

# A Vision for Michigan



High Blood Pressure Control



High Blood Cholesterol Control



Know Signs/Symptoms of Heart Attack and Stroke and Calling 9-1-1



Improve Emergency Medical Systems Response



Improve Heart Disease and Stroke Care



Eliminate Heart Disease and Stroke Disparities

## A Strategic Plan for Heart Disease and Stroke 2009-2014

# *A Vision for Michigan*

## **A Strategic Plan for Heart Disease and Stroke**

2009-2014

A report from the  
Michigan Cardiovascular Alliance  
and the  
Heart Disease and Stroke Prevention Unit

*Michigan Department  
of Community Health*



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**Michigan  
Cardiovascular  
Alliance**

June 2009

Dear Colleagues and Cardiovascular Disease Partners:

The burden of cardiovascular disease continues to take its toll on Michigan residents through disease, lasting disabilities, and significant economic costs. One out of every three deaths in Michigan is due to cardiovascular disease and direct and indirect costs are estimated at over \$15.9 billion and continue to climb. As Michigan is already reeling from unprecedented economic stressors, an aging population, and an increasing number of residents with contributing risk factors such as diabetes and obesity, cardiovascular disease cannot, and should not, be ignored.

To address the growing needs of cardiovascular disease in Michigan, it is our pleasure to introduce this updated strategic plan for improving cardiovascular health, entitled *A Vision for Michigan: A Strategic Plan for Heart Disease and Stroke – 2009-2014*. The Michigan Cardiovascular Alliance, whose membership includes clinical experts, organizational leaders, health professionals, and other stakeholders, volunteered their time and expertise to help craft this strategic plan. We are grateful for their passion and commitment to advance this important cause and to help Michigan residents achieve more productive lives free of the burden of cardiovascular disease.

As you read this five-year plan, you will see it incorporated the goals and priorities identified by the Heart Disease and Stroke Prevention Program of the Centers for Disease Control and Prevention. Priorities include high blood pressure, high blood cholesterol, emergency care, quality of care, disparities and signs and symptoms of heart attack and stroke. Settings emphasized are healthcare, worksite, and community. The objectives, strategies, and “Call to Action” were developed to provide guidance for all stakeholders. The strategies contain interventions designed to address the cardiovascular needs of our residents in our ever-changing healthcare landscape. This plan will be reviewed, evaluated, and modified as needed in context of the current environment and any other anticipated or unexpected changes that may occur over the next five years.

On behalf of the Michigan Cardiovascular Alliance, we invite you to consider how you and your organization can contribute to the success of this plan. We look forward to your involvement as we work collaboratively to improve the cardiovascular health and well-being of all Michigan residents.

Sincerely,

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# Acknowledgements

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# Executive Summary

## *A Vision for Michigan: A Strategic Plan for Heart Disease and Stroke - 2009-2014*

### **EXECUTIVE SUMMARY**

Even though we have witnessed dramatic decreases in both heart disease and stroke mortality rates over the past 50 years, heart disease remains the number one cause of death and stroke remains the third cause of death in both Michigan and the nation. The goal of this strategic plan is to achieve a “heart-healthy and stroke-free Michigan” by providing the “leadership to prevent and control heart disease, stroke and their precursors.”

This plan, developed by the Michigan Cardiovascular Alliance, will provide guidance to community groups, healthcare organizations, researchers, worksites, and other internal and external stakeholders as they collaborate on the development and implementation of projects and programs leading to improvements in cardiovascular disease outcomes for Michigan residents.

Built on evidence-based guidelines established for heart disease, stroke, and related risk factors, this plan provides a collaborative and comprehensive approach to secondary prevention and care. Six priorities determined by the United States Department of Health and Human Services Centers for Disease Control and Prevention include: 1) controlling high blood pressure, 2) controlling high blood cholesterol, 3) increasing understanding of the signs and symptoms of heart attack and stroke and calling 9-1-1, 4) improving emergency response to heart attacks and stroke, 5) improving quality of heart disease and stroke care, and 6) eliminating heart disease and stroke disparities.

The scope of work outlined by the plan is ambitious yet achievable: a future in which Michigan is heart-healthy and stroke-free. Statewide strategies identified for consideration in the first year of implementation are as follows:

- Utilize available resources that support heart disease and stroke prevention and control for patients and the public.
- Target high-risk groups, present heart disease and stroke prevention education in variety of venues and multiple communication channels, utilize lay health educators, use appropriate educational materials for targeted populations, explore alternative venues to reach the public and promoting projects that address gaps in disparities for cardiovascular disease care. For healthcare professionals, incorporate strategies and materials in educational programs that are culturally sensitive, and language and literacy appropriate.
- Encourage the public to develop a response plan for cardiovascular emergencies.
- Utilize existing community resources to promote management of high blood pressure and high blood cholesterol.
- Provide professional education to reinforce standards and treatment guidelines.

The strategies in this plan build on partnerships, current program efforts, and existing resources to build a foundation for sustainable change.



Lake Michigan Beach near Frankfort  
Photo Credit: Travel Michigan



- Disseminate evidence-based protocols and screening guidelines.
- Increase awareness and usage of programs and tools that track and report patient progress.
- Ensure consistent messaging regarding signs and symptoms of heart attack and stroke and emergency response and calling 9-1-1.
- Collaborate with partners to identify best practices in cardiovascular disease care and disseminate information about models leading to improvement in healthcare in Michigan.
- Educate and engage decision and policy makers on cardiovascular disease burden and costs and implications for prevention.

To chart the progress, measurable objectives have been identified and a sample report included in the appendices with timelines for feedback.

The strategies in the plan focus on opportunities identified in three areas: public awareness, professional education, and systems change. Strategies build on existing heart disease and stroke efforts as well as initiatives implemented by chronic disease colleagues. Across Michigan, many people and organizations are engaged in work that supports the priorities of this plan. Through these partnerships and current program efforts, the strategic plan capitalizes on these collaborations and existing resources to build a foundation for sustainable change.

*A Vision for Michigan: A Strategic Plan for Heart Disease and Stroke - 2009-2014* is focused on reducing disparities, utilizing existing resources, and strengthening and creating partnerships to reduce heart disease and stroke in Michigan. Success of this plan depends on collaboration between healthcare, worksite, and community settings to affect policies that ensure quality of care for those affected by heart disease and stroke, and also provide education and system re-engineering to manage and control risk factors.





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# Introduction



State Capitol of Michigan  
Photo Credit: Michael M. Smith

Over the past forty years our nation has been fortunate to witness dramatic decreases in both heart disease and stroke mortality rates. From 1950 to 1996, the age-adjusted mortality rates for cardiovascular disease (CVD) have decreased 60% and stroke mortality rates have declined 70%.<sup>1</sup> Death rates have continued to decline as demonstrated in data from 1999 to 2002 showing coronary heart disease declined 11% and the rate for stroke deaths decreased 10%.<sup>2</sup> These declines can be attributed to advances in medical treatment, surgical interventions, research, and the diligent efforts of public health directed at prevention, awareness, early detection and control of CVD and its risk factors. Despite these remarkable achievements, heart disease remains the number one cause of death and stroke remains the third cause of death in both the nation and in Michigan. In 2007 alone, more than 24,258 people in Michigan died from heart disease and over 4,638 people died from stroke.<sup>3</sup> In addition to lives lost, Michigan's 2009 total estimated direct and indirect costs from cardiovascular disease are \$15.9 billion. Of these costs, \$5.5 billion result from coronary heart disease, the most prevalent form of heart disease, and \$2.3 billion are the estimated total costs resulting from stroke.<sup>4</sup> There has also been a steady rise in the major risk factors for heart disease and stroke, such as diabetes, high blood pressure, high cholesterol, obesity, and lack of physical activity. In fact, since 2000, diabetes has increased 25%, obesity rates are up 15%, and the prevalence of high blood pressure and high cholesterol has also consistently increased. While some progress has been achieved, these statistics point to the urgency for on-going work to ensure a continued decline in mortality rates, premature death, disability and risk factors due to cardiovascular disease.

## DEVELOPING ISSUES

There are other events besides risk factor increases occurring in Michigan that have the potential of affecting the health outcomes of our residents. "Baby-boomers," the generation born between the years 1946-1964, are beginning to reach their sixties and the incidence of cardiovascular disease is beginning to surface with increasing frequency. In addition, Michigan, along with the rest of the nation, has been experiencing a major economic recession. As of March 2009, unemployment rates in Michigan have reached the double-digit range of 12.6%, considerably higher than the national rate of 8.5%.<sup>5</sup> When unemployment occurs, it often results in loss of health benefits. Individuals who do not have health insurance coverage or have inadequate coverage, are less likely to obtain preventative healthcare, fill prescriptions or get needed treatments, leading to an increased risk for health problems.





The rapid pace of emerging science and the increasing complexity of our healthcare system have also had a significant impact on both healthcare providers and consumers. It has become increasingly apparent that public health needs to realign its focus on these issues. New, innovative strategies need to be developed to support changes in systems of care. Information about successful quality improvement projects and enhanced, more efficient models of healthcare delivery services need to be publicized and incorporated into practices throughout the state. Healthcare providers, constantly inundated with changing treatment options, updated guidelines and new research, need support to deliver optimal care for their patients. Healthcare consumers must have more learning opportunities and creative options for obtaining the knowledge and information to help them become empowered to take control of their own health and to learn how to best navigate the complex healthcare system. It is vital that all partners work collaboratively on these issues to conserve resources, prevent duplication of services and provide the synergy necessary for effective change now and in the future.

These developing issues have a significant bearing on and lay the foundation for *A Vision for Michigan: A Strategic Plan for Heart Disease and Stroke in Michigan – 2009-2014*. The goal of this plan mirrors the Michigan Department of Community Health, Cardiovascular Health, Nutrition and Physical Activity Section’s vision and mission for achieving a “heart-healthy and stroke-free Michigan” by providing the “leadership to prevent and control heart disease, stroke and their precursors.”

This plan is intended to be flexible and designed to accommodate a changing environment. As the healthcare landscape is reshaped and significant changes are implemented, this plan will be evaluated and tailored to meet those changes. This plan will provide guidance to community groups, healthcare organizations, researchers, worksites, and other internal and external stakeholders as they collaborate on and build upon existing projects and programs to prevent and control heart disease and stroke.

**There has been a steady rise in the major risk factors for heart disease and stroke in Michigan, such as diabetes, high blood pressure, high cholesterol, obesity, and lack of physical activity. While some progress has been achieved in reduction of heart disease and stroke deaths, these increases point to the urgency for on-going work to ensure continued decline.**



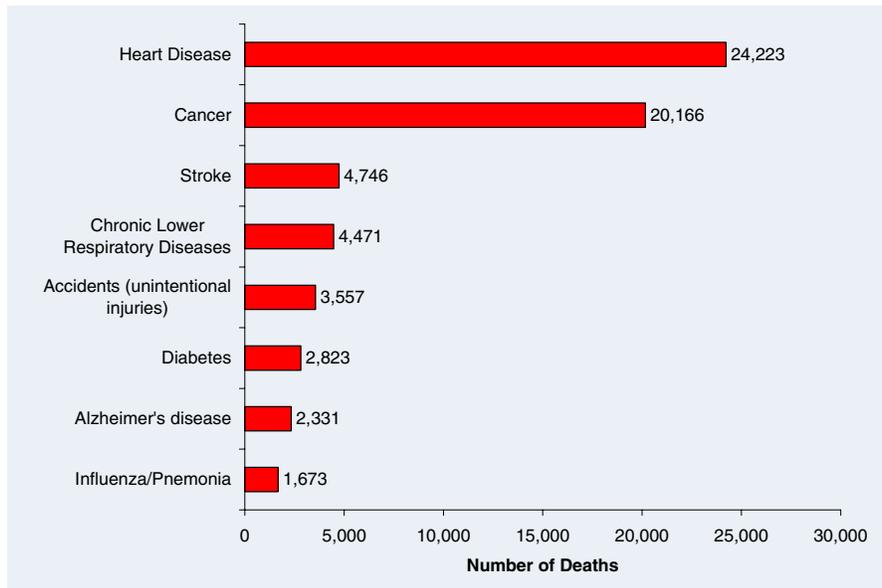
# The Burden of Heart Disease and Stroke in Michigan

## BACKGROUND

Cardiovascular disease (CVD) refers to diseases that affect the heart and blood vessels. Diseases of the blood vessels include heart disease, stroke, atherosclerosis, and hypertension. Nationally, CVD has been the leading cause of death since 1919. In 2009, the estimated total direct and indirect cost due to CVD in the United States will total \$475.3 billion.<sup>4</sup>

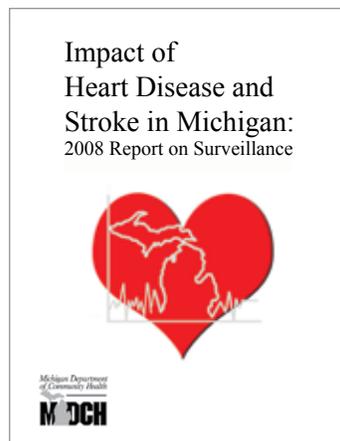
CVD continues to be the leading cause of death in Michigan and the United States. In 2006, CVD was responsible for 36.1% of Michigan deaths; of that, 78.0% were due to heart disease and 15.3% were caused by stroke (Figure 1).<sup>6</sup>

**FIGURE 1.** Leading causes of death in Michigan, 2006.



Source: MDCH Division of Vital Records and Health Statistics, 2006.

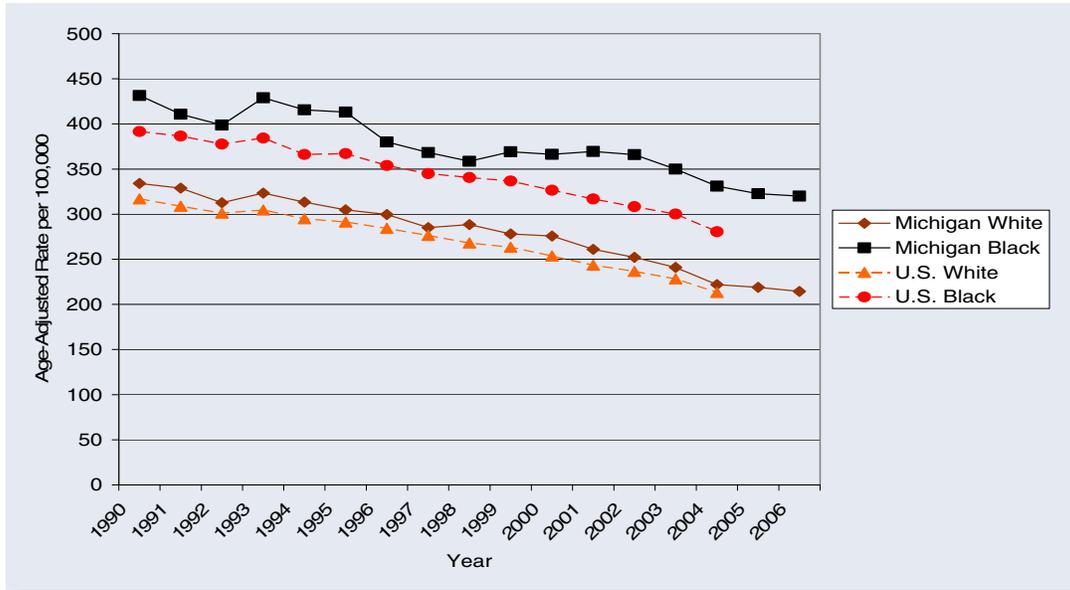
Diseases of the heart include coronary heart disease, heart failure, sudden cardiac death, and hypertensive heart disease. Michigan age-adjusted mortality rates for heart disease by race have been consistently above the national rates (Figure 2). From 1990, the Michigan age-adjusted mortality rates for heart disease decreased by 34% to 226.7 per 100,000 deaths in 2006.<sup>6</sup>



This 2008 Report on the Impact of Heart Disease and Stroke in Michigan was a foundation for this strategic plan. The data in this chapter is an update of some key information from the 2008 Report, which can be downloaded from [www.michigan.gov/cvh](http://www.michigan.gov/cvh).



