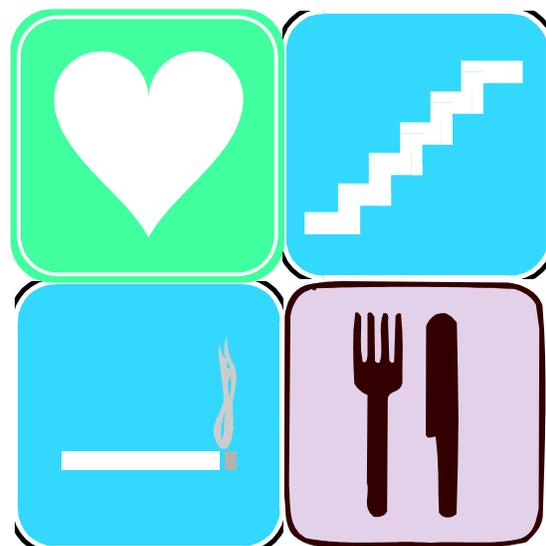


Preventing Cardiovascular Disease in Maryland: Public Health Strategies

April 2003

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Cardiovascular Disease

Public Health Challenges for Maryland

Maryland's leading cause of death is cardiovascular disease, primarily heart disease and stroke.

Heart disease and stroke are the number one and number three causes of death and disability in Maryland for both men and women in all racial and gender categories. In 1999, 16,151 Marylanders died of cardiovascular disease (CVD). Maryland ranks 24th in the nation in cardiovascular disease deaths and 19th in stroke deaths. CVD death rates declined in Maryland, as in the U.S., over the past two decades.

Premature CVD deaths, defined as those occurring under the age of 65, represent about a third of all stroke deaths and 20% of all CVD deaths.

Pronounced disparities in disease rates and risk factors are evident in Maryland, primarily ethnic and socioeconomic.

Cardiovascular disease and associated risk factors are most predominant in people of color in Maryland. African American men and women are more likely to die of stroke than other ethnic groups. Premature CVD mortality is twice as high in black men as white men and three times as high in black women as white women. The highest rate of cardiovascular mortality (Baltimore City) is almost double the lowest rate (Montgomery County).

If the Maryland black population had the same age-specific cardiovascular mortality rate as the white population of Maryland's most affluent county (Montgomery), the black population of Maryland would have a CVD rate that was 26% lower.

Heart disease and stroke are expensive to treat.

There were 448,729 days of hospitalization in 1999 resulting from cardiovascular disease. Hospital charges alone, for these hospital stays, were slightly more than \$890 million. Of this amount, \$140 million represents charges for stroke hospitalizations.

Maryland's upward trends in obesity, overweight and diabetes may eventually lead to a rise in cardiovascular disease rates.

Future costs of cardiovascular disease are likely to be higher if current trends in obesity, diabetes and poor eating and physical activity habits are not reversed. Uncontrolled high blood pressure and diabetes are major causes of stroke, heart attack and end-stage kidney disease, all of which require substantial health care expenditures for management.

U.S. children are increasingly likely to be overweight and/or to have type 2 diabetes. Over half the overweight children 5 to 10 years old have at least one cardiovascular risk factor. Twenty-five percent have two or more.



Reducing heart disease and stroke rates further requires reducing risk factors such as high blood pressure, high blood cholesterol, smoking, obesity, diabetes and inactivity in the whole population.

According to a recent article from Harvard researchers, healthy diet, combined with regular physical activity, avoidance of smoking and maintenance of a healthy body weight may prevent a major portion of the cardiovascular disease in Western populations. The World Health Organization names high blood pressure, high blood cholesterol, overweight, inactivity, and low fruit and vegetable intake as top factors responsible for premature death in industrialized countries.



Creating living environments and policies that promote physical activity and healthy eating opportunities.

Determinants of unhealthy diets and sedentary lifestyles are often environmental, meaning the design of workplace, school, and community environments makes it easy to overeat and choose less nutritious foods while making it difficult to be active. Fast food, snack foods and sodas are readily available in cafeterias and vending machines, while fruits and vegetables, milk and more nutritious snacks are hard to find. Portion sizes of everything from French fries to bagels have doubled or tripled over the past ten years. Schools have reduced the time children spend being active by cutting recess and physical education classes. Many children spend too much time watching TV and no longer walk to school.

Improving the diet and physical activity patterns of Marylanders means creating communities that increase opportunities for healthy food choices and physical activity.

The Burden of Cardiovascular Disease in Maryland

Mortality, Morbidity and Risk Factors

Mortality

Maryland is near the average for heart disease and stroke mortality among the fifty states. In 1999, 46,676 Marylanders died of cardiovascular disease, representing 35% of all deaths in Maryland.

During the period 1979-1998, heart disease mortality rates in Maryland declined 39% and stroke mortality declined 29%. About one half of the decline can be attributed to reductions in risk factors and about half to improved medical treatment. The heart disease mortality rate for adults age 75-84 is about 6 times the rate for those in the group age 55-64. The stroke mortality rate is about 10 times higher when comparing the same age groups.

Heart disease mortality is greater for men than women, greater for blacks than whites, and increases dramatically with age. (1996-1998) Stroke mortality is also higher for men and blacks, and increases dramatically with age. (1990-1991)

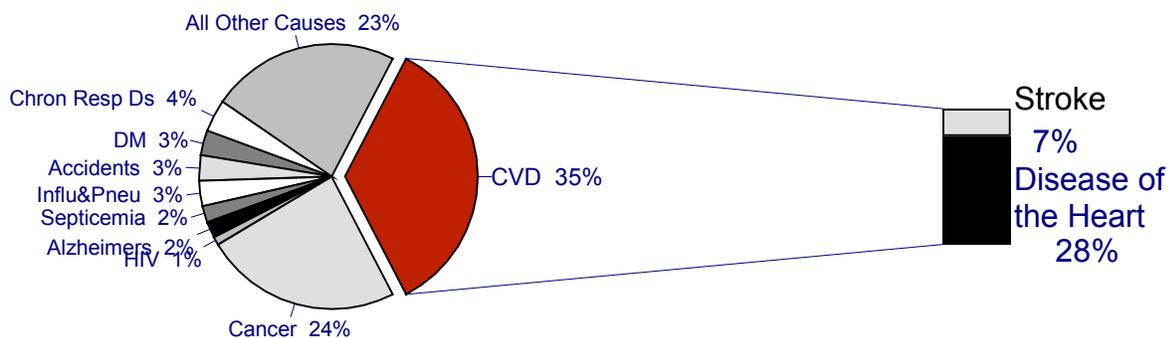
Allegany, Garrett, Caroline and Somerset counties and Baltimore City have the highest mortality rates of all Maryland jurisdictions (see Appendix A, p. 21)

