryland Board of Physicians, Primary Care and Managed Care organizations	2012-2013	-Percentage of physicians in compliance with new standard

Strategy 2: Utilize health information technology (HIT) to improve provider to provider communication and transfer of care.

Activities	Partners	Timeframe	Outcome Measures
Include Blood Pressure, cholesterol labs, and HbA1c in provider HIT databases	To Be Determined	2012-2015	To Be Determined

Strategy 3: Improve disease management and reduce re-admission rates for chronic heart failure patients.

Activities	Partners	Timeframe	Outcome Measures
Increase utilization of community health workers (CHW) in managing chronic heart failure patients.	Community Health Awareness and Monitoring Program, Maryland Department of Health and Mental Hygiene, University of Maryland School of Pharmacy P3 Program,	2010-2015	-Re-admission rates of CHF patients with CHW compared to those without -Readmission rates, cores measures, mortality, GWTG HF performance measures



VI. Rehabilitation

Goal: By 2015, reduce the morbidity and mortality associated with cardiovascular disease and heart failure through improving cardiovascular rehabilitation standards of care, utilization, and coverage.

Strategy 1: Increase awareness of the benefits of cardiac rehabilitation.

Activities	Partners	Timeframe	Outcome Measures
Disseminate best practice literature to physicians regarding the benefits of cardiovascular rehabilitation	Maryland Association of Cardiovascular Pulmonary Rehabilitation, Maryland Heart Disease and Stroke Council	2010-2015	-Amount and type of information shared -Amount of earned press -Number and types of rotations
Disseminate benefits of CR to community via Cardiac Rehab week activities at MD hospitals	Newspapers, media outlets, civic organizations	2010-2015	-Number of hospitals participating in Cardiac Rehab week -Amount and type of information disseminated
Include cardiac rehabilitation rotations in Maryland medical school rotations.	Maryland Association of Cardiovascular Pulmonary Rehabilitation, Maryland Heart Disease and Stroke Council, Regional Medical Schools	2013-2015	-Medical schools initiate rotation program -Number of residents participating in rotation.

Strategy 2: Rehabilitation candidates referred

Activities	Partners	Timeframe	Outcome Measures
Implement state-wide mechanisms to ensure hospitalized patients with appropriate cardiac diagnosis are referred for rehabilitation care, with help of National Quality Forum.	American Heart Association, Maryland Association of Cardiovascular and Pulmonary Rehabilitation	2012-2015	-Increase in referrals

Strategy 3: Rehabilitation centers meet recommended standards of care.

Activities	Partners	Timeframe	Outcome Measures
Ensure that rehabilitation providers meet the requirements for certification established by the American Association of Cardiovascular and Pulmonary Rehabilitation	Maryland Association of Cardiovascular and Pulmonary Rehabilitation	2010-2015	-Number of centers certified

Strategy 4: Cardiac rehabilitation is included in all health insurance plans.

Activities	Partners	Timeframe	Outcome Measures
Engage Maryland legislature to enact laws requiring health insurance plans to cover cardiac rehabilitation.	Maryland Association of Cardiovascular and Pulmonary Rehabilitation, Maryland Heart Disease and Stroke Council	2012-2015	-Law passed
Engage subscribers (employer groups and government plans) to include cardiac rehabilitation in health insurance plans.	Maryland Association of Cardiovascular and Pulmonary Rehabilitation, Maryland Heart Disease and Stroke Council	2012-2015	-Number of employers engaged -Number of plans changed to cover CR
Create a state-wide funding source for patients without insurance coverage to be able to attend cardiac rehabilitation.	Maryland Association of Cardiovascular and Pulmonary Rehabilitation, Maryland Heart Disease and Stroke Council	2013-2014	-Funding source secured -Number of patients utilizing fund



VII. Quality Improvement

Goal: By 2015, reduce the morbidity and mortality associated with cardiovascular disease through monitoring and improving cardiovascular systems of care.

Strategy 1: Implement a state wide data collection and monitoring tool.

Activities	Partners	Timeframe	Outcome Measures
Ensure that 100% of STEMI centers and capable hospitals establish and consistently use stakeholder group approved (or state approved) quality improvement tools, such as GWTG Action registry.	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council, Maryland Institute for Emergency Medical Services Systems	2012-2015	-Number of hospitals utilizing tool -Tool performing desired data analysis -Outcomes shared with stakeholders

Strategy 2: Improve disease management and reduce re-admission rates for chronic heart failure patients.