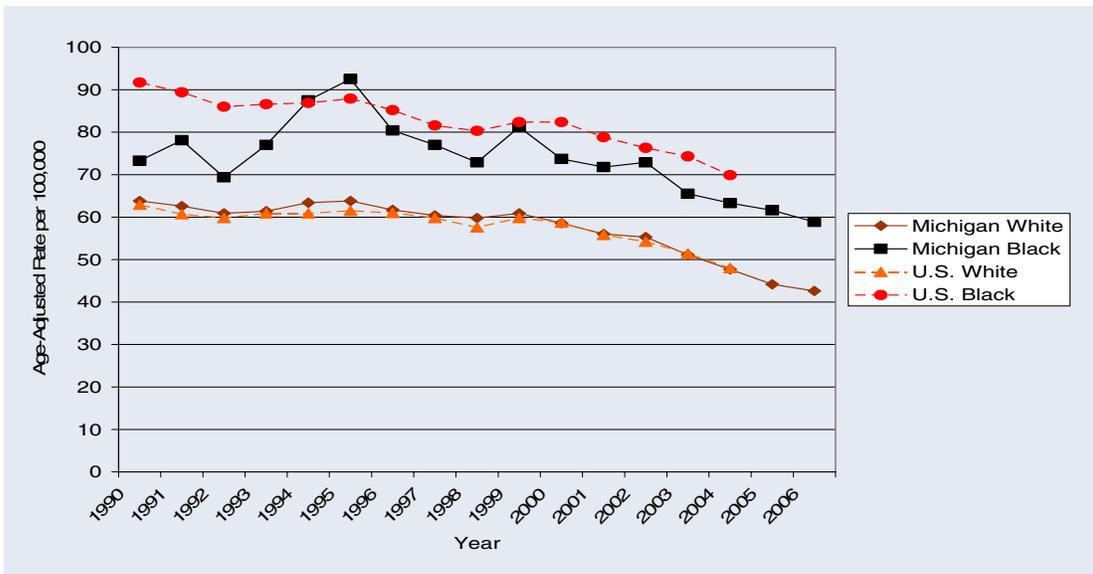
FIGURE 2. Age-adjusted mortality rates by race for heart disease for Michigan and the United States, 1990-2006.



Source: MDCH Vital Statistics

The 2009 estimated direct and indirect cost of stroke in the United States is \$68.9 billion.<sup>4</sup> Age-adjusted death rates since 1990 have shown that Michigan and the United States are very similar for whites but nationally blacks have a slightly higher rate than Michigan (Figure 3). From 1990, the Michigan age-adjusted mortality rates for stroke decreased by 31% to 44.7 per 100,000 deaths in 2006.<sup>6</sup>

FIGURE 3. Age-adjusted mortality rates by race for stroke for Michigan and the United States, 1990-2006.



Source: MDCH Vital Statistics





Little Sable Point Lighthouse  
Photo Credit: David Vaughn

## MICHIGAN COMPARED TO THE UNITED STATES

Although rates of CVD mortality have decreased, these diseases are still a serious burden in Michigan. The burden of CVD is higher in Michigan than in the United States.<sup>6</sup>

- Michigan's CVD mortality rate was 297.2 deaths per 100,000 people in 2005 compared to 277.3 per 100,000 for the United States.<sup>6</sup>
- Nationally in 2009, Michigan was ranked as the 13<sup>th</sup> worst state for CVD mortality, 8<sup>th</sup> worst for coronary heart disease mortality, and the 28<sup>th</sup> worst for stroke mortality.<sup>4</sup>

## RACIAL DISPARITIES

The burden of CVD is not evenly distributed across racial groups in Michigan. While CVD hospitalization rates are decreasing for most racial/gender groups, rates among black males continue to rise. Coronary heart disease hospitalization rates are highest among white males.<sup>7</sup>

- Black males have the highest hospitalization rate for cardiovascular disease, heart disease, heart failure and stroke, followed by rates among black females.<sup>7</sup>
- The highest CVD mortality rates occur in black males (499.4 per 100,000), more than twice the rate for white females (231.3 per 100,000), who have the lowest CVD mortality rate.<sup>6</sup>

## SIGNS AND SYMPTOMS OF HEART ATTACK AND STROKE

### HEART ATTACK:

Open-ended questions were asked on the 2004 Behavioral Risk Factor Survey (BRFS).<sup>8</sup>

- The most commonly reported warning signs were pain or discomfort in the chest (78.0%) and least reported were other signs such as light-headedness, sweating, or nausea (23.2%).
- Nearly 30% were aware of at least three correct warning signs.

### STROKE:

Closed-ended questions were asked in the 2007 BRFS.<sup>8</sup>

- Numbness or weakness of the face, arm or leg was the warning sign most frequently identified correctly (95.4%) and the warning sign of a severe headache with no known cause was the least correctly identified (56.7%).
- Almost half (44.9%) of the adults correctly identified all five warning signs.



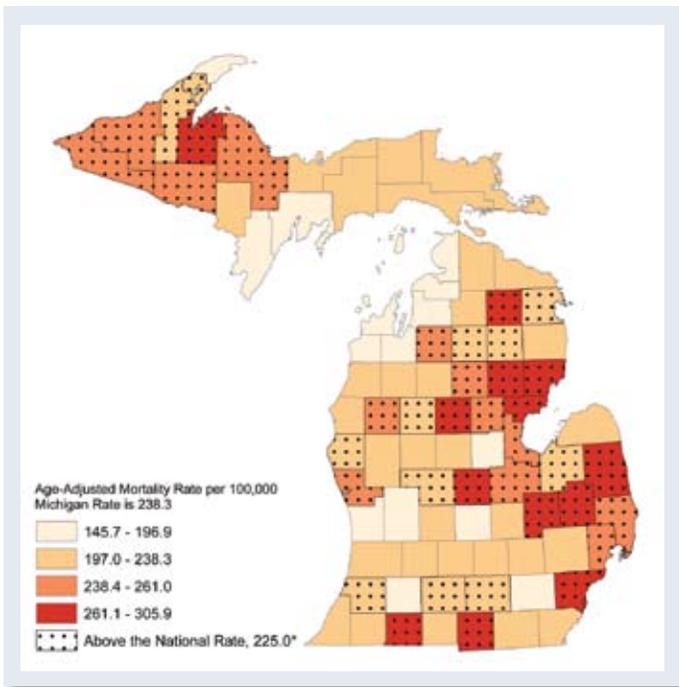


### GEOGRAPHIC DISPARITIES

Certain geographic regions in Michigan have a higher CVD burden. Refer to the Michigan County Map in Appendix B to locate specific counties within the state.

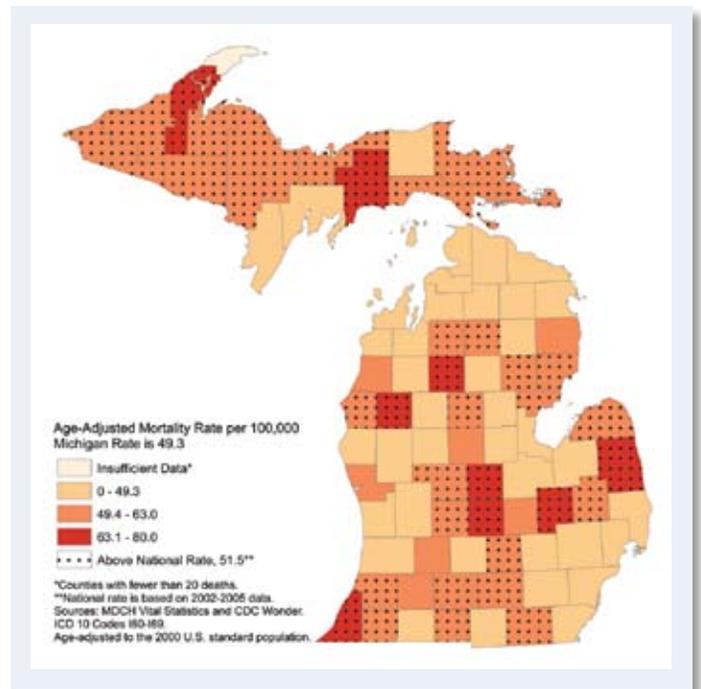
- Five contiguous counties (Arenac, Bay, Gladwin, Clare, and Ogemaw) had the highest hospitalization rates of all counties for all the cardiovascular diseases except stroke.<sup>7</sup>
- Sanilac County had one of the highest mortality rates for each of the five diseases and Ogemaw County had one of the highest mortality rates for all the diseases but stroke.<sup>6</sup>

**FIGURE 4.** Age-adjusted five-year mortality rates for **heart disease** by county, 2002-2006.



Source: MDCH Vital Statistics

**FIGURE 5.** Age-adjusted five-year mortality rates for **stroke** by county, 2002-2006.



Source: MDCH Vital Statistics





**CARDIOVASCULAR DISEASE RISK FACTORS**

Although smoking rates in Michigan and the United States have declined, prevalence of other risk factors for CVD have either remained constant or increased. Michigan’s CVD risk factor rankings are among the highest in the nation.<sup>8</sup>

**FIGURE 6.** Percentage of Michigan Adults with CVD Risk Factors, 1990-2008 (With Comparison to 2008 National BRFSS Data)

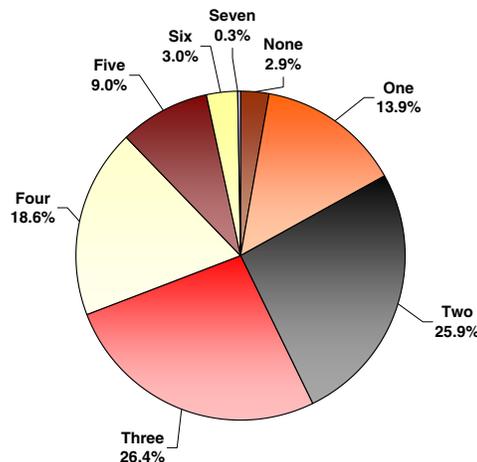
RISK FACTOR	1990	1996	2002	2008	US 2008	2008 NATIONAL RANKING
Current Smoking	29.2	25.6	24.1	20.2	18.2	15 <i>tied</i>
Blood Pressure: Ever Told High (of tested)	23.3	23.8	NS	28.6 <sup>2007</sup>	27.5 <sup>2007</sup>	17 <sup>2007</sup>
Cholesterol: Ever Told High (of tested)	27	30.1	NS	39.9 <sup>2007</sup>	37.5 <sup>2007</sup>	5 <sup>2007</sup>
Overweight (BMI > 25) (Includes obesity)	47.4	54.7	62.1	65.3	63.1	16 <i>tied</i>
Obese (BMI > 30)	14.1	18.3	25.2	30.1	26.6	8 <i>tied</i>
Fruits & Vegetables: Less than 5 servings/day	NS	77.9	77.4	78.3	75.7 <sup>2007</sup>	14 <sup>2007</sup>
No Leisure Time Physical Activity	NS	23.1	24.3	25.1	24.8	23
Diabetes	NS	5.3	8.1	9.0	8.2	17

NS = Not Sampled that year or question/survey not comparable

More detailed information including maps of heart disease and stroke rates by county and epidemiological statistics at <http://www.michigan.gov/mdch/cvh> or <http://www.michigan.gov/mdch> (Statistics and Reports)

- Figure 6 describes trends over time and current Michigan CVD risk factor rankings (1 being the worst).
- In 2007, only 4.0% of Michigan adults had all four of the healthy lifestyle characteristics (healthy weight, adequate fruit and vegetable intake, not smoking and engaging in adequate physical activity).
- In 2007, 2.9% of adults reported having no CVD risk factors and over 57% reported having three or more risk factors (Figure 7).

**FIGURE 7.** Age-adjusted prevalence of having up to seven risk factors among adults, 18 and over, in Michigan, 2007.



Source: Michigan Behavioral Risk Factor Survey (BRFS)



# Overview and History

## OUR VISION

A heart-healthy and stroke-free Michigan.

## OUR MISSION

We will provide leadership to prevent and control heart disease, stroke and their precursors.

## HISTORY AND PROGRESS

Public health cardiovascular disease (CVD) prevention efforts have evolved considerably over the past decades, from a focus on early detection and control of hypertension and cholesterol, to its current, more comprehensive focus encompassing a variety of heart disease and stroke initiatives. During the early years of the program, partnerships were formed with healthcare experts and other interested parties representing various organizations and institutions throughout the state. It was through the efforts and expertise of these partners that the first public health CVD strategic plan was developed in 1991. This plan placed primary emphasis on capacity building within local health departments and communities. It also contained strategies for improving healthy food options and physical activity in schools, wellness programs at worksites, and promoted effective, evidence-based CVD interventions in healthcare settings. It was responsible for laying the foundation for the Worksite and Community Health Promotion (WCHP) Program, a statewide CVD prevention program focusing on a range of initiatives, such as health screenings, intensive risk reduction education, coalition building, and health awareness initiatives in worksite and community settings. After 12 successful years, the WCHP program was discontinued due to budget constraints, but the positive impact of this program remains.

In 1997, 2000, and 2003, CVD program strategic plans were updated to reflect a much broader focus and to meet new national guidelines. Recommendations in these strategic plans were developed for a range of settings: worksites, communities, healthcare settings, rehabilitation centers, and schools. These updated plans took on new areas of importance such as an increased emphasis on stroke, quality improvement, and at-risk populations such as African Americans, women and CVD prevention in children. Data analysis and reporting was also expanded and additional efforts were placed on reducing modifiable risk factors, promoting behavior change, supporting physical activity in children and adults, and addressing environmental and policy issues to increase healthy choices at home, work and school. The Cardiovascular Health Nutrition, and Physical Activity Section today has two areas of focus: primary prevention and secondary prevention. The Heart Disease and Stroke Prevention Unit focuses on secondary prevention, and is leading this strategic planning process. Together, these two areas provide comprehensive programming in Michigan to prevent and control heart disease, stroke, obesity, and their precursors.



In 1997, 2000, and 2003, updates were made to the 1991 CVD strategic plan to reflect a much broader focus and to meet new national guidelines. This 2009 strategic plan will provide new guidance for the next 5 years.