Morbidity

The Maryland Health Care Commission compiles data on the most frequent diagnoses among privately insured residents and Medicare beneficiaries for office and clinic visits. In 1998, essential hypertension was the single most common diagnosis, representing 14% of the total. Diseases of lipid metabolism were 8.6% of the total. Hypertension was also the most frequent diagnosis for all beneficiaries age 40 and over.

Among the top 12 most frequent emergency room diagnoses in privately insured residents and Medicare beneficiaries are cardiac dysrhythmia, heart failure and essential hypertension.

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Among the top 12 most frequent emergency room diagnoses in privately insured residents and Medicare beneficiaries are cardiac dysrhythmia, heart failure and essential hypertension.

For stroke, men had a slightly higher rate of hospital discharge than women, blacks had a higher rate than whites, and the rates rose dramatically with age. Almost 70 percent of stroke discharges were in persons 65 or older.

Maryland Hospital Discharge Data

In 2000, heart disease and stroke accounted for 90,122 hospital discharges among Maryland residents hospitalized at Maryland hospitals. These discharges accounted for 404,073 days in the hospital and \$813,780,678 of hospital charges. Eighty percent of the total was due to heart disease.

In Maryland the average length of stay is about a half day longer for stroke than heart disease, but the average charge is about \$800 less for a stroke than for a heart disease hospitalization.

Men had a higher rate of heart disease hospitalization than women, blacks had a higher rate than whites, and hospitalization rates increased dramatically with age. More than sixty percent of hospital discharges for heart disease occurred in persons 65 or older.

Other Costs

The direct costs of physical inactivity (defined as absence of leisure time physical activity), are approximately \$24 billion, or 2.4% of the US health care expenditures. Direct costs for obesity (defined as body mass index greater than 30) in 1995 dollars, total \$70 billion. These costs are independent of those resulting from lack of activity. Physical inactivity and obesity are both risk factors for cardiovascular disease.

Maryland Discharges from Maryland Hospitals			
First Diagnosis, 2001			
Discharge Diagnosis	Number	LOS	Charges
Cancer	30,338	168,771	\$341,403,790
Cardiovascular	99,764	451,850	\$998,897,575
Diabetes	8,238	40,864	\$61,035,991
Maryland Discharges from Maryland Hospitals			
Any Mention, 2001			
Discharge Diagnosis	Number	LOS	Charges
Cancer	61,075	347,663	\$653,269,698
Cardiovascular	294,158	1,529,913	\$2,831,925,764
Diabetes	103,412	562,562	\$979,680,161
Obesity	29,382	133,039	\$253,327,407

Hypertension

The risk of death from all causes, but especially cardiovascular disease, increases as blood pressure increases, even within accepted normal values of blood pressure. Over a period of years high blood pressure causes pathological changes in blood vessels in the heart, kidney, eyes and brain.

In the US, the prevalence of *high* blood pressure increases with age. About 8% of 18 year olds are hypertensive; 59% of those 75 or older are hypertensive. An increase in blood pressure with age does not happen in all cultures suggesting that high blood pressure is not an inevitable consequence of aging. According to the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure, “if the U.S. population retained the average blood pressure levels of young adults, there would be less cardiovascular disease.”

The proportion of hypertensive adults in Maryland who are aware they have high blood pressure has increased from 53% to 89%. Some studies show the proportion of those receiving treatment has increased from 35 to 79%. The proportion of adults with controlled blood pressure has increased from 16 to 64%.

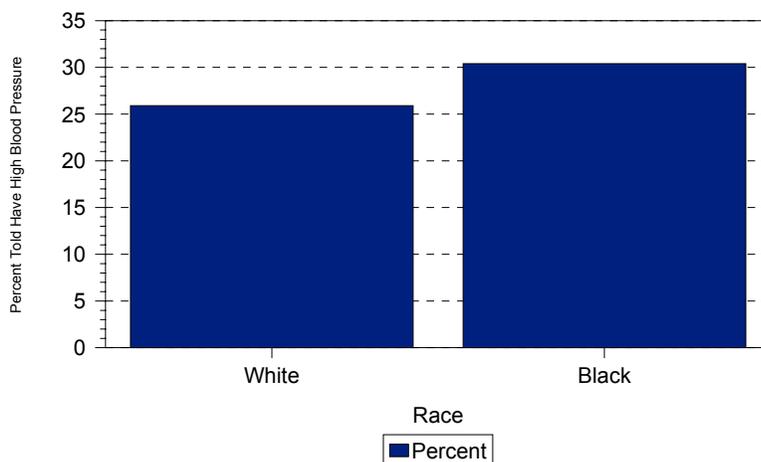
Modifiable risk factors for hypertension include obesity, high alcohol intake, diet high in sodium and low in potassium and inactivity.

According to data from the Maryland Behavioral Risk Factor Surveillance System (BRFSS, 2001), hypertension prevalence was approximately 10% in 18-24 year olds and about 60% in adults 75 and older. Blacks are more likely to be hypertensive than whites; males and females are equally likely to have hypertension. About 35% of those who are

overweight or obese are hypertensive compared to slightly more than 15% of persons with BMI in the normal BMI range.