Activities	Partners	Timeframe	Outcome Measures
Increase the number of hospitals with TJC Advanced HF certification	American Heart Association, Maryland Department of Health and Mental Hygiene, Maryland Heart Disease and Stroke Council	2010-2015	-Number of certified hospitals



Conclusion

The strengths and resources of a variety of stakeholders are necessary to maximize the strategies and action steps outlined in this plan to reverse the trend of morbidity and mortality associated with heart disease and stroke. Risk factors, systems of care and rehabilitation services for heart disease and stroke must be addressed in collaboration. Following national guidance from CDC and input from stakeholders and partners, this document will guide the state’s continued response to heart disease and stroke in Maryland.

Evaluation Plan

The Maryland Heart Disease and Stroke Prevention and Control Plan is a five year document. The purpose of evaluating the plan is to determine whether the state of Maryland and partnering organizations have increased their capacity to comprehensively address heart disease and stroke and reduce associated morbidity and mortality.

On an annual basis the Maryland State Advisory Council on Heart Disease and Stroke will look at the priority strategies being implemented and evaluate them based on the specific activities, partners, time frames and outcome measures identified within the strategy. The Office of Chronic Disease Prevention’s Heart Disease and Stroke Prevention Program, along with other stakeholders outlined in the plan, will assist in this evaluation.

All results will be incorporated into a summary document that clearly highlights progress, barriers and recommendations to further address the identified strategies. A copy of the annual evaluation will be made available to the public and stakeholders.



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- Maryland Pharmacacist Association
- Maryland Public Health Association
- Maryland Stroke Alliance
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- University of Maryland School of Pharmacy





Resources

1. American Heart Association
<http://www.americanheart.org>
2. American Stroke Association
<http://www.strokeassociation.org>
3. Maryland Department of Health and Mental Hygiene Heart Disease and Stroke Prevention Program
<http://fha.maryland.gov/cdp/hdsp.cfm>
4. Maryland State Advisory Council on Heart Disease and Stroke
http://fha.maryland.gov/cdp/councils_hdsp.cfm
5. Montgomery County Stroke Association
<http://www.mcstroke.org>
6. National Cholesterol Education Program
<http://www.nhlbi.nih.gov/about/ncep/index.htm>
7. National Coalition for Women with Heart Disease
<http://www.womenheart.org>
8. National Heart Attack Alert Program
<http://www.nhlbi.nih.gov/about/nhaap/index.htm>
9. National Heart, Lung, and Blood Institute
<http://www.nhlbi.nih.gov>
10. National High Blood Pressure Education Program
<http://www.nhlbi.nih.gov/about/nhbpep/>
11. National Institute on Neurological Disorders and Stroke
<http://www.ninds.nih.gov>
12. National Stroke Association
<http://www.stroke.org>
13. U.S. Centers for Disease Control and Prevention (CDC),
Division for Heart Disease and Stroke Prevention
<http://www.cdc.gov/DHDSP/index.htm>



**Committee on Childhood Obesity
Executive Summary of Recommendations
October 21, 2009**

Policy and Environmental Change

- Implement policy and environmental changes that enhance community access to healthy foods.
- Implement policy and environmental changes that enhance community access to physical activity opportunities.
- Require government-funded and regulated agencies responsible for administering nutrition assistance and education programs to collaborate to increase enrollment, participation, and coordination of nutrition education in these programs.
- Improve awareness, for all women of child bearing age, of the critical role of nutrition and physical activity for pre-conception wellness and the long term health of their children.
- Establish policies that promote recommended infant and early childhood feeding practices, such as increased rate and duration of breast feeding and educate families and regulated child care providers.
- Develop a child care wellness policy.
- Improve nutritional awareness and physical activity opportunities for children by demonstrating a statewide commitment to implement and monitor local school system wellness policies from pre-kindergarten through high school.

Health care

- Ensure evidence-based prevention, assessment, and treatment for children who are overweight and obese.
- Align community benefit programs with evidence-based obesity prevention and intervention programs.

Public Awareness

- Implement a social marketing campaign that raises family and community awareness of healthy food choices and the importance of physical activity for obesity prevention, and its impact on academic performance and self-esteem.

Infrastructure

- Implement a statewide surveillance system to monitor nutrition, physical activity, and related health behaviors of children.
- Propose legislation that would provide a sustainable revenue source to support the implementation of these recommendations through the imposition of a tax levy such as a tax on snack foods.





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