## LESSONS LEARNED AND SUCCESSES

During the 20 years MDCH has been involved in cardiovascular disease prevention programming and planning, our state has benefited from seven key elements. These elements, which are listed below, make up the major lessons learned and successes experienced in Michigan:

- The first element is the strength and maintenance of a competent and dedicated workforce. MDCH has a range of staff who has contributed to the growth, credibility, and innovative approach to cardiovascular disease prevention efforts.
- Secondly, we are fortunate to have had strong clinical cardiovascular disease experts participate in our Advisory Committees over the past several years, as well as a variety of other member organizations, such as the American Heart/Stroke Association, Local Public Health, the National Kidney Foundation of Michigan, the Michigan Association of Health Plans, the Michigan Health and Hospital Association, the Michigan State Medical Society, the Michigan Primary Care Association, and the major academic institutions in Michigan. These partners, and many others listed in the following section and in Appendix C, have continued to play an important role in the forward progress Michigan has made.
- Thirdly, our internal collaboration within the Division of Chronic Disease and Injury Control, the Division of Genomics, the Perinatal Health and Chronic Disease Epidemiology, and the Public Health Administration have strengthened our efforts.
- Fourth, our partners, public health leadership and program staff have demonstrated innovativeness through the early identification of stroke as a public health problem, collaboration with Genomics on sudden cardiac death in the young, building capacity in Geographic Information System (GIS) mapping, and new ways to integrate CVD into health discussions.
- Fifth is the continuous focus and development of hypertension control and accurate blood pressure measurement programs. During these two decades staff within the CVD area has contributed to a range of tools, educational programs, and media to enhance the accurate measurement of blood pressure and promote the consistent use of evidence-based guidelines with the goal of blood pressure control in all hypertensive patients.
- A sixth area is the early commitment to worksite programming. Michigan was a leader in worksite wellness in the early 1990s and incorporated evidence-based wellness programs throughout the 12-year period of the Worksite and Community Health Promotion (WCHP) program.
- Finally, the leadership within MDCH continuously engages partners, focuses on proven strategies, looks for needs within a broad spectrum of populations, and continues to serve the citizens of Michigan.



### INTEGRATION WITH OTHER PROGRAMS & DEPARTMENTS

The internal integration with other program areas within MDCH must be mentioned when discussing partnerships and program efforts. The Cardiovascular Health, Nutrition and Physical Activity Section has collaborated with internal partners both within the Division of Chronic Disease and Injury Control and within state government to prevent and control heart disease and stroke in order to capitalize on established program initiatives in tobacco, diabetes, and obesity to prevent duplication. Some examples follow:

**Diabetes and Other Chronic Diseases Section**—partnered to produce high blood pressure modules for Certified Michigan Diabetes Educators; collaborated on the PATH project, a chronic care model self-management program designed to assist patients control various chronic diseases.

**Tobacco Section**—partnered to increase policy and environmental supports within communities, businesses, and healthcare organizations to prevent and manage risk factors; promoted tobacco cessation programs and reimbursement treatment options to community coalitions and healthcare providers.

**WISEWOMAN Program**—partnered to provide guidelines of clinical parameters as well as nutrition, physical activity, and smoking behavior change; provided guidance for educational materials for blood pressure and cholesterol screening for low-income women in the Breast and Cervical Cancer Program; updated protocols and provided education for clinical staff to ensure accuracy of screening for blood pressure and cholesterol; encouraged inclusion of the signs and symptoms of heart attack and stroke during lifestyle counseling.

**Genomics Program**—collaborated on a symposium and participated in death review panels and publication on *Sudden Cardiac Death in the Young*; incorporated family health history into a range of cardiovascular projects including a newsletter published on CDC's website; collaborated on an article in *Preventing Chronic Disease* (April 2005), "Blood Pressure Sunday: Introducing Genomics to the Community Through Family."

**Emergency Medical Services (EMS) and Trauma Systems**—supported training programs on acute stroke treatment; led statewide assessment reporting of EMS and CVD capacity; developed EMS educational tools; advocated for statewide heart attack and stroke protocols.

**Vital Records and the Chronic Disease Epidemiology Sections**—provided data analysis and consultation regarding the burden of heart disease, stroke, and its precursors in Michigan.

**Michigan Public Health Institute**—provided support for management and evaluation of projects; provided social marketing and focus group expertise; provided assessment and materials for faith-based organizations; collaborated on grant proposals.

**Michigan Primary Care Consortium**—staff collaborated to support primary care and health system change to improve health outcomes.

**Maternal and Child Health**—collaborated on clinical guidelines and interventions for staff working with pregnant women with hypertension.



Mackinac Bridge

Photo Credit: Travel Michigan



# Strategic Planning Background, Objectives and Strategies

“The strategic planning process demonstrated the commitment of many passionate people who want to see the cardiovascular health of Michigan improve. We must now reach out to others to help in this cause so that Michigan will be a viable competitor in the global economy and a desirable place to live, work, and play.”

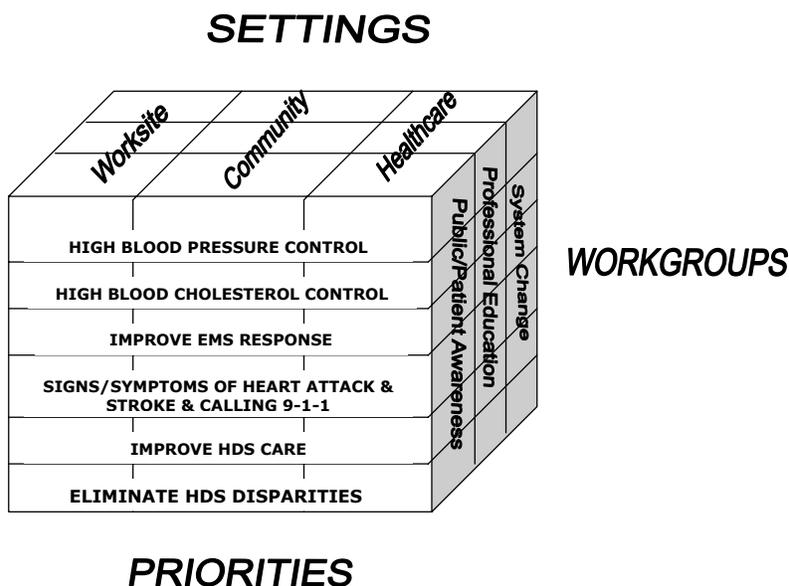
— Sandra Chase,  
Michigan Cardiovascular  
Alliance Co-chair

## BACKGROUND

The strategic plan outlined in this report is aligned with the priorities set forth by the Heart Disease and Stroke Prevention Program at the Centers for Disease Control (CDC) and Prevention. The following CDC priorities are incorporated into the plan:

- Increase control of high blood pressure.
- Increase control of high blood cholesterol.
- Increase understand of signs and symptoms for heart attack and stroke and the importance of calling 9-1-1.
- Improve emergency responses to cardiovascular disease.
- Improve the quality of heart disease and stroke (HDS) care.
- Eliminate HDS disparities related to race, ethnicity, gender, geography, and socioeconomic status.

The diagram below identifies these six priorities as well as the settings emphasized by CDC. These priorities focus on an adult population. The workgroups described in the diagram reflect the process used in strategic planning to address these priorities in the various settings.



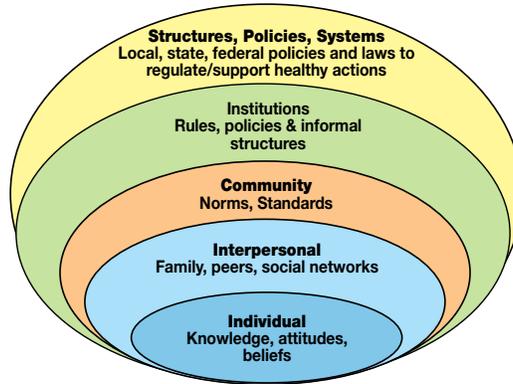
CDC also emphasizes the importance of health system change defined as “a change in organizational or legislative policies or in environmental supports that encourages and channels improvement(s) in systems, community and individual-level health outcomes.”<sup>9</sup> Policy and health system change strategies were integrated into this plan.



### MODELS INCORPORATED INTO THE STRATEGIC PLAN

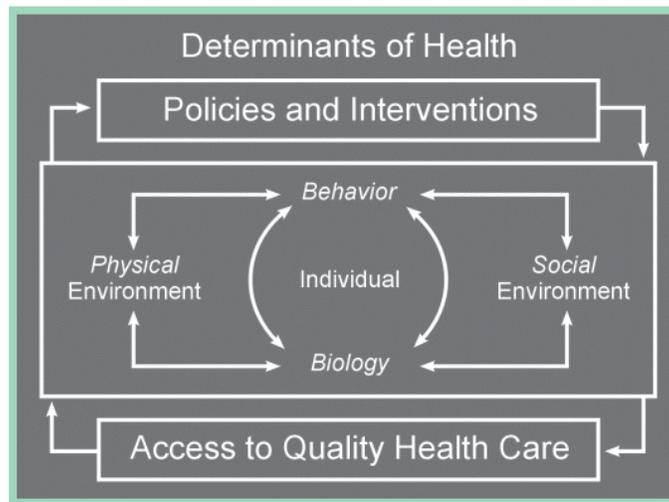
This strategic plan was based on several existing models for prevention and healthcare systems change. The framework of these models contributed to the development of recommendations and assisted in clarifying the interrelated factors that were considered in strategy development. One of the models used was the Social-Ecological Model.<sup>10,11</sup>

### Social-Ecological Model



This model identifies five levels of influence for health-related behaviors and conditions: individual, interpersonal, community, organizational, and public policy. This model is an example of an ecological perspective, which emphasizes the interaction between, and interdependence of, factors within and across all levels of a health problem. This comprehensive approach was incorporated, since health, in of itself, and health outcomes are not based on any one factor.

While the Social-Ecological Model broadly illustrates the factors influencing health, the Determinants of Health Model,<sup>12</sup> described in Healthy People 2010, identifies additional elements, such as “biology and access to quality health care.” These elements are used to develop a plan for improving health outcomes and are important in addressing the reduction and elimination of health disparities.





With regard to health system change, the two current models incorporated into the strategies of this plan are the Chronic Care Model and the Patient Centered Medical Home. The Chronic Care Model<sup>13</sup> is based on six core elements that must be incorporated in order to provide high quality chronic disease care (Appendix D). The Patient Centered Medical Home<sup>14</sup> is another model of delivering comprehensive quality care that is being promoted in primary care settings throughout the state and the nation (Appendix E). The Chronic Care and Patient Center Medical Home models are similar, with each model advocating for a more comprehensive, coordinated approach to delivering healthcare services. While these two models are not typically used as a public health approach for addressing population health outcomes, the concepts in both models are critical to improving the quality of individual healthcare, assisting patients in navigating complex health systems, increasing access to services, and ultimately playing a vital role in improving the overall health of all population groups.

### STRATEGIC PLANNING WORKGROUPS

Just as CVD prevention efforts have evolved and strengthened over the years, so have the partnerships with experts in the field of cardiovascular disease control and prevention. Sixty individuals, representing various healthcare organizations, associations, academia, health plans, provider offices, quality improvement and disease management specialists, and public health joined together to form the Michigan Cardiovascular Alliance (MiCA) in 2008 growing out of previous advisory committees. Members of the MiCA provided leadership, guidance, consultation, and valuable input into the development of this strategic plan.

The framework for the plan has three main focus areas:

- Public/Patient Awareness – Public/Patient-Centered
- Professional Education – Provider-Centered
- Systems Change – Organization-Centered

The above workgroups were selected by the MiCA and membership was identified. Over several months the workgroups met to develop objectives and strategies. In March 2009, other experts and leaders, not currently participating in the MiCA, were asked to review and provide a fresh perspective on the strategies the workgroups recommended at a town hall meeting. The workgroup members took into consideration their comments and advice, making the necessary revisions to their plans. The final draft of the strategic plan represents the expertise, knowledge, dedication, and valuable time of many individuals on the MiCA who are committed to improving the cardiovascular health and well being of all Michigan citizens.

“This strategic plan will be successful because of the many stakeholders who volunteered their time and expertise to the multi-dimensional development process. The well attended Town Hall discussion provided the validation that the plan is both relevant and feasible.”

— A. Mark Fendrick, MD,  
Co-Chair, Michigan  
Cardiovascular Alliance



# Priorities, Objectives and Strategies



**Note:** Since many of the strategies employed for Priorities 1 and 2 overlap, the Strategic Planning Workgroup decided to combine both priorities in the description of the strategies.

**PRIORITY 1: Increase the number of adults who have their high blood pressure under control.**

**Objective 1: By 2014, increase by 2% the number of hypertensive adults in Michigan who have their blood pressure under control.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan Medicaid HEDIS Results Statewide Aggregate report	56.1% (ages 18 to 85 years in 2008).	Increase by 2%
Michigan Quality Improvement Consortium	Medicare: 59.8% Medicaid: 55.1% Commercial: 62.9% (2008)	Increase by 2%

**Objective 2: By 2014, decrease the proportion of adults, 18 years and older, in Michigan with high blood pressure to 27%.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFS	29% (2007)	Decrease to 27%

**Objective 3: By 2014, increase the proportion of adults, 18 years and older, in Michigan who are taking action to control their blood pressure by 5%.\***

**\*Non-pharmacologic and pharmacologic**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFS	TBD (2009)	Increase by 5%





**PRIORITY 2: Increase the number of adults who have their high blood cholesterol under control.**

**Objective 1: By 2014, increase by 2% the number of adults in Michigan who have their high blood cholesterol under control.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan Quality Improvement Consortium	Medicare: 64.9% Medicaid: 45.2% Commercial: 58.7% (2008)	Increase by 2%

**Objective 2: By 2014, decrease the proportion of adults, 18 years and older, in Michigan, with high blood cholesterol to 37%.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFSS	39.9% (2007)	Decrease to 37%

**STRATEGIES:**

**Public/Patient Awareness**

1. Collaborate on current initiatives that promote management of high blood pressure and high blood cholesterol (e.g. the Stanford Chronic Disease Self-Management Program – PATH, WISEWOMAN, Diabetes Self Management Program, etc.).
2. Implement practices (e.g. education, encouragement to visit healthcare provider, adoption of healthy behaviors) tailored to the specific needs of worksites, communities, and healthcare settings to support increased management and follow-up of high blood pressure and high blood cholesterol.
3. Collaborate with statewide partners on a coordinated social marketing plan targeting high blood pressure and high blood cholesterol to address specific gaps/needs in various communities (e.g. rural, urban, faith based, etc.).
4. Utilize community resources to promote the management of high blood pressure and high blood cholesterol (e.g. local public health departments, hospitals, American Heart Association, National Kidney Foundation of Michigan, etc.).
5. Utilize lay health educators/community health workers in various community settings to educate the public regarding high blood pressure and high blood cholesterol control and management (e.g. faith-based programs, PATH, etc.).
6. Utilize other healthcare workers (i.e. parish nurses, home healthcare workers, pharmacists, EMS workers) in various community settings to educate patients and customers regarding high blood pressure and high blood cholesterol control and management.
7. Collaborate with partners to educate the public and patients about the relationship of high salt intake and high blood pressure.