Hypertension by Race

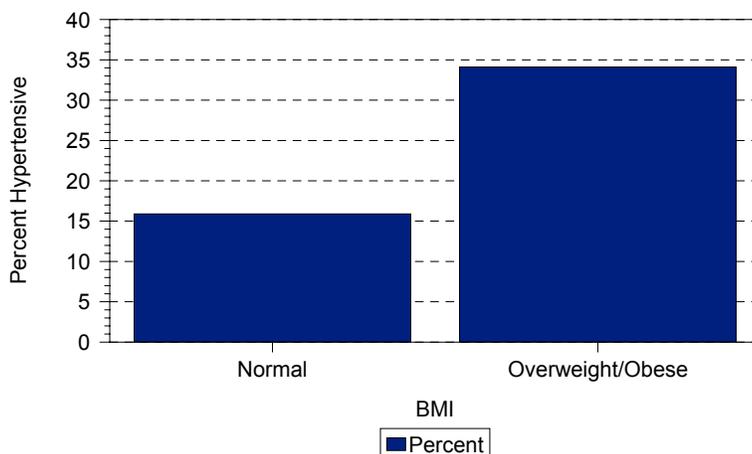
Maryland 2001



Source: Maryland BRFSS Files

Hypertension by Body Mass Index

Maryland 2001



Source: Maryland BRFSS
Respondents 18 or older ever told by health professional that they have high blood pressure.
BMI based on respondents' report of their height and weight. These results used to calculate BMI. BMI 25 or more is obese/overweight.

Overweight and Obesity

Overweight and obesity substantially increase the risk of morbidity from hypertension, dyslipidemia, type 2 diabetes, coronary artery disease, and stroke as well as many other non-cardiovascular-related conditions, such as gallbladder disease, osteoarthritis, sleep apnea and certain cancers.

Both overweight and obesity are independent risk factors for heart disease. For example, in one study 40% of heart disease in women was associated with obesity, and gaining 20 pounds after the age of 18 doubled the risk of heart disease.

Overweight:
Body mass index (BMI) of
25 to 29.9 kg/m²
Obesity:
BMI equal to or greater than 30.

Maryland had one of the largest percentage increases in obesity of all the states from 1991 to 1998. Almost 20% of Maryland adults are obese and more than 37% are overweight. In the period 1990 to 2000, overweight increased from 31% to 36% while obesity increased from 12% to 20% of the population. The prevalence of overweight and obesity peaks in 55-74 year olds and is more likely to occur among blacks than whites, and in men than women and in low income and less educated groups of people. The parts of the state with more than 20% obese are the three western counties, parts of the Eastern shore, Baltimore City and Prince George's County.

Weight reduction of as little as ten pounds reduces blood pressure in a large proportion of overweight persons with hypertension.

Health Risks Associated with Obesity

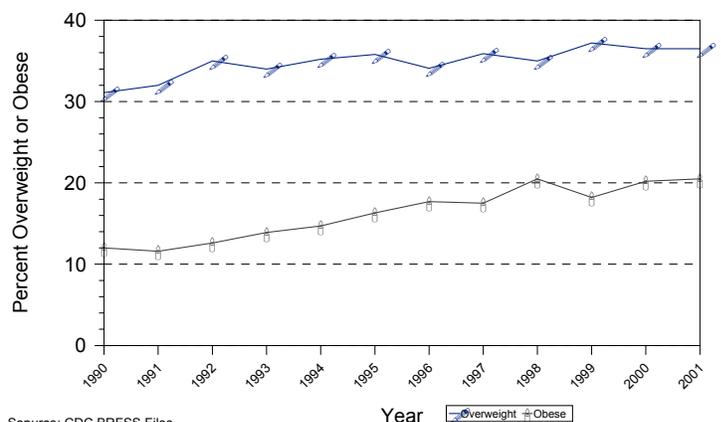
Obesity is Associated with an Increased Risk of:

- Premature death
- Type 2 diabetes
- Heart disease
- Stroke
- Hypertension
- Gallbladder disease
- Osteoarthritis
- Sleep apnea
- Asthma
- Breathing problems
- Cancer
- High blood cholesterol
- Complications of pregnancy
- Menstrual irregularities
- Hirsutism
- Stress incontinence
- Increased surgical risk
- Psychological disorders and difficulties

Adapted from: *Surgeon Generals Call to Action to Prevent & Decrease Overweight & Obesity*, 2001

Overweight and Obesity

Maryland 1990-2001



Source: CDC BRFSS Files
All respondents 18 and older gave height and weight. This information was used to calculate BMI. BMI 25 to 29.9 is defined as overweight and 30 or greater is defined as obese.

Physical Inactivity

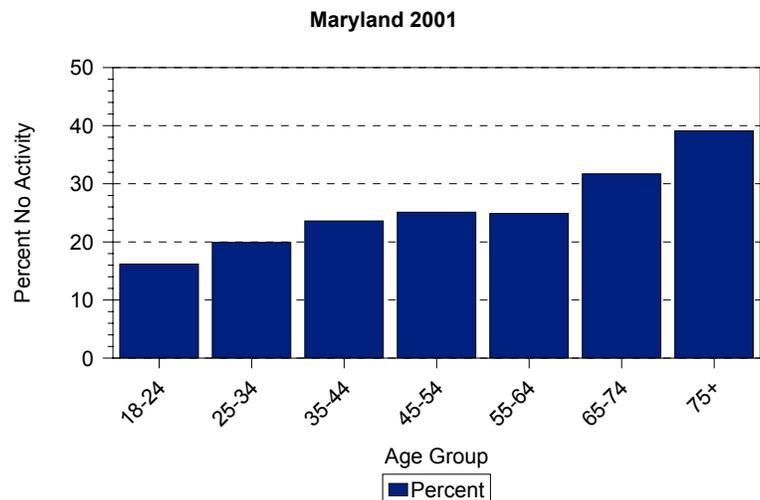
Regular physical activity results in a decrease in resting heart rate, a decrease in blood pressure, and an increase in maximal stroke volume and cardiac output, both of which increase the efficiency of the heart.

Physical inactivity is a major risk factor for coronary heart disease mortality with a relative risk of 1.9, similar to that of smoking, hypertension, and elevated cholesterol. This means that the physically inactive population has almost twice the risk of disease and death as the active population.