## Professional Education

1. Collaborate on initiatives directed at educating healthcare professionals for the purpose of increasing awareness and adherence of national evidence-based guidelines regarding cholesterol, hypertension, obesity, diabetes, peripheral arterial disease, heart disease, stroke, and associated risk factors.
2. Promote strategies that integrate current and comprehensive content of CVD prevention and treatment into the curriculum designed to educate medical students, residents, EMS professionals, specialty fellows, nurses, nurse practitioners, physician assistants, physicians, Pharm D students/trainees, etc.
3. Promote training in accurate blood pressure measurement, assessment of CVD risk, appropriate follow-up and the utilization of quality assurance techniques.
4. Collaborate with partners (i.e. health plans, not for profit organizations, and professional organizations) to promote and provide continuing professional education opportunities related to guidelines, new breakthroughs in care and risk assessment, including genetics, pharmacotherapies and risk factors.
5. Increase awareness and usage of programs and tools that track and report patient progress using evidence-based standards of care for program quality improvement strategies (e.g. patient health records, contracts, and/or checklists).

## Systems Change

1. Promote system change initiatives in primary care settings to improve the diagnosis and management of high blood pressure and high blood cholesterol (e.g. the Chronic Care Model and/or the Patient Centered Medical Home).
2. Promote Regional Health Information Organizations, and other related organizations in Michigan, to encourage the implementation of health information technology (HIT) in healthcare systems, organizations, and at the payer and provider level with initial focus on the exchange of lab data and E-Prescribing.
3. Promote and implement policies and programs in worksites and community organizations that provide education, targeted screening, adherence and support for high blood pressure and high blood cholesterol management and follow-up (e.g. worksite wellness and faith-based programs).
4. Advocate for policy changes/plan redesign within employer groups and health plans to incentivize individuals for improvements in cardiovascular health outcomes (e.g. Value Based Insurance Design).
5. Collaborate with advocacy groups and the Michigan Cardiovascular Alliance partners on statewide environmental and policy changes that can impact improvements in cardiovascular health outcomes (e.g. initiatives related to reducing dietary salt consumption and other healthcare related legislation).
6. Educate and engage decision and policymakers on the CVD burden, the related financial health expenditures, and the costs of not addressing key issues.

“Despite the challenges we face in Michigan, we have the expertise, passion, and vision to improve the health of Michigan residents. We must work together to locate and harness the vast array of resources available designed to improve the knowledge and skills of health care professionals.”

— Rebecca Blake,  
Co-leader, Professional  
Education Workgroup





**Priority 3: Increase the number of adults who know the signs and symptoms for heart disease and stroke and the importance of calling 9-1-1.**

**Objective 1: By 2014, increase the proportion of adults, 18 years and older, in Michigan who can identify three or more heart attack warning signs by 3%.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFS	TBD (2009)	Increase by 3%

**Objective 2: By 2014, increase the proportion of adults, 18 years and older, in Michigan who can identify three or more stroke warning signs by 3%.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFS	89.1% (2007)	Increase by 3%

**Objective 3: By 2014, increase the proportion of adults, 18 years and older, in Michigan that would call 9-1-1 when they recognize someone is having a stroke or heart attack to 90%.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan BRFS	86.6% (2007)	90%

**STRATEGIES:**

**Public/Patient Awareness**

1. Promote programs that increase the awareness of signs and symptoms of heart attack and stroke, and the need to call 9-1-1; encourage training in the use of automated external defibrillators (AEDs) and cardiopulmonary resuscitation (CPR).
2. Collaborate with statewide partners on a coordinated social marketing plan targeted to increase public awareness of the signs and symptoms of heart attack and stroke, and the need to call 9-1-1 in various communities.
3. Utilize lay health educators, home healthcare, community health, and EMS workers in various community settings to educate residents on the signs and symptoms of heart attack and stroke, and the need to call 9-1-1.
4. Encourage families, worksites, and communities, to develop a plan for responding to cardiovascular emergencies.





### Professional Education

1. Support professional education programs that incorporate information about the importance of informing patients of cardiovascular risk factors and the signs and symptoms of heart attack and stroke and calling 9-1-1.
2. Provide resources to healthcare professionals to support ongoing education about: activating 9-1-1, CVD risk factor reduction, and signs and symptoms of heart attack and stroke.

### Systems Change

1. Collaborate with partners to ensure consistent messaging regarding the signs and symptoms of heart attack and stroke and the importance of calling 9-1-1, and develop a systematic approach for disseminating the information throughout the state (e.g. the Michigan Cardiovascular Alliance, other partners, community groups).
2. Leverage existing resources, and/or identify new resources, to disseminate and support educational campaigns (e.g. public awareness, professional education, and the use of other technologies).
3. Using the Behavioral Risk Factor Survey or other survey tools, monitor the needs and impact of the statewide campaigns.
4. Using the educational campaign materials developed, implement a pilot project within select settings to evaluate the impact of the materials and message (e.g. cardiology clinics, primary care offices, rural health clinics, or other community settings).

“Addressing the public awareness aspect of cardiovascular disease is essential. Ultimately, the success of the strategic plan will be judged by the effect it has on the cardiovascular disease burden of the citizens of Michigan. This effect will be positive if the citizens understand the importance of taking responsibility for their own cardiovascular health.”

— Robin Roberts,  
Co-leader, Public/Patient  
Awareness Workgroup





“Systemic change takes time, commitment, and resources. Having a group of engaged partners is the only way we’ll be able to achieve the system changes needed to reduce heart disease and stroke in Michigan.”

— Mary Anne Ford, Co-leader, Systems Change Workgroup

**Priority 4: Improve emergency responses to heart attack and stroke.**

**Objective 1: By 2014, improve the quality of Emergency Medical Services (EMS) for heart attack and stroke.**

DATA SOURCE	BASELINE	TARGET 2014
EMS Assessment	Initial 2008 data	TBD

**Objective 2: By 2014, use the designated regional areas in the trauma system structure to improve stroke and heart attack systems of care in three regions.**

DATA SOURCE	BASELINE	TARGET 2014
Michigan Department of Community Health	0 Regions	3 Regions

**STRATEGIES:**

**Public/Patient Awareness**

1. Advocate for a statewide funded EMS Trauma System.

**Professional Education**

1. Collaborate with EMS and the Trauma System Section to support and/or provide evidence-based CVD education and other resources/tools utilizing established conferences and workshops as feasible.

**Systems Change**

In collaboration with the EMS and the Trauma System Section:

1. Continue to implement a plan to address the gaps identified in the statewide Assessment of Michigan’s Emergency Medical Services for Cardiovascular Disease.
2. Support the funding and implementation of a statewide trauma system.
3. Educate/engage policy makers and other community leaders on EMS priorities and support EMS related policies and initiatives directed at improving CVD care and EMS response.
4. Establish baseline performance measures related to CVD emergencies, compare results to national benchmarks, and develop and implement a quality improvement plan to address the gaps (e.g. run time using the National EMS Information System as a data collection tool).





**Priority 5: Improve the quality of heart disease and stroke care.**

**Objective 1: By 2014, improve provider compliance with established guidelines for CVD in select primary care setting throughout Michigan.**

DATA SOURCE	BASELINE	TARGET 2014
TBD	TBD	TBD

**Objective 2: By 2014, improve three of the consensus measures for stroke in acute care settings by 10% in Michigan Stroke Registry Quality Improvement Program (MiSRQIP) hospitals.**

DATA SOURCE	BASELINE	TARGET 2014
Coverdell (MiSRQIP)	TBD (2008)	Increase by 10%

**Objective 3: By 2014, increase the proportion of patients who receive care consistent with performance measures/indicators for heart failure in Get With the Guidelines acute care settings by 5%.**

DATA SOURCE	BASELINE	TARGET 2014
Get with the Guidelines	TBD (2008)	Increase by 5%

**Objective 4: By 2014, increase the proportion of patients who receive care consistent with performance measures/indicators for coronary artery disease in Get With the Guidelines acute care settings by 5%.**

DATA SOURCE	BASELINE	TARGET 2014
Action Registry	TBD	Increase by 5%





“Following national guidelines is key to ensuring quality of care. The importance of doing an ankle brachial index and pulse volume recording test proved to be life saving for one of my patients with multiple risk factors for peripheral arterial disease. I forwarded a copy of the test to her cardiologist who ordered further testing which resulted in open heart surgery for coronary artery bypass grafting.”

— Kyle W. Sundblad,  
D.P.M., D.A.B.P.S.,  
F.A.P.W.C.A., Colleague of  
Alliance member

## STRATEGIES:

### Public/Patient Awareness

1. Encourage self-advocacy of secondary prevention strategies to individuals in managing their heart disease or stroke or related risk factors (e.g. Let's Talk 3, Patient Health Record, PATH).
2. Collaborate with existing partners (e.g. community health, rehabilitation, home healthcare workers) to educate the public on standards of care for heart disease and stroke prevention and treatment.
3. Utilize tools and strategies to improve the quality of care for people with heart disease or stroke (e.g. Know Your Numbers, Let's Talk 3, patient health record, and public report cards).
4. Encourage the use of underutilized resources that support heart disease and stroke prevention and control (e.g. covered health screenings, PATH, blood pressure monitors, dieticians).

### Professional Education

1. Promote findings of The Impact of Heart Disease and Stroke in Michigan: 2008 Report on Surveillance and new cardiovascular burden data in conferences, workshops, and presentations.
2. Support professional education to reinforce standards and treatment guidelines (e.g. blood pressure, ankle-brachial index).
3. Disseminate evidence-based protocols and screening guidelines to professionals and community members (specifically incorporating self management techniques, appropriate referral and follow-up).
4. Provide professional education on the importance and application of quality indicators from national organizations (e.g. The Joint Commission (TJC), Health Effectiveness Data Information Set (HEDIS) and the National Committee for Quality Assurance (NCQA)).
5. Promote professional education programs that emphasize education and counseling post acute stroke or cardiac event to prevent reoccurrence and support optimal management of risks.
6. Promote the utilization of proven quality improvement programs to enhance quality of care (e.g. Get with the Guidelines).

### Systems Change

1. Collaborate with partners to monitor the outcomes of system change initiatives and projects in primary care settings to identify best practices and enhance adherence to established guidelines for CVD and related risk factors.
2. Collaborate with partners to identify best practices in CVD care and disseminate the best practices and improved models of healthcare delivery to various healthcare settings throughout the state, based on new research findings and the outcomes of the system change initiatives and quality improvement projects in Michigan.





3. Evaluate the outcome of the Health Plan Quality Improvement project directed at improving adherence to clinical guidelines and case management of CVD risk factors, and based on its successes, expand the project to other health plans.
4. Evaluate the outcome of the Cardiac Rehabilitation Quality Improvement project, aimed at improving health outcomes of patients recovering from CVD events, and based on its successes, expand the project to other cardiac rehabilitation programs.
5. Continue to support quality improvement projects in hospitals aimed at improving adherence to evidence-based care of patients and spread the projects to other hospitals in Michigan emphasizing lessons learned (e.g. Get With the Guidelines, Transitions of Care).
6. Work with the Michigan Coverdell Stroke Registry and Quality Improvement Program and participating hospitals to improve the management of acute stroke care focusing on the ten performance measures.
7. Collaborate with MI PATH partners to support ongoing trainings and to promote a coordinated process for referrals to the Stanford Chronic Disease Self-Management Program (e.g. 211, primary care or other referral sources).
8. Develop a mechanism to track short and long-term health outcomes of individuals participating in the CVD PATH project.



Fisherman in Canoe  
*Photo Credit: Randall McCune*





**Priority 6: Eliminate HDS disparities related to race, ethnicity, gender, geography, and socioeconomic status.**

**Mortality/Race:**

**Objective 1: By 2014, reduce the age-adjusted mortality rate for heart disease for blacks by 5%.**

DATA SOURCE	BASELINE	TARGET 2014
MDCH Vital Statistics	320.2 per 100,000 (2006)	Reduce by 5%

**Objective 2: By 2014, reduce the age-adjusted mortality rate for stroke for blacks by 5%.**

DATA SOURCE	BASELINE	TARGET 2014
MDCH Vital Statistics	58.9 per 100,000 (2006)	Reduce by 5%

**Geography:**

**Objective 3: By 2014, reduce the number of counties that are above the national rate for age-adjusted heart disease mortality.**

DATA SOURCE	BASELINE	TARGET 2014
MDCH Vital Statistics & CDC Wonder	37 counties (2002-2006)	Reduce to less than 37 counties

**Objective 4: By 2014, reduce the number of counties that are above the national rate for age-adjusted stroke mortality.**

DATA SOURCE	BASELINE	TARGET 2014
MDCH Vital Statistics & CDC Wonder	36 counties (2002-2006)	Reduce to less than 36 counties





## STRATEGIES:

### Public/Patient Awareness

1. Increase efforts to reduce health disparities by targeting existing programs when possible (e.g. WISEWOMAN) and developing new programs as needed to overcome barriers or increased risk posed by age, gender, race, ethnicity, language, education income or geography, and work closely with communities, worksites, faith-based, and healthcare settings to support these high risk/at risk populations and locations in preventing and managing CVD.
  - a. Partner with high risk/at risk populations and locations to incorporate information regarding heart disease and stroke into relevant meetings, conferences, educational materials, and social marketing campaigns.
  - b. Utilize community health workers/lay health educators to educate families and communities about available treatment, programs and services.
  - c. Use educational materials that are culturally sensitive, language appropriate, and presented at the literacy level of the intended audience.
  - d. Target educational efforts for high-risk groups (e.g. certain racial/ethnic groups, men, women, home health patients, people with disabilities, and people with diabetes).
  - e. Present education in a variety of venues throughout the community and use multiple communication channels (e.g. mass media, peer-to-peer education, provider/patient education).
  - f. Consider alternative venues to address heart disease and stroke prevention management and control (e.g. corrections, mental health, sporting events).

### Professional Education

1. Partner with existing programs (e.g. faith-based programs) and minority health conference/workshop planners to incorporate content related to cardiovascular disease and disparate populations.
2. Promote cultural and ethnic sensitivity in the evaluation and treatment of CVD in disparate populations.
3. Educate and support referrals to evidence-based programs that reduce disparities (e.g. the Stanford Chronic Disease Self-Management Program).
4. Incorporate strategies and materials in professional education programs that are culturally sensitive, language and literacy appropriate, and with recommendations for reaching the targeted audience.
5. Continue to collaborate with the WISEWOMAN program staff to integrate evidence-based CVD clinical standards and training.

### Systems Change

1. Promote existing projects that address the gaps in disparities for CVD and improve timely management of CVD events (e.g. the Federally Qualified Health Center Collaborative, Telemedicine, Reducing Disparities at the Practice Site Project, WISEWOMAN).

“The best aspect of these strategies is that they allow everyone to work together toward the same goals. A common purpose will allow our public messages to have a broader impact and will aid in reducing disparities among Michigan residents.”

— Marianne Morrissey,  
Co-Leader,  
Public/Patient  
Awareness Workgroup





Whitetail Fawn  
Photo Credit: Randall McCune

2. Support the development of future projects in Michigan as relevant.
3. Collaborate with advocacy groups and other partners to support policies that promote health equity and access to high quality, affordable healthcare for all Michigan residents.
4. Explore activities and develop programs and projects that address the gaps and needs identified in the Impact of Heart Disease and Stroke in Michigan: 2008 Report on Surveillance.
5. Assess and explore methods for developing needed resources to improve access to CVD care throughout Michigan.

Implementation of this strategic plan will be dependent on continued collaboration with our partner organizations, the development of new and expanded partnerships, the creation of innovative programs and projects that aggressively reach all populations groups, and the availability of funding opportunities and resources. Evaluation will continue throughout the duration of the plan timeline to help to determine if progress is occurring and if necessary revisions are needed.



# Strategies Identified for Year One Implementation

At the final review of the Strategic Plan, members of the Michigan Cardiovascular Alliance were asked to prioritize strategies identified in this five-year plan. Members were given nine total votes for all 63 strategies. They were asked to place three votes for strategies in each workgroup, consider what strategies would be important as first steps, those with a broad reach, realistic for the next year, and those with potential public health impact. The votes from the meeting and a follow-up online survey for members who missed the meeting were tallied and the top votes for each workgroup are listed below with the priority numbered in parentheses. See the numbers and priorities indicated at the end for more information:

## Public Awareness

- Utilize available resources that support HDS prevention and control for patients and the public. (5)
- Target high-risk groups, present HDS prevention education in variety of venues and multiple communication channels, utilize lay health educators, use appropriate educational materials for targeted populations, explore alternative venues to reach the public and promote projects that address gaps in disparities for HDS care. For healthcare professionals, incorporate strategies and materials in educational programs that are culturally sensitive, language and literacy appropriate. (6)
- Encourage the public to develop a response plan for cardiovascular emergencies. (3)\*
- Utilize existing community resources to promote management of high blood pressure and high blood cholesterol. (1,2)\*

## Professional Education

- Provide professional education to reinforce standards and treatment guidelines. (5)
- Disseminate evidence-based protocols and screening guidelines. (5)
- Incorporate strategies and materials in educational programs that are culturally sensitive, language and literacy appropriate. (6)\*
- Increase awareness and usage of programs and tools that track and report patient progress. (1,2)\*

## Systems Change

- Promote projects that address gaps in disparities for HDS care. (6)
- Ensure consistent messaging regarding signs and symptoms of heart attack and stroke and emergency response - calling 9-1-1. (3)
- Collaborate with partners to identify best practices in CVD care and disseminate information about models leading to improvement in healthcare in Michigan. (5)\*
- Educate and engage decision and policy makers on CVD burden and costs and implications for prevention. (1,2)\*

\*Tie

1 & 2 = High blood pressure and high blood cholesterol

3 = Signs and symptoms for heart attack and stroke and calling 9-1-1

4 = Improve emergency response to CVD

5 = Improve the quality of HDS care

6 = Eliminate HDS disparities

At the final review of the Strategic Plan, members of the Michigan Cardiovascular Alliance were asked to vote on the strategies they felt would be important as first steps, have a broad reach, are realistic, and have the greatest potential public health impact.



New Presque Isle Lighthouse  
in Winter  
Photo Credit: Travel Michigan



# Charting the Roadmap to Success

“Obstacles are those frightful things you see when you take your eyes off your goal.”

– Henry Ford

## The Evaluation Process

The journey on the road to improving CVD in Michigan has been filled with success and challenges. As with any journey, knowing where you want to go and planning how to get there is essential. This plan provides that guidance. Ongoing evaluation will provide the roadmap for determining progress along the way, navigating detours and generating feedback on whether we made it where we planned to be.

Evaluation of this strategic plan will be based on the stated objectives and data sources identified within the plan. The evaluation will be informed by partners, colleagues and staff. The program logic model (Appendix F) will be used as an overview to evaluate progress and processes. This model will be an ongoing tool for evaluating program design and used in management as well as evaluation.

Indicators will be identified to measure program progress and accomplishments. An implementation plan will be developed based on priorities identified by the Michigan Cardiovascular Alliance. Process measures will be used for evaluation of early strategic plan progress. Success stories and surveys will inform progress. Outcomes will be based on the objectives identified in the plan and data sources are identified with each objective.

## Periodic Review and Reports

Review of progress in objectives and strategies will be done annually and reported to the Michigan Cardiovascular Alliance. Reports are as follows:

Reports to the Michigan Cardiovascular Alliance and Partners:

1. An annual oral report will be provided to the MiCA on accomplishments in this strategic plan and surveillance results on the burden of CVD and its risk factors. A sample report, “Measurements and Evaluation Benchmarks,” is included as Appendix A.
2. A midcourse progress report on this strategic plan will be completed in 2012 and disseminated to the Alliance and partners.
3. Annual burden updates will be published as relevant and disseminated via the CVD Fact Sheet (Appendix G) and other reports.

External reports will be provided to CDC through the online Management Information System (MIS) as required by the grant requirements. Other reports include contributing to periodic burden and narrative reports such as the Critical Health Indicators, BRFSS Reports and Fact Sheets, Healthy Michigan Fund Reports, Prevention Block Grant, Section annual reports and other relevant reports.



# Call to Action!

This Strategic Plan includes a myriad of strategies directed at reducing the burden of heart disease and stroke in Michigan. However, the objectives will not be achieved without a concerted effort from all partners interested in this important issue. Below are examples of what you can do.

If you are a . . .

## Hospital:

- ☑ Provide an on-going in-service to reinforce the use of evidence-based guidelines for heart disease and stroke.
- ☑ Support projects to improve the quality and delivery of healthcare services in your institution.
- ☑ Offer community education on prevention of heart disease and stroke and support services for heart disease and stroke patients.
- ☑ Make space available to accommodate community PATH workshops.
- ☑ Provide healthy foods in vending machines and cafeterias.
- ☑ Provide community screenings, education and referrals for high blood pressure and high cholesterol.

## Healthcare Provider:

- ☑ Participate in projects utilizing the Chronic Care Model and/or the Patient Centered Medical Home.
- ☑ Implement health information technology in your practice.
- ☑ Refer uncontrolled hypertensive patients to a hypertension expert.
- ☑ Diagnose and treat patients according to established guidelines.
- ☑ Provide awareness and prevention material to patients.
- ☑ Encourage patient self-management.
- ☑ Utilize tools to improve the quality of care for heart disease or stroke.
- ☑ Encourage the use of underutilized resources that support heart disease and stroke prevention, such as covered health screenings, blood pressure monitors, and referrals to other health professionals.

## Health Plan:

- ☑ Offer policy options and/or plan redesign to incentivize consumers to actively improve their health outcomes.
- ☑ Provide disease case management services to enrolled members.
- ☑ Make provider performance outcomes available and encourage incentives based on patient health outcomes.
- ☑ Promote system change initiatives in all participating practice sites.
- ☑ Offer prevention and other educational material to enrolled members.

## Local Public Health Department:

- ☑ Utilize lay health educators/community health workers in various community settings.
- ☑ Provide information about and/or access to care for the uninsured or underinsured.
- ☑ Advocate for policy and environmental changes to improve CVD health.
- ☑ Provide community screenings, education and referrals for high blood pressure and high cholesterol.

“The success or failure of any government in the final analysis must be measured by the well-being of its citizens. Nothing can be more important to a state than its public health; the state’s paramount concern should be the health of its people.”

— Franklin Delano Roosevelt



Hobie Cat Regatta on Lake Michigan  
Photo Credit: Travel Michigan



Fisher Lake and Lake Michigan in Fall  
Photo Credit: Travel Michigan

### Worksite:

- Educate employees about their benefit package, including preventative services.
- Offer onsite wellness programs, educational materials, and information about community resources.
- Establish a smoke-free workplace policy and subsidize smoking cessation classes.
- Offer healthy food options in vending machines and cafeterias.
- Provide training in the use of automated external defibrillators (AEDs) and cardiopulmonary resuscitation (CPR).
- Develop an emergency plan for cardiovascular events.

### Community Group:

- Advocate for policy and environmental changes to improve cardiovascular health.
- Become informed about EMS services in your community.
- Advocate and support funding for initiatives to improve CVD care and EMS response.
- Participate in statewide campaigns directed at informing consumers on the optimal management of high blood pressure and cholesterol.
- Disseminate information about local community CVD resources and services.

### Faith Based Organization:

- Provide education and resources to your members.
- Offer training in the use of AEDs and CPR.
- Give educational materials to members on the signs/symptoms of heart attack and stroke and the importance of calling 9-1-1.

### Michiganiaan:

- Become an informed, empowered consumer of healthcare services.
- Obtain healthcare from professionals who provide comprehensive, holistic care.
- Follow instructions from providers regarding screening, treatment and referrals.
- Know the signs and symptoms of heart attack and stroke and when to call 9-1-1.



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Tahquamenon Falls in Fall

Photo Credit: Thomas A. Schneider



## APPENDIX A

Measurement and Evaluation Benchmarks	Baseline		Year	Outcome - TBD	
	Data Source	Measure		Measure	Year
<b>Priority 1: Increase the number of adults who have their high blood pressure under control.</b>					
<b>Objective 1:</b> By 2014, increase by 2% the number of hypertensive adults in Michigan who have their blood pressure under control.  <b>Objective 2:</b> By 2014, decrease the proportion of adults, 18 years and older, in Michigan with high blood pressure to 27%.  <b>Objective 3:</b> By 2014, increase the proportion of adults, 18 years and older, in Michigan who are taking action to control their blood pressure by 5%*. <i>*Non-pharmacologic and pharmacologic</i>	Michigan Medicaid HEDIS Results Statewide Aggregate report Michigan Quality Improvement Consortium	56.1% (ages 18-85 years) Medicare: 59.78% Medicaid: 55.14% Commercial: 62.92%	2008		
	Michigan BRFS	29%	2007		
	Michigan BRFS	TBD	2009		
<b>Priority 2: Increase the number of adults who have their high blood cholesterol under control.</b>					
<b>Objective 1:</b> By 2014, increase by 2% the number of adults in Michigan who have their cholesterol under control.  <b>Objective 2:</b> By 2014, decrease the proportion of adults, 18 years and older, in Michigan, with high blood cholesterol to 37%.	Michigan Quality Improvement Consortium	Medicare: 64.8% Medicaid: 45.23% Commercial: 58.73%	2008		
	Michigan BRFS	39.9%	2007		
<b>Priority 3: Increase the number of adults who know the signs and symptoms for heart attack and stroke and the importance of calling 9-1-1.</b>					
<b>Objective 1:</b> By 2014, increase the proportion of adults, 18 years and older, in Michigan who can identify three or more heart attack warning signs by 3%.  <b>Objective 2:</b> By 2014, increase the proportion of adults, 18 years and older, in Michigan who can identify three or more stroke warning signs by 3%.	Michigan BRFS	TBD	2009		
	Michigan BRFS	89.1%	2007		



## APPENDIX A

Measurement and Evaluation Benchmarks	Baseline		Year	Outcome - TBD	
	Data Source	Measure		Measure	Year
<b>Objective 3:</b> By 2014, increase the proportion of adults, 18 years and older, in Michigan that would call 9-1-1 when they recognize someone is having a stroke or heart attack to 90%.	Michigan BRFS	86.6%	2007		
<b>Priority 4: Improve HDS emergency response.</b>					
<b>Objective 1:</b> By 2014, improve the quality of Emergency Medical Services (EMS) for heart attack and stroke.	EMS Assessment	Initial 2008 data	2008		
<b>Objective 2:</b> By 2014, use the designated regional areas in the trauma system structure to improve stroke and heart attack systems of care in three regions.	Michigan Department of Community Health	0 regions	2008		
<b>Priority 5: Improve the quality of heart disease and stroke care.</b>					
<b>Objective 1:</b> By 2014, improve provider compliance with established guidelines for cardiovascular disease in select primary care setting throughout Michigan.	TBD	TBD	TBD		
<b>Objective 2:</b> By 2014, improve three of the consensus measures for stroke in acute care settings by 10% in MiSRQIP hospitals.	Coverdell (MiSRQIP)	TBD	2008		
<b>Objective 3:</b> By 2014, increase the proportion of patients who receive care consistent with performance measures/indicators for heart failure in acute care settings by 5%.	Get With the Guidelines	TBD	2008		
<b>Objective 4:</b> By 2014, increase the proportion of patients who receive care consistent with performance measures/indicators for coronary artery disease in GWTG acute care settings by 5%.	Action Registry	TBD	TBD		



## APPENDIX A

Measurement and Evaluation Benchmarks	Baseline		Year	Outcome - TBD	
	Data Source	Measure		Measure	Year
Priority 6: Eliminate HDS disparities related to race, ethnicity, gender, geography, and socioeconomic status.					
<b>Objective 1:</b> By 2014, reduce the age-adjusted mortality rate for heart disease for blacks by 5%.	MDCH Vital Statistics	320.2 per 100,000	2006		
<b>Objective 2:</b> By 2014, reduce the age-adjusted mortality rate for stroke for blacks by 5%.	MDCH Vital Statistics	58.9 per 100,000	2006		
<b>Objective 3:</b> By 2014, reduce the number of counties that are above the national rate for age-adjusted heart disease mortality.	MDCH Vital Statistics & CDC Wonder	37 counties	2002-2006		
<b>Objective 4:</b> By 2014, reduce the number of counties above the national rate for age-adjusted stroke mortality.	MDCH Vital Statistics & CDC Wonder	36 counties	2002-2006		



# APPENDIX B

## MICHIGAN COUNTY MAP



## APPENDIX C Partners and Projects

PARTNERS AND PROJECTS DIRECTED TO CDC PRIORITY AREAS 1-6 AND POLICY AND SYSTEMS CHANGE								
Partners or Projects	Control HBP	Control HBC	Signs/Symp & Calling 9-1-1	Improving Emergency Response to HDS	Improve the quality of HDS care	Eliminate HDS Disparities	Policy & Systems Change	
Michigan Assn. of Health Plans: Implement BP and Chol. Quality Improvement Projects in 5 health plans	✓	✓			✓		✓	
National Kidney Foundation of Michigan: Collaborate on Screening Protocols, BP Measurement Quality Improvement CD, Training Programs	✓				✓		✓	
MI Stroke Registry and Quality Improvement Project (MiSRQP): Implement in partnership with AHA and 36 Michigan hospitals				✓	✓	✓	✓	
MI Health and Hospital Association and Michigan Peer Review Organization: Collaborate in Transitions of Care projects					✓	✓	✓	
American Heart/Stroke Association: Use Get With the Guidelines tools in hospitals	✓	✓		✓	✓	✓	✓	
American Heart/Stroke Association: Promote Mission Lifeline				✓	✓	✓	✓	
American Heart/Stroke Assn: Provide Public Awareness Campaigns for Heart Attack & Stroke, High Blood Pressure and Women and Heart Disease	✓		✓	✓		✓	✓	