In Maryland in 1990, about 30% of adults reported no leisure time physical activity. This percentage had decreased by 2001 to slightly less than 25%.

Physical inactivity in Maryland adults is lowest in the age group 18-24 years (16% in 2001) and much higher at age 75 and older (39% in 2001). Blacks are more likely to have no leisure time physical activity than whites; women are less active than men.

No Leisure Time Physical Activity by Age Group



Authorities estimate that about 35% of coronary heart disease is due to physical inactivity. About 4.3 billion dollars per year could be saved if all sedentary adults in the U.S. participated in a walking program, according to a cost-benefit analysis.

Blood Cholesterol

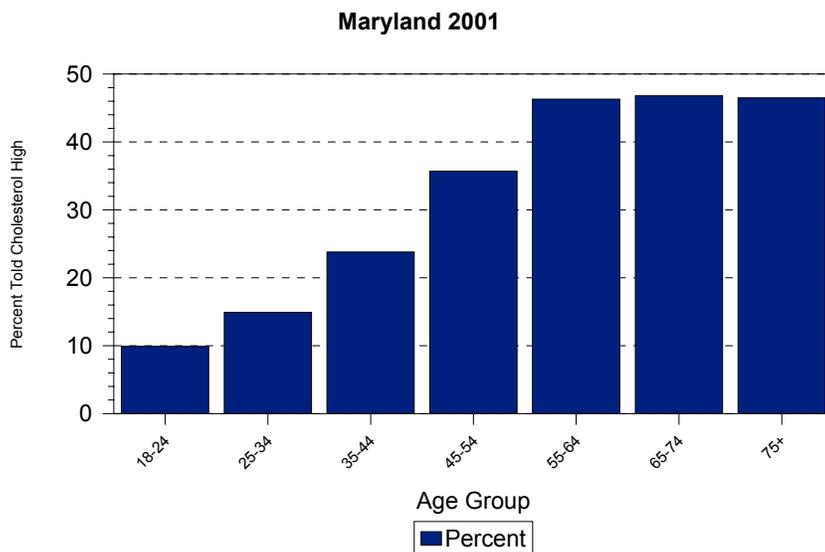
About 30% of coronary heart disease and 20% of strokes in the US can be attributed to elevated blood cholesterol. There is no obvious threshold at which cholesterol becomes a risk since the relationship between cholesterol and risk of coronary heart disease is graded and continuous.

Data from the National Health and Nutrition Examination Survey show that mean cholesterol levels of adults in the US have been declining. Between 1960-1962 and 1988-1991, age adjusted mean cholesterol decreased 12 to 17 mg/dl. Declines among black men and women and white men with less than 9 years of education were significantly less than those among other groups.

Between 1997 and 2001, the percentage of Maryland adults who had been told by a health professional that their blood cholesterol was high increased slightly from 28% to 31%. About 10% of adults age 18-24 have been told they have elevated cholesterol (2001) while 50% of adults 75 or older have been told they have high blood cholesterol. Whites are more likely than blacks and men are more likely than women to have a high blood cholesterol level.

In 1997, 23% of Behavioral Risk Factor Surveillance (BRFSS) respondents stated they had never had their cholesterol checked. This decreased to 17% in 2001. Men were less likely to have had their cholesterol checked than women. Whites were slightly less likely to have had their cholesterol checked than blacks.

Ever Told Cholesterol High by Age Group



Source: Maryland BRFSS 2001
Respondents 18 or older ever told by a health professional that blood cholesterol is high.

The National Cholesterol Education Program, Adult Treatment Panel recommends that all adults have their blood cholesterol measured at least once every five years. The most important intervention for high blood cholesterol is reducing dietary saturated fat intake. Increasing physical activity and losing weight also helps lower LDL-cholesterol.

Diabetes

Having diabetes increases a person's chance of dying from heart disease by as much as 400% and doubles the chance of dying from stroke, compared to people without diabetes.

About 80 % of people with diabetes will die from some form of cardiovascular disease.

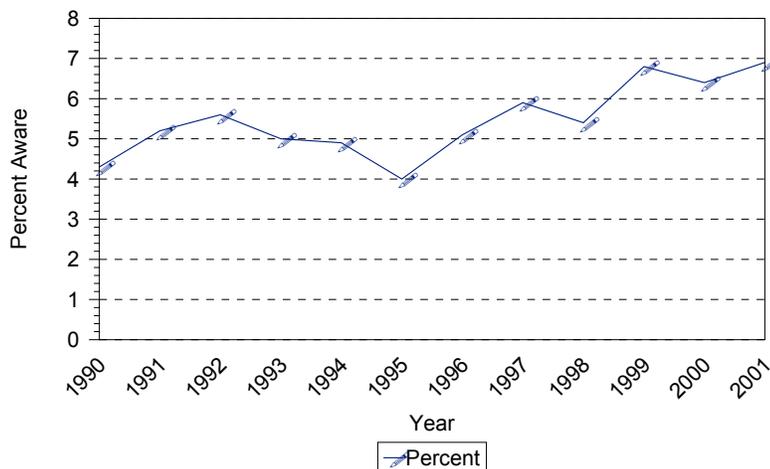
An estimated 382,000 people in Maryland have diabetes. About two thirds of these people have been diagnosed. The rest are unaware of their disease. An additional 1,326,032 Marylanders are at risk of developing diabetes due to age, obesity, and sedentary lifestyle.

In Maryland diabetes prevalence was slightly more than 4 % in 1990 and increased to almost 7% by 2001. In the latter year, Maryland ranked 4th highest among the states in diabetes prevalence. Diabetes prevalence increases with age reaching about 18% among adults 75 years or older (2001). Blacks are more likely to have been told they have diabetes than whites, men are more likely to have been told they have diabetes than women.

Overweight Marylanders at high risk for type 2 diabetes can delay and possibly prevent the disease by being physically active and modifying their diet to lose weight and reduce fat intake, according to the results of the Diabetes Prevention Program (DPP), an NIH clinical trial.