APPENDIX C  
Partners and Projects

PARTNERS AND PROJECTS DIRECTED TO CDC PRIORITY AREAS 1-6 AND POLICY AND SYSTEMS CHANGE									
Partners or Projects	Control HBP	Control HBC	Signs/Symp & Calling 9-1-1	Improving Emergency Response to HDS	Improve the quality of HDS care	Eliminate HDS Disparities	Policy & Systems Change		
MiSRQIP hospitals and Alliance Partners: Promote FAST campaign and materials during Stroke Month			✓	✓	✓	✓			
WISEWOMAN project sites: Provide material and support incorporating awareness of Signs and Symptoms, Call 9-1-1, information in client visits			✓	✓		✓	✓		
Healthy Kids Healthy Michigan: Collaborate to consider incorporating sodium reduction in policies	✓						✓		
MI Chapter of American College Cardiology: Promote Door to Balloon Expansion and Mission Lifeline				✓	✓	✓	✓		
Mi Cardiovascular Alliance, MI Stroke Initiative: Promote conferences, trainings and workshops	✓	✓	✓	✓	✓	✓	✓		
National Kidney Foundation of MI: Hypertension Expert Group-Getting Blood Pressure to Goal, Professional Education/Curriculum Modules development	✓				✓	✓	✓		
Michigan State Medical Society: Collaborate on provider continuing education and policy discussion	✓				✓		✓		
Michigan Society for Cardiovascular & Pulmonary Rehabilitation: support for 15 programs participating in assessments and QI projects	✓	✓			✓		✓		



APPENDIX C  
Partners and Projects

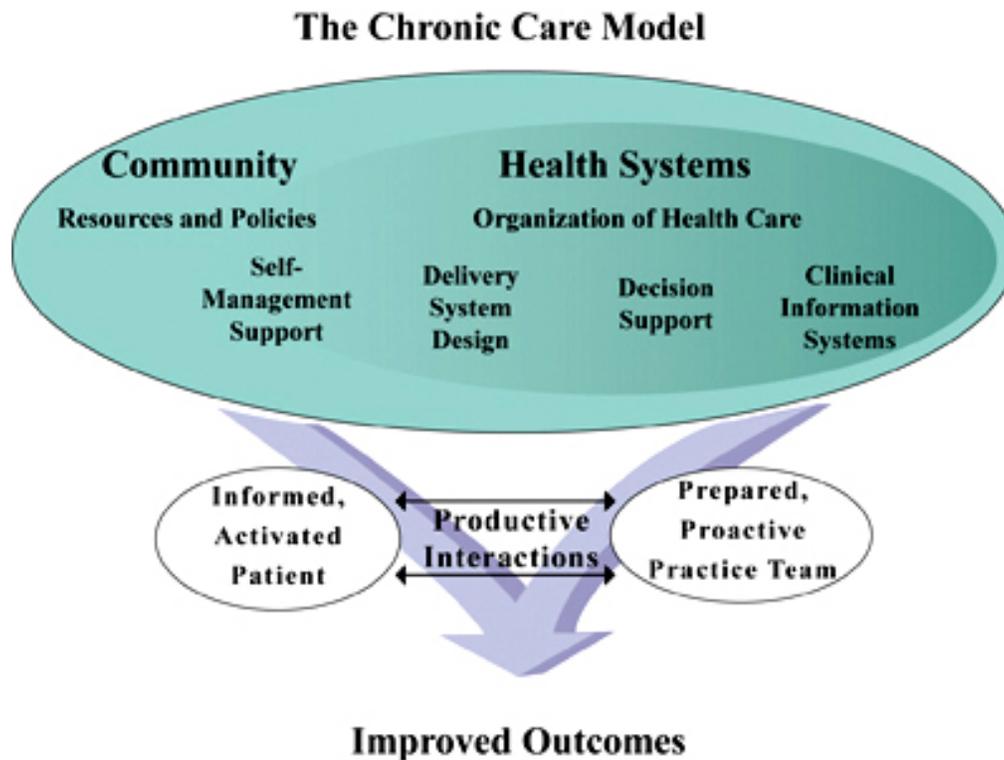
PARTNERS AND PROJECTS DIRECTED TO CDC PRIORITY AREAS 1-6 AND POLICY AND SYSTEMS CHANGE									
Partners or Projects	Control HBP	Control HBC	Signs/Symp & Calling 9-1-1	Improving Emergency Response to HDS	Improve the quality of HDS care	Eliminate HDS Disparities	Policy & Systems Change		
Emergency Medical Services and Trauma Systems Section: Provide education and improvement in stroke and heart attack emergency response				✓	✓	✓	✓		
Great Lakes Regional Stroke Network: Collaborate on EMS improvement, signs/symptoms, telehealth, rehabilitation			✓	✓	✓	✓	✓		
Duke University, CDC and Chronic Disease GIS Team: Expand and distribute mapping projects on CVD topics and risk factors	✓	✓	✓	✓	✓	✓	✓		
National Kidney Foundation: Healthy Hair Starts with a Health Body, Dodge the Punch and lay health education	✓		✓			✓			
Genomics Section: Collaborate on sudden cardiac death in the young and other projects			✓	✓	✓	✓	✓		
Personal Action Toward Health (PATH): Promote and offer Stanford Chronic Disease Self-Management Program to HDS population	✓	✓			✓	✓			
Michigan Faith-Based Association: Provide AED Units t			✓	✓		✓			
Michigan Worksites: Promote the signs/symptoms and emergency response toolkits, promote the Purchaser's Guide to Preventive Services	✓	✓	✓	✓	✓	✓	✓		



## APPENDIX D

### THE SIX CORE ELEMENTS OF THE CHRONIC CARE MODEL

1. Community
  - Resources and policies
2. Health system
  - a. Patient safety
  - b. Care coordination
3. Self-management support
4. Delivery system design
  - a. Cultural competencies
  - b. Case management
5. Decision support
6. Clinical information systems



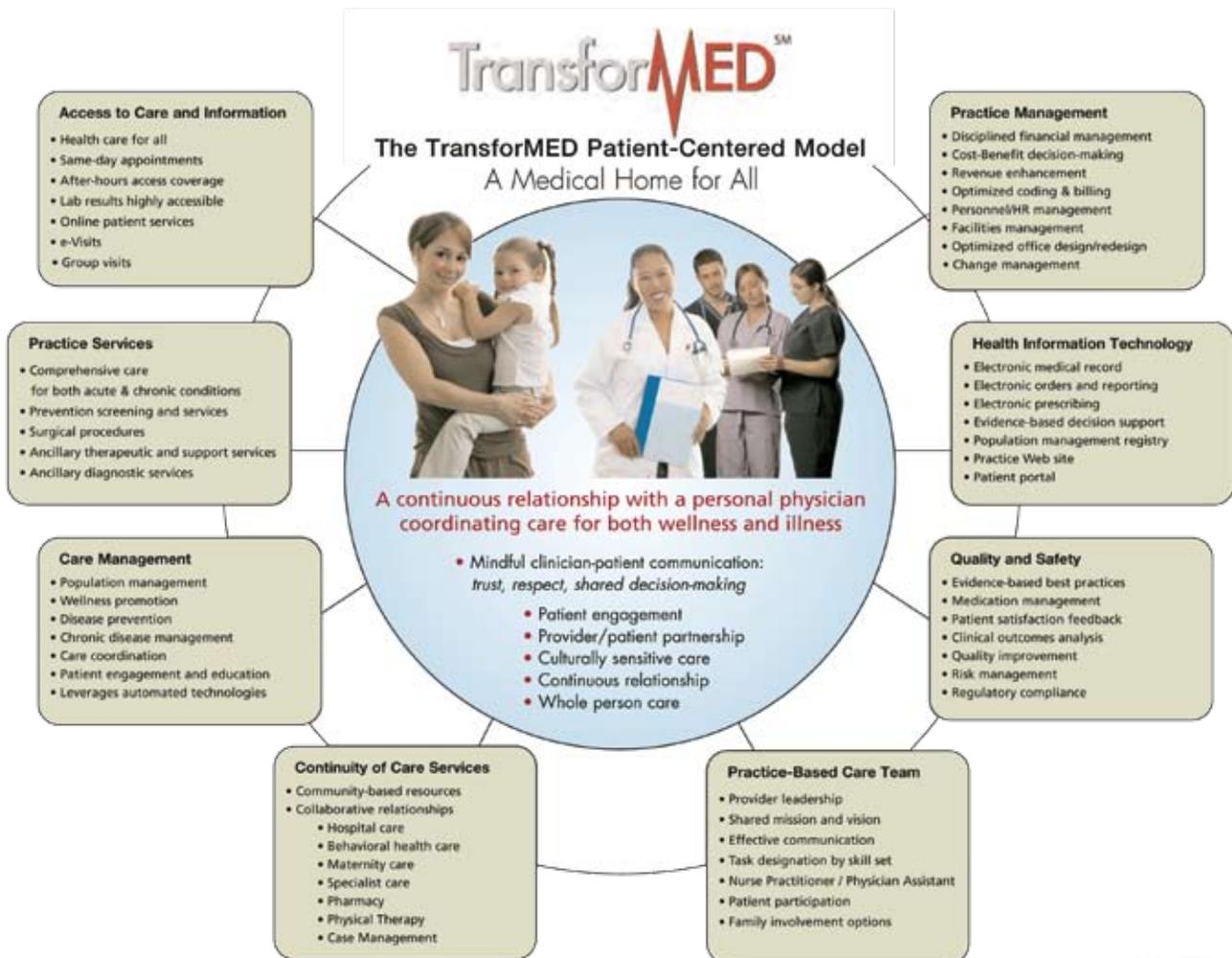
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# APPENDIX E

## THE KEY CONCEPTS IN THE PATIENT CENTERED MEDICAL HOME MODEL INCLUDE:

- Each patient has a continuous relationship with a personal physician.
- The personal physician leads a healthcare team who take responsibility for the ongoing care of the patient.
- The personal physician is responsible for all the patient's healthcare needs across all stages of life.
- Care is coordinated across the entire complex health system and facilitated by registries and information technology to assure that the patient gets the care when and where they need and want it in a culturally and linguistically appropriate manner.
- Quality and safety are hallmarks. Evidence-based medicine and decision support tools are used to direct care and patients actively participate in decision-making.
- Access to care is enhanced through systems such as open scheduling, expanded hours, and new options for communication.
- Payment appropriately recognizes the added value provided to patients who have a patient-centered medical home.

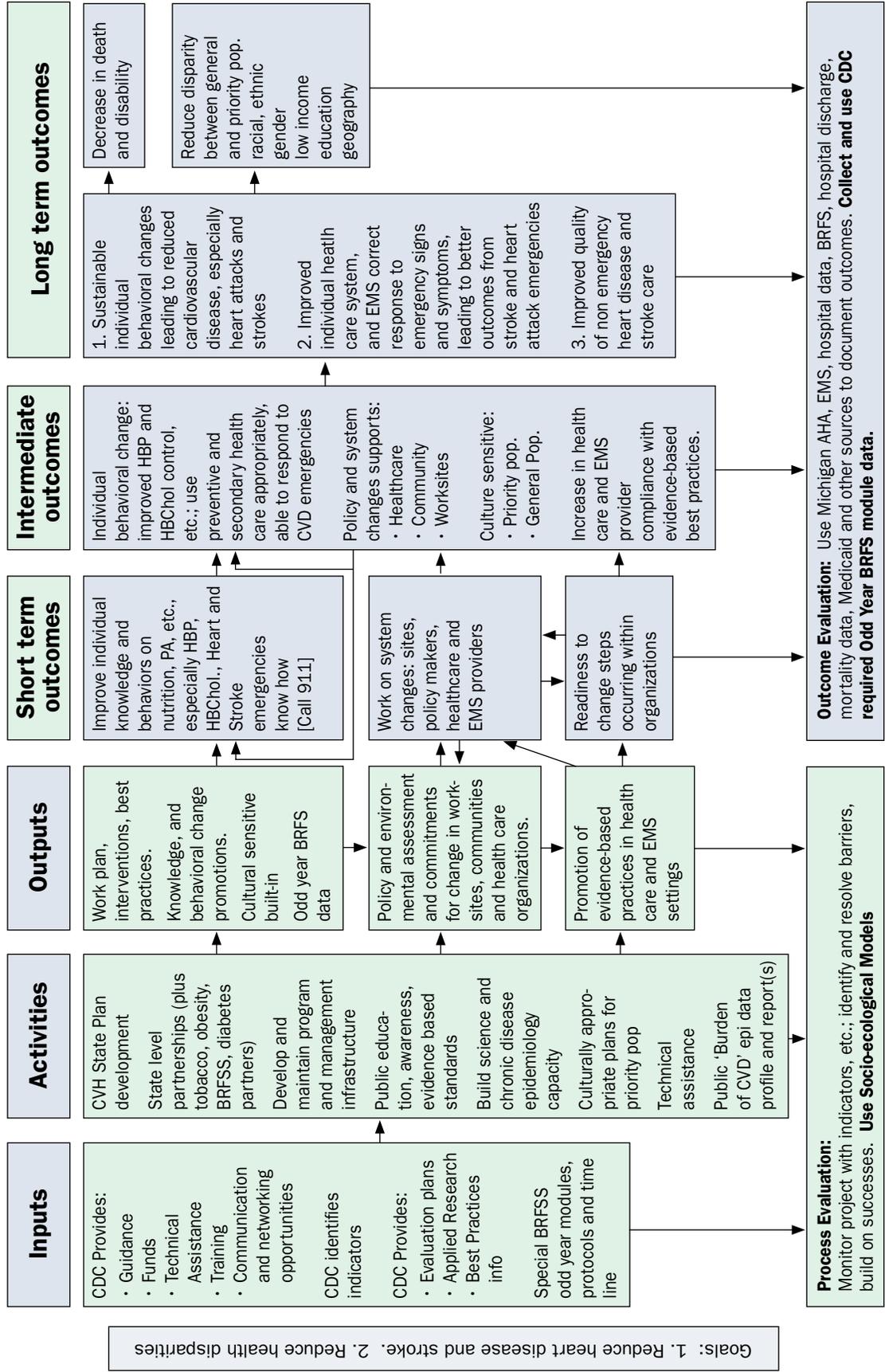


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# APPENDIX F MDCH Heart Disease and Stroke Prevention Program Logic Model





## 2009 CVD Fact Sheet

### Cardiovascular Disease (CVD) - Heart Disease, Stroke & Other Categories

- ♥ CVD is the number one cause of death in Michigan and has been nationally since 1919. <sup>(1,2)</sup>
- ♥ In 2007, heart disease and stroke killed 30,896 Michigianians. <sup>(1)</sup>
- ♥ Michigan ranks 10th worst of the fifty U.S. states for CVD age-adjusted mortality, based on 2005 death rates. <sup>(2)</sup>
- ♥ One out of every three deaths in Michigan is due to CVD. <sup>(1)</sup>
- ♥ The economic burden of CVD in Michigan, direct & indirect costs, is estimated at \$15.9 billion. <sup>(2)\*</sup>
- ♥ More than one in three American adults have some form of CVD and growth in the number of people over 65 years of age, increasing obesity and diabetes will increase the prevalence of CVD. <sup>(2)</sup>
- ♥ 73 million Americans have high blood pressure; 16 million have coronary heart disease; 5 million have congestive heart failure; about 6 million have had a stroke. <sup>(2)</sup>
- ♥ The Michigan Behavioral Risk Factor Survey (BRFS) has consistently shown that CVD risk factors are often more common among those with a lower socio-economic status. <sup>(5)</sup>

#### Heart Disease

- ♥ Most CVD deaths are due to heart disease. Heart disease has been the leading cause of death for decades and killed 24,258 Michigianians in 2007 and on average, someone dies every 21 minutes of heart disease in Michigan. <sup>(1)</sup>
- ♥ Coronary Heart Disease (CHD) is the most prevalent & preventable form of heart disease and estimated costs in Michigan are \$5.5 billion. <sup>(2)</sup>
- ♥ Michigan has the 8th worst age-adjusted CHD death rate of the fifty U.S. states, based on 2005 mortality data. <sup>(2)</sup>
- ♥ Since the mid-1970's, Michigan's age-adjusted heart disease death rate has been above the national rate, although the gap has been narrowing. On average, Michigan has 66 heart disease deaths per day. <sup>(1)</sup>
- ♥ Michigan's age-adjusted heart disease death rate for Blacks remains higher than national rates. The disparity is greatest between Black and White men. <sup>(1)</sup>
- ♥ Heart Failure is a growing problem, costs \$1.2 billion in Michigan, and preventable rehospitalization is a major contributor. <sup>(2)</sup>

#### Stroke

- ♥ Stroke is a leading cause of long-term, severe disability and is the third leading cause of death in the U.S. and Michigan. In Michigan, someone dies of a stroke every 110 minutes and estimated stroke costs are \$2.3 billion. <sup>(1,2)</sup>
- ♥ In 2007, there were an average of 4,638 stroke deaths in Michigan. <sup>(1)</sup> Those who survive a stroke often live with serious long-term impairments.
- ♥ High blood pressure (HBP) is a major risk factor for stroke. HBP costs in Michigan are estimated at \$2.45 billion. <sup>(2)</sup> Controlling HBP can reduce the risk of stroke up to 40%. <sup>(4)</sup>
- ♥ Michigan is ranked as 22nd worst in the fifty U.S. states for stroke mortality, based on 2005 mortality data. <sup>(2)</sup>
- ♥ Michigan's age-adjusted stroke death rate for Blacks is above national and state rates for Whites and national rates for Blacks. <sup>(1)</sup>

(1) Michigan Health Statistics. Division for Vital Records and Health Statistics - Michigan Department of Community Health. May, 2009.

(2) American Heart Association. Heart and Stroke Statistics – 2009 Update. Dallas, Texas: American Heart Association; 2009

\* (Cost estimated from report using MI % of U.S. pop [3.34%].)



## APPENDIX G

### Emerging Issues

- Five contiguous Michigan counties (Arenac, Bay, Gladwin, Clare and Ogemaw) have the highest hospitalization rates for CVD, heart disease, coronary heart disease and heart failure.
- Heart attack (90 minutes) and stroke (180 minutes) are time dependent medical emergencies. A 2006 EMS Survey showed rural run times average 94.8 minutes and Michigan is one of the few states in the nation to NOT have a funded statewide trauma system. This impacts emergency response to stroke and heart attack.
- In 2006 there were an estimated 200,000 stroke survivors. A 10% reduction in strokes could reduce Michigan Medicaid costs by \$29.8 million, much due to long-term care and disability.
- Michigan 2005 age-adjusted mortality rates per 100,000 population for stroke (46.4) and CHD (161.1) reached Healthy People 2010 goals of 50 and 162 respectively.<sup>(2,3)</sup> Preventing and controlling CVD risk factors will be essential to maintain these outcomes and progress.

### Multiple Risk Factors

- The major modifiable risk factors for CVD are cigarette smoking, physical inactivity, diabetes, overweight, high blood pressure, and high blood cholesterol.
- In 2008, Michiganians continuously had higher than average CVD risk factors. Only 4.4% of Michiganians reported engaging in all 4 healthy lifestyles (healthy weight, adequate fruit and vegetable intake, not smoking, and engaging in adequate physical activity).<sup>(5)</sup>
- In 2007, the age-adjusted percent distributions show that 97.1% of Michigan adults have one or more of the major CVD risk factors: 13.9% reported one, 25.8% reported two, 26.3% reported three, and 18.6% reported four or more risks.<sup>(5)</sup> Risk factors include high blood pressure, high cholesterol, smoking, overweight, diabetes, inadequate diet [ $<5$  servings of fruit and vegetables/day] and inadequate physical activity [ $<30$  min. 5 x/wk moderate or  $<20$  min 3x/wk vigorous].
- Nationally, of those with high blood pressure, 30% don't know they have it, only 34% have their blood pressure controlled, 25% are on medication but it's not controlled, and 11% aren't on any medication.<sup>(4)</sup>

#### PERCENTAGE OF MICHIGAN ADULTS WITH CVD RISK FACTORS, 1990-2008 <sup>(5)</sup>

(With comparison to 2008 National BRFSS Data)

RISK FACTOR	1990	1996	2002	2008	US 2008	2008 NATIONAL RANKING
Current Smoking	29.2	25.6	24.1	20.2	18.2	15 <i>tied</i>
Blood Pressure: Ever Told High (of tested)	23.3	23.8	NS	28.6 <sup>2007</sup>	27.5 <sup>2007</sup>	17 <sup>2007</sup>
Cholesterol: Ever Told High (of tested)	27	30.1	NS	39.9 <sup>2007</sup>	37.5 <sup>2007</sup>	5 <sup>2007</sup>
Overweight (BMI > 25) (Includes obesity)	47.4	54.7	62.1	65.3	63.1	16 <i>tied</i>
Obese (BMI > 30)	14.1	18.3	25.2	30.1	26.6	8 <i>tied</i>
Fruits & Vegetables: Less than 5 servings/day	NS	77.9	77.4	78.3	75.7 <sup>2007</sup>	14 <sup>2007</sup>
No Leisure Time Physical Activity	NS	23.1	24.3	25.1	24.8	23
Diabetes	NS	5.3	8.1	9.0	8.2	17

NS = Not Sampled that year or question/survey not comparable

More detailed information including maps of heart disease and stroke rates by county and epidemiological statistics at <http://www.michigan.gov/mdch/cvh> or <http://www.michigan.gov/mdch> (statistics)

(3) Healthy People 2010. DHHS.

(4) JNC 7, NHLBI, NIH, Hypertension. 2003; 42:1206-1252 and NHANES III.

(5) Behavioral Risk Factor Surveys, MDCH, 1990-2008\* & U.S. BRFSS 2008.



# APPENDIX H

## Partner Organization Endorsement Form

On behalf of \_\_\_\_\_, we support the strategies and  
Organization/Group/Agency

recommendations stated in *A Vision for Michigan: A Strategic Plan for Heart Disease and Stroke – 2009-2014*. We pledge to work collaboratively and cooperatively with colleagues around the state to accomplish these objectives within the next five years. We understand that the plan will be updated and revised annually through an inclusive process that provides numerous opportunities to make suggestions and adjustments.

Note: After September 1, 2009, the Strategic Plan may be downloaded at [www.michigan.gov/cvh](http://www.michigan.gov/cvh).

Signature \_\_\_\_\_ Date \_\_\_\_\_

Representing \_\_\_\_\_  
Name of Organization/Group/Agency

**Please help us to identify and reach other potential partners and supporters.** If you are aware of an organization or individual who would be interested in endorsing this plan, please add a contact name and email address here, and we will contact them. Thank you!

Potential endorsers:

Organization/contact name: \_\_\_\_\_

Email address: \_\_\_\_\_

Organization/contact name: \_\_\_\_\_

Email address: \_\_\_\_\_

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A list of partner organizations who have signed this endorsement form will be posted on the website [www.michigan.gov/cvh](http://www.michigan.gov/cvh) under **Advisory Committees, Michigan Cardiovascular Alliance**.



# APPENDIX I

## Glossary

**Access to Care** - The extent to which care is available to a patient in case of need. There are several types of barriers to access to health services including funding, physical, programming, and personal barriers.

**Age-Adjusted Rates** - A statistical process applied to rates of disease, death, injuries or other health outcomes that allows communities with different age structures to be compared. The potential confounding effect of age is reduced when comparing age-adjusted rates computed using the same standard population.

**Ankle Brachial Index (ABI)** - An objective measurement of arterial insufficiency based on the ratio of ankle systolic pressure to brachial systolic pressure. An ABI of 1.0 indicates absence of arterial insufficiency; an ABI of less than 0.50 indicates severe arterial insufficiency.

**Atherosclerosis** - A disease in which plaque builds up on the insides of your arteries. Arteries are blood vessels that carry oxygen-rich blood to your heart and other parts of your body. Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. Over time, plaque hardens and narrows your arteries. The flow of oxygen-rich blood to your organs and other parts of your body is reduced. This can lead to serious problems, including heart attack, stroke, or even death.

**Automated External Defibrillator (AED)** - A device that automatically analyzes the heart rhythm and, if it detects a problem that may respond to an electrical shock, it permits a shock to be delivered to restore a normal heart rhythm.

**Behavior Change** - A broad range of activities and approaches that focus on the individual, community, and environmental influences on behavior.

**Best Practice** - Actual practices, in use by qualified providers following the latest treatment modalities, which produce the best measurable results on a given dimension.

**Behavior Risk Factor Survey (BRFS)** - A statewide telephone survey of Michigan residents, aged 18 years and older and the only source of state-specific, population-based estimates of the prevalence of various behaviors, medical conditions, and preventive healthcare practices among Michigan adults. The BRFS is the national survey system conducted by CDC.

**Burden** - The impact of a health problem in an area measured by financial cost, mortality, morbidity, or other indicators.

**Cardiac Rehabilitation** - A program for people with heart disease designed to reduce future heart risks. Cardiac rehabilitation usually consists of nutritional counseling; management of lipid levels, hypertension, weight, and diabetes; smoking cessation; psychosocial interventions; physical activity counseling; and exercise training.

**Cardiopulmonary Resuscitation** - The emergency substitution of heart and lung action to restore life to someone who appears dead. The two main components of conventional cardiopulmonary resuscitation (CPR) are chest compression to make the heart pump and mouth-to-mouth ventilation to breath for the victim.

**Cardiovascular Disease (CVD)** - Refers to a class of diseases that affect the heart or blood vessels. Cardiovascular diseases include arteriosclerosis, coronary artery disease, heart valve disease, arrhythmia, heart failure, hypertension, orthostatic hypotension, shock, endocarditis, diseases of the aorta and its branches, disorders of the peripheral vascular system and congenital heart disease.

**Coronary Heart Disease (CHD)** - CHD is the most common type of heart disease. It occurs when the coronary arteries, that supply blood to the heart muscle, become hardened and narrowed due to the plaque buildup. CHD can lead to heart attack. Over time, CHD can weaken the heart muscle and lead to heart failure, a serious problem where the heart cannot pump blood the way that it should.

**Chronic Care Model** - The chronic care model identifies the essential elements of a healthcare system that encourages high quality chronic disease care. These elements are the community, the health system, self-management support, delivery system design, decision support and clinical information systems.



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**Chronic Disease** - A disease which has one or more of the following characteristics: is permanent, leaves residual disability; is caused by nonreversible pathological alternation, requires special training of the patient for rehabilitation, or may be expected to require a long period of supervision, observation, or care.

**Community Health Workers** - Lay members of communities who work in association with the local healthcare system and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve.

**Cultural Sensitivity** - Being aware that cultural differences and similarities exist and have an effect on values, learning, and behavior.

**Data Analysis** - The process of gathering, modeling, and transforming data with the goal of highlighting useful information, suggesting conclusions, and supporting decision-making.

**Determinants of Health Model** - A framework that illustrates factors, such as individual biology and behavior, physical and social environments, policies and interventions, and access to quality healthcare, that can have a profound effect on the health of individuals, communities, and the nation. An evaluation of these determinants is an important part of developing any strategy to improve health.

**Direct Costs** - Costs associated with an illness that can be computed to a medical service, procedure, medication, etc. Examples include payment for an x-ray; pharmaceutical drugs, insulin; surgery; or a physician visit.

**Disability** - A person with a disability is defined as an individual who: is determined to have a physical, mental, or emotional impairment which is: expected to be of long, continued and indefinite duration; AND substantially impedes his or her ability to live independently; AND is of such a nature that such ability could be improved by more suitable housing conditions.

**Disease** - May be defined as a failure of the adaptive mechanisms of an organism to counteract adequately, normally, or appropriately to stimuli and stresses to which it is subjected, resulting in a disturbance in the function or structure of some part of the organism. This definition emphasized that disease is multi-factorial and may be prevented or treated by changing any or a combination of the factors.

**Early Detection** - The act of discovering a disorder or disease before it has fully developed.

**Emergency Medical Service (EMS)** - Service providing out-of-hospital acute care and transport to definitive care for patients with illnesses and injuries that the patient believes constitutes a medical emergency.

**Epidemiology** - The study of factors affecting the health and illness of populations. It serves as the foundation and logic of interventions made in the interest of public health and preventive medicine.

**e-Prescribing** - Two way [electronic] communication between physicians and pharmacies involving new prescriptions, refill authorizations, change requests, canceling prescriptions, and prescription fill messages to track patient compliance.

**Evaluation** - A process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in the light of their objectives.

**Evidence-Based** - Effective programs and policies developed, implemented and evaluated through application of principles of scientific reasoning. Evidence-based guidelines are used as the gold standard for program design and implementation.

**Federally Qualified Health Center (FQHC)** - An umbrella term for a number of safety-net health programs and refers to how they are reimbursed by Medicaid. The following types of delivery sites are considered FQHC: Community/Migrant Health Centers; Health Care for the Homeless; Ryan White Title III clinics; Indian Health Service clinics; school-based clinics; public housing centers; rural health clinics and critical access hospitals.

**Genetics** - The science of heredity and variation in living organisms.

**Genomics** - The study of the genomes of organisms.



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**Geographic Information System (GIS)** - A computer software program that allows assembling, storing, manipulating, and displaying geographically referenced information, i.e. data identified according to their locations.

**Health** - A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

**Healthcare System** - A complex of facilities, organizations, and trained personnel engaged in providing healthcare within a geographical area.

**Health Disparities** - Differences in the incidence, prevalence, mortality, burden of diseases and other adverse health conditions or outcomes that exist among specific population groups. Health disparities can affect populations groups based on gender, age, ethnicity, socioeconomic status, and geography.

**Health Information Technology (HIT)** - The application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of healthcare information, data, and knowledge for communication and decision-making.

**Heart Disease** - A broad term that includes a range of heart conditions such as coronary artery disease, atrial fibrillation and congenital heart disease. The most common heart condition in the United States is coronary artery disease, which can lead to heart attack and other serious conditions.

**Heart Failure** - Impairment of the pumping function of the heart as a result of heart disease.

**Healthy People 2010** - A set of national health objectives designed to identify the most significant preventable threats to health and to establish national goals from 2000 - 2010 to reduce these threats.

**High Blood Cholesterol** - Cholesterol is a soft, fat-like, waxy substance found in the bloodstream and in all body cells. Too much cholesterol in the blood is a major risk for coronary heart disease (which leads to heart attack) and for stroke. High blood cholesterol (Hypercholesterolemia) is defined as total cholesterol readings above 240 mg/dl.