Diabetes Awareness

Maryland 1990-2001



Source: CDC BRFSS Files
All respondents 18 and older who report they have been diagnosed with diabetes.

Participants in the DPP were adults already at risk for developing type 2 diabetes due to higher than normal blood sugar levels. When they exercised at moderate intensity, usually by walking an average of 30 minutes a day five days a week, reduced their intake of fat and calories, and lost 5-7 percent of their body weight, they reduced their risk of developing diabetes by 58% compared to a standard care group. Lifestyle intervention worked equally well in men and women and in all the ethnic groups. It was most effective in people age 60 and older who lowered their risk of developing diabetes by 71 percent.

Tobacco

About 400,000 deaths per year in the US are attributable to tobacco; about 40% of these deaths are from cardiovascular disease. Approximately 20% of all coronary heart disease and 12% of all strokes can be attributed to smoking.

According to Maryland Behavioral Risk Factor Surveillance System data, the proportion of adults who smoke did not change substantially during the period 1990-2001, ranging from 20 to 22%. The greatest proportion of smokers are found in the 35-44 age group; the smallest proportion in the group 75 and older. Blacks are more likely to smoke than whites and men are more likely to smoke than women.

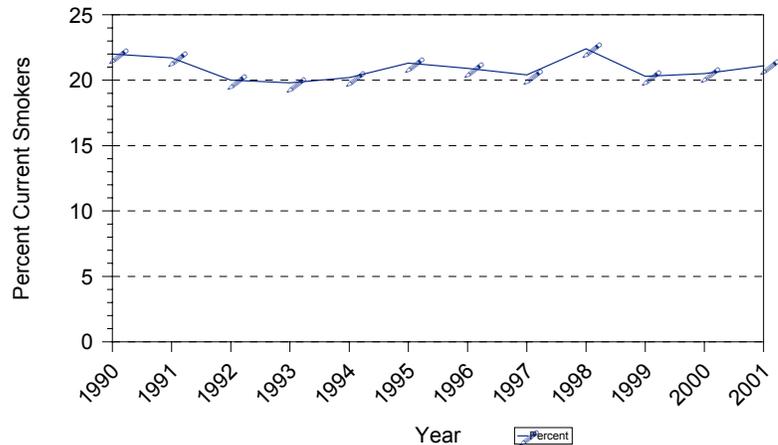
There are also an estimated 53,000 deaths each year in the U.S. due to exposure to secondhand smoke, 51,000 of which are a result of heart disease. Adults exposed to environmental tobacco smoke at home have approximately a 30 percent increased risk of dying from heart disease.

The Environmental Protection Agency classifies secondhand smoke as a Group A carcinogen, a category that also includes asbestos and radon.

When an individual stops smoking the risk of heart disease and stroke declines rapidly.

Current Smokers

Maryland 1990-2001



Source: CDC BRFSS Files
All respondents 18 and older who have ever smoked 100 cigarettes in their lifetime and reported smoking every day or some days.

Maryland's Cardiovascular Health Program

Program Philosophy

Preventing cardiovascular disease (CVD) requires intervening to lower or eliminate risk factors, either in individuals or the entire population. The two broad public health approaches to reducing risk of disease are summarized in the article *Sick Individuals and Sick Populations*. The *high-risk* approach focuses on people likely to benefit most, those who are identified with risk factors for CVD. In this approach, the intervention is applied to fewer people and may have less of an impact on the population as a whole. The *population* approach seeks to reduce risk in the entire population, essentially shifting the whole population to a lower risk category. According to author Geoffrey Rose, the *population* approach has the potential to improve the health of the population to a greater extent than the high-risk approach.

There is strong evidence that we can reduce the burden of cardiovascular disease by altering the environment and creating policies that will affect most of the Maryland population. We must make physical activity and healthy eating more convenient and desirable - for example, creating safe walking and biking paths and favorable zoning rules for sidewalk construction, and developing work-site and school policies on vending machine content and placement.

Prevention efforts also can be categorized as primary, secondary or tertiary, depending on the point of intervention in the disease process. *Primary prevention* is intervention before disease or risk factors appear that lowers the incidence of new disease. Increasing physical activity and improving diets in the general population, for example, can prevent the development of risk factors in individuals that will eventually cause disease. *Secondary prevention* identifies people with disease at a treatable stage. Intervention then reduces the likelihood of developing more serious consequences of the disease. For example, identifying and treating high blood pressure reduces the incidence of heart attack and stroke. *Tertiary prevention* is intervention with people who have already developed disease, for example with people who have had a heart attack, in order to prevent additional consequences such as another heart attack.

Population Strategy vs High-Risk Strategy for Prevention

POPULATION STRATEGY Health Promotion, 1° Prevention	HIGH-RISK STRATEGY Medical model – risk factor reduction, 2° and 3° prevention,
<u>Advantages:</u>	<u>Advantages:</u>
<ul style="list-style-type: none"> ·Large potential for permanent change ·Large impact on population morbidity & mortality ·Behaviorally appropriate 	<ul style="list-style-type: none"> ·Intervention appropriate to individual ·Individual motivated ·Physician motivated ·Cost-effective use of resources ·Benefit-risk ratio favorable for individual ·Can be evaluated
<u>Disadvantages:</u>	<u>Disadvantages:</u>
<ul style="list-style-type: none"> ·Small benefits to individual ·Poor motivation of individual ·Poor motivation of physician ·Benefit-risk ratio for individual equivocal ·Behaviorally inappropriate ·Difficult and expensive to evaluate 	<ul style="list-style-type: none"> ·Side effects and cost of screening ·Palliative and temporary ·Limited potential for large-scale change in morbidity & mortality
<u>Uses:</u>	<u>Uses:</u>
<ul style="list-style-type: none"> ·In diseases widely distributed throughout the population ·When lifestyle change is the principle intervention 	<ul style="list-style-type: none"> · In diseases that cluster in distinguishable subpopulations (e.g. tuberculosis) ·When medication is the principle intervention

Adapted from *Sick Individuals and Sick Populations*, Geoffrey Rose (Int J Epid 2001;30:427-432)

Maryland's Cardiovascular Health Initiatives

Maryland's population-based approach to the problem of cardiovascular disease is designed to shift the risk status of the whole population downward. This approach has the greatest potential for reducing disease incidence. A high-risk, secondary prevention approach to hypertension intervention is directed to the African American population, a group with an especially high risk for heart disease and stroke. Cardiovascular initiatives in Maryland fall into three categories, grant activities in local jurisdictions; health communications, education and training; and community prevention efforts.

Grants to Local Jurisdictions

The Office of Chronic Disease Prevention, through the Diabetes Control Program and the Division of Cardiovascular Health & Nutrition, administers primary prevention programs in 22 out of 24 jurisdictions in Maryland that are designed to increase physical activity, improve eating habits and manage high blood pressure and diabetes. Technical assistance to grantees, as well as other organizations in Maryland, assures that current guidelines for cardiovascular disease prevention are followed. Since 1994, a yearly average of 405,000 people has been reached with information, 25,000 health assessments have been done and 1300 health care providers have been provided with training. The following table lists risk reduction activities taking place in each funded jurisdiction:

Prevention Programs in Local Jurisdictions

Grantee	Risk Area	Type of Intervention
Allegany County	Nutrition	Elementary classroom instruction, parent outreach, community presentations
	Physical Activity	Elementary classroom instruction, parent outreach, community presentations, media outreach
Anne Arundel County	Hypertension	Screening outreach via network of African-American churches
	Nutrition	Small group instruction via church network, coupon distribution
	Physical Activity	Small group instruction via church network
Baltimore City (MOA w/UMAB)	Hypertension	Small group instruction, information dissemination via network of African American churches and community sites, professional education, media, coalition participation, participation in community events. Small group instruction of high risk clients, information dissemination via media
	Nutrition, Physical Activity	Development and implementation of community event, small group instruction of high risk clients, media
Baltimore County	Nutrition, Physical Activity	Child Care Center instruction, parent outreach and staff education
		Child Care Center instruction, parent outreach and staff education
Caroline County	Nutrition	Small group instruction of food service personnel, smoking cessation clients, practitioners, outreach workers, coalition members
	Physical Activity	Coalition development and event promotion within African American community, church network
Carroll County	Nutrition	Elementary school instruction, small group instruction of food service
	Physical Activity	Coalition development, elementary school instruction
Cecil County	Hypertension	Screening outreach via church network, coalition participation
	Nutrition	Worksite small group instruction, African-American church small group instruction
	Physical Activity	African-American church small group instruction
Charles County	Nutrition	Elementary school instruction, parent outreach, small group instruction of teachers and food service personnel, community presentations and health fairs
	Physical Activity	Small group instruction of teachers

Dorchester County	Nutrition Physical Activity	Elementary school and after school instruction, information dissemination to teachers, coalition participation, African-American church small group instruction, small group instruction of low income parents Event promotion and implementation, after school based instruction, coalition participation, African-American church based small group instruction, coalition participation
Frederick County	Nutrition Physical Activity	Elementary-based and low income (Head Start) small group instruction, parent outreach, community information dissemination and health events, coalition participation, small group instruction at senior centers Worksite small group instruction, event participation
Garrett County	Nutrition Physical Activity	Elementary school and high school small group instruction Event promotion and implementation
Howard County	Nutrition	Elementary school based small group instruction
Kent County	Nutrition Physical Activity	Elementary school small group instruction, teacher and food personnel small group instruction, parent outreach, small group instruction of smoking cessation clients, coalition participation, community event participation Elementary school small group instruction, small group instruction of smoking cessation clients, coalition participation
Montgomery County	Nutrition Physical Activity	Elementary school small group instruction, parent outreach, coalition development and participation Elementary school small group instruction, parent outreach, coalition development and participation
Prince George's County	Hypertension Nutrition, Physical Activity	Coalition development, screenings via network of African American churches Small group instruction via network of African American churches
Queen Anne County	Nutrition, Physical Activity	Middle school after school small group instruction
Somerset County	Diabetes Nutrition Physical Activity	Client counseling of diabetics, dissemination of information for diabetes control Elementary school and middle school small group instruction, coalition development, school nurse small group instruction (obesity prevention) Middle school based small group instruction, coalition development, dissemination of information via media, worksite based small group instruction and event promotion
St Mary's County	Hypertension Nutrition	Worksite small group instruction and screenings Middle school small group instruction, participation in community events
Talbot County	Nutrition Physical Activity	Elementary school small group instruction, parent outreach, community awareness campaign, participation in community events Small group instruction and event at African American church, participation in community events
Washington County	Diabetes Nutrition Physical Activity	Client counseling of diabetics Day care and worksite small group instruction Worksite small group instruction
Wicomico County	Hypertension Nutrition Physical Activity	Small group instruction of nurses for network of African American churches Middle school based promotional event, community promotional event, worksite promotional event, coalition participation. Surveys of preschoolers/parents. Middle school based promotional event, community promotional event, worksite promotional event, coalition participation, small group instruction of African American church volunteers. Surveys of preschoolers/parents.
Worcester County	Diabetes Hypertension Nutrition Physical Activity	Small group instruction of diabetics Small group instruction for practitioners and outreach workers, screening events Client counseling of high risk patients, small group instruction at Senior Centers, participation in community events Community based and targeted (not specified), implement community event, after school based small group activities, coalition participation, small group instruction at Senior Centers, participation in community events

Health Communications, Education and Training

• *Information/ Publications*

The Office of Chronic Disease Prevention (OCD) through the Division of Cardiovascular Health & Nutrition (CVH & N) disseminates information about heart disease and stroke through reports, regular press releases, a CVD Newsletter, regularly updated web sites, written local health officer updates on CVD and obesity, and a weekly radio show, “The Healthy Life Show,” targeted to an African American audience. A report, *Maryland Cardiovascular Disease Surveillance - Statistics for Cardiovascular Disease*, was published in December 2001 with updated statistics on mortality and morbidity of heart disease and stroke.