**High Blood Pressure** - Blood pressure is the force in the arteries when the heart beats (systolic pressure) and when the heart is at rest (diastolic pressure). It's measured in millimeters of mercury (mm Hg). High blood pressure (or hypertension) is defined in an adult as blood pressures greater than or equal to 140 mm Hg systolic pressure or greater than or equal to 90 mm Hg diastolic pressure. Individuals who have been diagnosed with high blood pressure and on treatment for it are considered as having high blood pressure.

**Impact** - The extent of the burden - including disability, premature death, and economic costs imposed by a condition with respect to quality and quantity of life for patients, as well as for families, employers, and society as a whole.

**Incidence** - The number of new cases of disease that develop in a population during a specified period of time, such as a year.

**Indirect costs** - Those costs associated with an illness that occur because an individual cannot work at his or her usual job due to premature death, sickness, or disability.

**Literacy** - The ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning to enable an individual to achieve his or her goals, to develop his or her knowledge and potential, and to participate fully in the wider society.

**Logic Model** - A systematic and visual way to present and share your understanding of the relationships among the resources available to operate a program, activities planned, and the changes or results hoped to achieve.

**Mortality** - The total number of deaths from a given disease in a population during a specific interval of time, usually a year.

**Objectives** - Statements describing the results to be achieved and the manner in which these results will be achieved.



**Outcome** - A patient or population health status as a result of an intervention or program.

**Patient Centered Medical Home** - An approach to providing comprehensive primary care for children, youth and adults. It is a healthcare setting that facilitates partnerships between patients and their healthcare provider, and, when appropriate, the patient's family.

**Patient Health Record** - A chronological account of a patient's medical history that may include information such as conditions, treatments, medication record, immunizations, allergies, screenings, demographics, family history, advance directives, insurance, and emergency contact information.

**Personal Action Toward Health (PATH)** - A Chronic Disease Self-Management Program (known as PATH in Michigan) is designed to help adults learn to better manage their chronic conditions.

**Payer** - A public or private organization that pays for or underwrites coverage for healthcare expenses.

**Pilot Project** - An initial or small-scale effort designed to test an idea or working approach. Pilot projects are usually undertaken with the intention of replicating or widening the scale of implementation at a later stage.

**Policy and environmental change** - An approach that focuses on enacting effective policies (e.g., laws regulations, formal and informal rules) or promoting environmental change (e.g., changes economic, social or physical environments).

**Prevalence** - The total number of cases of disease existing in a population during a specific point in time.

**Primary Care** - The provision of integrated, accessible healthcare services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community.

**Primary CVD Prevention** - A set of interventions designed to prevent the first occurrence of heart attack, heart failure, stroke, or cardiovascular risks in populations.

**Public Health** - The process of mobilizing and engaging local, state, national, and international resource to assure the conditions in which people can be healthy. The actions that should be taken are determined by the nature and magnitude of the problems affecting the health of the community.

**Quality** - The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine).

**Quality Improvement** - An approach to the continuous study and improvement of healthcare services to meet the needs of individuals and populations.

**Recession** - National Bureau of Economic Research (NBER) defines a recession as the time when business activity has reached its peak and starts to fall until the time when business activity bottoms out.

**Risk Factors** - A variable associated with an increased risk of disease or infection.

**Secondary Prevention** - A set of interventions aimed at populations with CVD risk factors or events (e.g. heart attack, heart failure, and stroke) or others with known CVD to reduce disability and risk for subsequent CVD events.

**Social Ecological Model** - A framework used to examine the multiple effects and interrelatedness of social elements in an environment (also called Socio-Ecological Model). It identifies five levels of influence for health-related behaviors and conditions: Individual, interpersonal, organizational, community, and public policy.

**Social Marketing** - Seeks to influence social behaviors in a target audience or the general society. The primary focus is on the consumer—on learning what people want and need rather than trying to persuade them to buy what we happen to be producing.



**Stanford Chronic Disease Self-Management Programs** - Programs designed to help people gain self-confidence in their ability to control their chronic disease symptoms and health problems affecting their lives. Small-group workshops are generally 6 weeks long, meeting once a week for about 2 hours, which are led by a pair of lay leaders with health problems of their own. The meetings are highly interactive, focusing on building skills, sharing experiences and support.

**ST elevation myocardial infarction (STEMI)** – A type of heart attack that occurs when the coronary artery is completely blocked off by a blood clot, and as a result, virtually all of the heart muscle being supplied by the affected artery starts to die. This more severe type of heart attack is usually recognized by an elevated ST segment identified on an electrocardiogram test (ECG).

**Stroke** - A stroke, cerebrovascular accident (CVA), or what is now being termed “brain attack” is a sudden loss of brain function resulting from a disruption of the blood supply to a part of the brain. Early treatment results in less loss of function and better prognosis.

**Standards** - A statement that defines the performance expectations, structures, or processes that must be substantially in place in an organization to enhance the quality of care.

**System** - The coming together of parts, interconnections, and purpose.

**2-1-1** - Where available, 2-1-1 is operated by a private non-profit community-service organization, local government or local affiliates of the national organization of the United Way of America. 2-1-1 provides information and referral to callers on where to obtain assistance from local and national social service programs, local and national governmental agencies and local and national non-profit organizations as well as where to volunteer or make a donation locally. Referrals are often given from databases accessed by call specialists.

**Trauma System** - An organized approach to acutely injured patients in a defined geographical area that provides full and optimal care and that is integrated with the local or regional Emergency Medical Service (EMS) system.

**Telemedicine** - The use of medical information exchanged from one site to another via electronic communications for the health and education of the patient or healthcare provider and for the purpose of improving patient care. Telemedicine includes consultative, diagnostic, and treatment services.

**Value Based Insurance Design (VBID)** - Involves lowering patients’ out-of-pocket fees for high-value preventive services and pharmaceuticals to increase compliance, improve clinical outcomes, and potentially reduce costs over the long term. Thus, the more clinically beneficial the therapy for the patient, the lower that patient’s cost-share will be. Higher cost sharing will apply to interventions with little or no proven benefit.

**WISEWOMAN** - (**W**ell-Integrated **S**creening and **E**valuation for **W**OMen **A**cross the **N**ation) - A program located at the Centers for Disease Control and Prevention (CDC) within the Division for Heart Disease and Stroke Prevention (DHDSP). WISEWOMAN consists of 21 CDC funded WISEWOMAN programs in 20 states (2 programs in Alaska) and tribal organizations. Through these 21 programs, WISEWOMAN provides CVD screening and lifestyle interventions for many low-income, uninsured, or under-insured women aged 40–64.



## APPENDIX J

### Cardiovascular Health, Nutrition and Physical Activity Section Website Links

Resources available at [www.michigan.gov/cvh](http://www.michigan.gov/cvh)

#### BURDEN OF CARDIOVASCULAR DISEASE

##### Impact of Sudden Cardiac Death in the Young in Michigan

Summarizing data in Michigan for cardiac deaths of unknown cause in populations under age 40. (2009)

##### Impact of Heart Disease and Stroke in Michigan: 2008 Report on Surveillance

Provides a comprehensive report on cardiovascular disease (CVD), heart disease, coronary heart disease, stroke, heart failure, risk factors associated with CVD and some of the resources/facilities of interest in reducing and controlling CVD in Michigan.

##### Great Lakes Stroke Burden Document

A report that describes the burden of stroke in the Great Lakes States: Michigan, Ohio, Indiana, Illinois, Wisconsin, Minnesota. (2006)

##### Michigan Stroke Initiative Report and Recommendations

The first state report on the burden of stroke and recommendations for improving stroke care in Michigan. (2000)

##### Stroke Fact Sheet

Mortality data as well as risk factor surveillance data are reported with a Michigan map with county rate status. (2006)

##### The Great Lakes Regional Stroke Network Regional Public Health Action Plan for Stroke

A plan for improving stroke in Michigan, Illinois, Indiana, Minnesota, Ohio and Wisconsin. (2007)

##### Women and Cardiovascular Disease in Michigan Fact Sheet

This document shows the latest data about Cardiovascular Disease in women (CVD). (2009)

##### Cardiovascular Disease Fact Sheet

Summary of Michigan data focusing on heart disease, stroke and risk factor data over time. (2009)

##### Improving Cardiovascular Health in Michigan: 2003 Update on the Continuing Challenge Executive Summary

An update on the cardiovascular problem in Michigan with recommendations from a statewide task force to reduce the CVD burden. (2003)

##### Five-year plan to address the epidemic of obesity in Michigan (2005).

##### The Economic Cost of Physical Inactivity

This report describes the burden and cost of physical inactivity in Michigan. (2003)

#### HEALTHCARE

##### Blood Pressure Measurement Procedure

Step-by-step procedure for accurate blood pressure measurement using the latest American Heart Association guidelines. (2003)

##### Blood Pressure Measurement Quality Improvement CD

A free self-instructional CD based professional education program addressing standardized measurement procedure, equipment issues, common errors, testing of knowledge and interpretation of Kortokoff sounds and home measurement by patients.

##### Michigan Public Act 493

A Summary of the new Michigan legislation: that decreases the availability of mercury-based blood pressure manometers. (2008)



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### Healthy Lifestyle Prescription

Patient education tool designed for healthcare providers, featuring advice and resources printed on a prescription format that focuses on smoking cessation, healthy eating and regular physical activity. (2005)

### Heart Failure Patient Record

A patient health record, developed in conjunction with MPRO to improve communication with the heart failure patient after discharge between the family, physician and home care. You can reprint it or use this information as a model for your own program. (2006)

### Patient Health Record

A wallet-size tri-fold health record for individuals to record health information, periodic tests and health goals. This was designed around the MQIC preventive recommendations/guidelines. (2005)

### Stroke and CVD Risk Screening Form

A model screening form developed for use in community and faith-based stroke and CVD risk screening programs. (2003)

### Stroke Education Tools

Designed for EMS providers as a quick reference regarding pre-hospital stroke care. Using these tools will enhance the use of the Michigan Stroke protocol, the Cincinnati Pre-hospital Stroke Scale, and determine when the patient was last seen normal. (2008)

### An Ounce of Prevention...Why Investing in Prevention Pays

A brochure developed by the Michigan Steps Up Healthcare Group that summarizes key benefits of health promotion/disease prevention. (2005)

## **HEALTHY BUSINESSES**

### Michigan's Healthy Workplaces Resource Guide

This guide provides worksites—large and small—with resources to start or enhance a worksite wellness program. From forming a wellness committee to evaluating activities, this guide can provide worksites with the direction that they need to create healthier worksites that support employees' healthy lifestyles. (2008)

### Worksite Wellness Chronicles

Documents highlighting work that is being done in businesses across Michigan related to employee health promotion. (ongoing)

### A Listing of Worksite Vendors in Michigan: 2007

## **WHAT'S NEW PAGE**

### A Guide for Michigan Legislators on Heart Disease & Stroke

This guide, supported by the American Heart Association, offers concise statistical trends on Heart Disease and Stroke in Michigan and an overview of some statewide initiatives to reduce these diseases.(2009)

### Emergency Care in Michigan: Getting the Right Patient to the Right Place at the Right Time

A fact sheet summarizing many of the issues and challenges in EMS care in Michigan. (2009)



## APPENDIX K

### Web Resources

1. Agency for Healthcare Research and Quality (AHRQ)  
<http://ahrq.gov>
2. American College of Cardiology  
<http://acc.org/>
3. American Heart Association (AHA)  
<http://www.americanheart.org>
4. American Stroke Association (ASA)  
<http://strokeassociation.org>
5. American Public Health Association (APHA)  
<http://www.apha.org/>
6. Association of State and Territorial Health Officials (ASTHO)  
<http://www.astho.org/>
7. Behavioral Risk Factor Surveillance System (BRFSS)  
<http://www.cdc.gov/BRFSS/>
8. Cardiovascular Health Council, National Association for Chronic Diseases  
<http://www.chronicdisease.org/i4a/pages/Index.cfm?pageID=3597>
9. Centers for Disease Control and Prevention (CDC)  
<http://www.cdc.gov/>
10. CDC – Division for Heart Disease and Stroke Prevention  
<http://www.cdc.gov/dhdsp/>
11. Center for Healthcare Strategies, Inc.  
<http://www.chcs.org/>
12. Center for Studying Health System Change  
<http://www.hschange.com/>
13. Cochrane Collaboration  
<http://www.cochrane.org/>
14. Great Lakes Regional Stroke Network  
<http://www.uic.edu/depts/glstrknet/>
15. Healthy People 2010  
<http://www.healthypeople.gov/>
16. Health Resources and Services Administration (HRSA)  
<http://www.hrsa.gov/>



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17. Institute for Healthcare Improvement  
<http://www.ihl.org/ihl>
18. Medical Home  
<http://www.medicalhomeforall.com>
19. Michigan Association of Health Plans  
<http://www.mahp.org/>
20. Michigan Association of Local Public Health  
<http://www.malph.org/>
21. Michigan Department of Community Health, Diabetes and Kidney Disease  
<http://www.michigan.gov/diabetes>
22. Michigan Department of Community Health, Division of Vital Records and Health Statistics  
<http://www.michigan.gov/vitalrecords>
23. Michigan Department of Community Health, Tobacco Control Program  
<http://www.michigan.gov/tobacco>
24. Michigan Health and Hospital Association  
<http://www.mha.org/>
25. Michigan Quality Improvement Consortium  
<http://www.mqic.org>
26. Michigan Primary Care Association  
<http://mpca.net/>
27. Michigan Primary Care Consortium  
<http://mipcc.org/>
28. Michigan Public Health Institute  
<http://www.mphi.org/>
29. Michigan State Medical Society  
<http://msms.org/>
30. Michigan Steps Up – Health Risk Appraisal  
<http://www.michiganstepsup.org>
31. Michigan United Way 2-1-1 Inc.  
<http://www.uwmich.org/2-1-1/michigan-2-1-1-inc/>
32. Morbidity and Mortality Weekly Report  
<http://www.cdc.gov/mmwr/>
33. National Association of Chronic Disease Directors – CVH Resources  
<http://www.chronicdisease.org/i4a/pages/Index.cfm?pageID=3642>



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34. National Guideline Clearinghouse  
<http://www.guideline.gov/>
35. National Heart, Lung and Blood Institute (NHLBI) – National Institutes of Health (NIH)  
<http://nhlbi.nih.gov/>
36. National Kidney Foundation of Michigan  
<http://www.nfkm.org>
37. National Partnership for Action to End Health Disparities  
<http://www.omhrc.gov/npa/>
38. Partnership for Clear Communication  
<http://www.npsf.org/pchc/>
39. Personal Action Towards Health (PATH) Project in Michigan  
<http://mipath.org>
40. Stanford Chronic Disease Self Management Program  
<http://patienteducation.stanford.edu/programs/cdsmp.html>
41. Systematic Approach to State Heart Disease and Stroke Prevention Programs (A)  
<http://orise.orau.gov/hdsproadmap/>
42. Value Based Insurance Design  
<http://www.vbidcenter.org>
43. Well Integrated Screening for Women Across the Nation (WISEWOMAN)  
<http://www.cdc.gov/WISEWOMAN/>
44. United States Department of Health and Human Services  
<http://www.dhhs.gov/>