The CVH & N Materials Distribution Center, established by CVH & N in cooperation with State Use Industries, has distributed 168,000 pieces of literature in nineteen months of operation on the topics of physical activity, healthy eating, stroke, hypertension, diabetes, 5 A Day, and osteoporosis.

• *5 A Day Education*

Maryland 5 A Day was established by a 1993 licensing agreement with the National Cancer Institute. Although originally a cancer prevention effort, the 5 A Day campaign to promote fruit and vegetable intake now has a formal partnership with the Center’s for Disease Control and Prevention’s nutrition, physical activity, cardiovascular and diabetes programs. Funding from the OCD through CVH & N provides 5 A Day educational programs in school classrooms and day care centers with an emphasis on involving parents and school food service workers. Local health departments also promote fruit and vegetable consumption in church programs, PTSA meetings, employee wellness programs, parks and recreation programs, at health fairs, supermarket tours and in newsletters and other communications media.

• *Training*

In FY 2002, training was provided for the School Health Institute, the Coordinated School Health Programs Summer Training, the Area Agencies on Aging, the University of Maryland Center for Smart Growth, the Eastern Shore Area Health Education Center, statewide WIC staff, the State Coordinated School Health Council meeting, the Childhood Overweight Work Group, and Team Nutrition (MSDE).

Community Prevention Efforts

• *Partnerships*

The Division of Cardiovascular Health & Nutrition is currently working with partners such as the Governor’s Office of Smart Growth, the Center for Maternal & Child Health, University of Maryland Center for Smart Growth and Family Medicine Program, the Baltimore Metropolitan Council, the Department of Natural Resources, Maryland Department of Transportation, the Task Force on Osteoporosis Prevention and Education, the Governor’s Council on Physical Fitness, State Highway Administration, and the Governor’s Council on Heart Disease and Stroke, to seek funding, establish coalitions and facilitate policy and environmental changes.

The DHMH Center for Maternal & Child Health and the Office of Chronic Disease Prevention co-sponsored a Childhood Overweight Work Group meeting in May 2002, resulting in a report, *Preventing Childhood Overweight in Maryland – Recommendations and Report of a Work Group Session*, published and available on the web at www.fha.state.md.us/ocd.

DHMH works cooperatively with the Maryland Department of Agriculture and the Maryland Department of Aging in the distribution of approximately \$190,000 worth of coupons a year in the Farmers Market Senior Nutrition Coupon Program, designed to increase senior's purchases of fruits & vegetables and in the WIC Farmer's Market coupon distribution.

A social marketing project designed to increase physical activity of African American girls in Baltimore City is being designed cooperatively by the UMCP Food Stamp Nutrition Education Program and the CVH & N. The Division has also assisted in the development of a pilot stairwell prompt program with the Department of General Services designed to increase the use of the stairs in the state office building at 301 W. Preston Street.

SB 435 established the 23-member Maryland Heart Disease and Stroke Advisory Council that works closely with DHMH on prevention and treatment issues for cardiovascular disease.

- *Coalitions*

The *Smart Step Forward* coalition, initiated and named by the Division of CVH & N, is using grant funds of \$120,000 from the Robert Wood Johnson Foundation to revise local codes and make other changes aimed at encouraging walking in four Maryland communities. The Maryland Healthy Eating & Active Living coalition is a broad-based group of agencies and individuals working to improve eating and physical activity habits of people throughout Maryland.

- *Capacity Building Activities*

Grant fund applications have been submitted to the following groups: the CDC Cardiovascular Disease Program, the CDC Coordinated School Health Program (cooperatively with MSDE), the University of Maryland Food Stamp Nutrition Education Program, the Center for Health Promotion (as part of arthritis funding to promote physical activity), and the U.S. Department of Agriculture (cooperatively with MSDE) for Team Nutrition funds and (cooperatively with Maryland Department of Aging & Maryland Department of Agriculture) for Senior Nutrition Farmer's Market funds.

- *Tobacco Programs*

The Maryland General Assembly passed legislation in 2000 creating the Cigarette Restitution Fund Program (CRFP), giving responsibility for its implementation to the Department of Health & Mental Hygiene. The CRFP created the Tobacco Use Prevention and Cessation Program (TUPC) and the Cancer Prevention, Education, Screening and Treatment Program (CPEST) which supply funds to local jurisdictions for local tobacco control coalitions and local cancer control coalitions. Baseline data on tobacco use prevalence has been collected for 2001 in each jurisdiction in the state and benchmarks for tobacco control are being developed. In addition, DHMH awarded a total of \$1 million of CRFP money to four community-based organizations in 2001 that will use it to organize minority participation in local tobacco and cancer coalitions.

Goals, Strategies and Action Steps for Promoting Cardiovascular Health in Maryland

Goals for Promoting Cardiovascular Health:

Goals for cardiovascular disease prevention provide guidance for building program. They stimulate action to improve the eating and activity environment for Maryland residents. Maryland's cardiovascular disease prevention goals, strategies and action steps will contribute to the achievement of Healthy People 2010 objectives for the nation and objectives of the Maryland Health Improvement Plan related to cardiovascular disease.

There are three goals for promoting cardiovascular health in Maryland:

Goal 1

Awareness and Education

Promote awareness of and educate the public, health professionals, government leaders and others about risk factors for cardiovascular disease as well as treatment and prevention guidelines (including the Sixth Report of the Joint National Commission on Prevention, Detection, Evaluation and Treatment of High Blood Pressure; National Cholesterol Education Program - Adult Treatment Panel III; the National Heart, Lung and Blood Institute Obesity Guidelines).

Goal 2

Health Promotion and Environmental Change

Promote a healthy eating and activity environment in Maryland and reduce risk factors for cardiovascular disease by encouraging development of policies and changes in the environment that increase support for physical activity and healthy eating, including increased fruit and vegetable intake.

Goal 3

Surveillance

Monitor current data, trends over time and evaluation data to maintain surveillance of cardiovascular disease rates, treatment and prevention.

Strategies for Promoting Cardiovascular Health in Maryland

The list below outlines the *overall strategies* for Maryland's cardiovascular health initiatives, categorized by goal area. *Specific action steps* for FY 2004, based on these strategies, are found on page

Education and awareness:

- Hold periodic Cardiovascular Health summits
- Disseminate CVD information regularly to local health departments, partners, Advisory Council, health officers and others
- Maintain provider proficiency in blood pressure measurement
- Implement a comprehensive communications strategy, including print media, web sites, radio, transit advertising
- Create online education on risk reduction, use of treatment guidelines, best practices
- Establish pilot secondary and tertiary prevention initiatives
- Develop internship opportunities, especially in cooperation with historically black colleges, in an effort to increase the capacity of health professionals in Maryland to promote cardiovascular health

Health Promotion and Environmental Change:

- Develop an allocation formula for distributing grant funds to local health departments.
- Incorporate best practices for increasing physical activity and promoting healthy diet into a standardized menu of intervention options and outcome measures for local jurisdiction grants funded by the CVH & N Program.
- Inventory nutrition and physical activity policies and interventions of state agencies and local communities.
- Work with state health programs and other health agencies to incorporate primary prevention messages within educational materials, programming and services.
- Establish policy and environmental change indicators for Maryland.
- Build capacity in communities for organizing chronic disease prevention efforts, including coalition and resource development.

- Build infrastructure for program support, including staffing, communications hardware.
- Develop grant-writing capacity within CVH & N
- Build on the foundation of Maryland 5 A Day through the national 5 A Day program's new partnership with the CDC Division of Nutrition & Physical Activity
- Seek grant funding for environment and policy interventions to prevent or reduce obesity, cardiovascular disease, unhealthy diet and inactivity.
- Work cooperatively with state agencies to garner funding, including assisting them with their grant applications for cardiovascular health, physical activity, healthy eating and/or obesity funds
- Develop a mini-grant program to encourage small interventions to promote physical activity and healthy eating in local communities.

Surveillance:

- Standardize local, CVD Program-funded, interventions to incorporate common evaluation instruments and outcome data
- Create an online reporting system for local health departments to use for program proposals and outcome measures
- Develop and disseminate jurisdiction-specific information about CVD mortality and morbidity to local health departments for their use in planning, implementation and evaluation.
- Establish a comprehensive surveillance system for cardiovascular disease, including but not limited to the Youth Risk Behavior Surveillance System, weight monitoring of Maryland children, and physical activity
- Seek grant funding for epidemiological services to establish and maintain a surveillance system and for evaluation services to compile and analyze outcome data.

Action Steps for Promoting Cardiovascular Health in Maryland FY 2004

Education and awareness:

- Hold a statewide Cardiovascular Health summit, with information on surveillance, risk factor reduction and best practices.
- Disseminate information about CVD at least quarterly to local health departments, partners, Advisory Council, health officers and others
- Implement communications strategies, including print media, web sites, and radio.

Health Promotion and Environmental Change:

- Establish a process for development of an allocation formula to use for distributing grant funds to local health departments.
- Incorporate best practices for increasing physical activity and promoting healthy diet into a standardized menu of intervention options and outcome measures for local jurisdiction grants funded by the CVH & N Program.
- Inventory nutrition and physical activity policies and interventions of state agencies and local communities.
- Build capacity in communities for organizing chronic disease prevention efforts, including coalition and resource development.
- Build on the foundation of Maryland 5 A Day through the national 5 A Day program's new partnership with the CDC Division of Nutrition & Physical Activity
- Seek grant funding for program capacity building and for interventions to prevent or reduce obesity, cardiovascular disease, unhealthy diet and inactivity.

Surveillance:

- Develop an online system for local health departments to use for their proposals and outcome reporting on the use of CVH & N Program funds
- Review and expand surveillance for cardiovascular disease, by exploring inception of the Youth Risk Behavior Surveillance System, weight monitoring of Maryland children, and physical activity monitoring

Appendices

- Appendix A Cardiovascular Disease Deaths by Jurisdiction, 1999
- Appendix B Summary Chart of Goals, Strategies and Actions Steps

Appendix A

Cardiovascular Disease Deaths by Jurisdiction, 1999

Region & Jurisdiction	No. CVD Deaths ¹ (3-year average)	Age-adjusted death rate 1997-99	Is rate in the top five?	No. CVD deaths under age 65	Percent of total deaths	No. CVD deaths age 65+	Percent of total deaths
All Maryland	46,676	343.6					
Northwest	4,782	376.1					
Allegany	1,333	430.2	YES	156	12%	1177	88%
Garrett	425	418.8	YES	59	14%	366	86%
Frederick	1,470	346.4		222	15%	1248	85%
Washington	1,554	360.7		214	14%	1340	86%
Baltimore Metro	24,716	362.8					
Anne Arundel	3,607	344.5		614	17%	2993	83%
Baltimore City	9,026	466.4	YES	2156	24%	6870	76%
Baltimore County	8,108	325.1		1118	14%	6990	86%
Carroll	1,121	289.2		149	13%	972	87%
Harford	1,636	347.9		268	16%	1368	84%
Howard	1,218	309.6		200	16%	1018	84%
National Capital	10,951	296.6					
Montgomery	5,693	249.7		710	12%	4983	88%
Prince Georges	5,258	365.9		1434	27%	3824	73%
Southern	1,736	324.3					
Calvert	473	317		90	19%	383	81%
Charles	676	332.5		163	24%	513	76%
St. Mary's	587	322.8		127	22%	460	78%
Eastern Shore	4,491	355.4					
Caroline	361	381	YES	67	19%	294	81%
Cecil	715	359.6		132	18%	583	82%
Dorchester	435	368.3		74	17%	361	83%
Kent	293	366.9		31	11%	262	89%
Queen Anne's	348	304.1		61	18%	287	82%
Somerset	323	393.1	YES	54	17%	269	83%
Talbot	465	296.4		38	8%	427	92%
Wicomico	907	379.2		148	16%	759	84%
Worcester	644	361.7		100	16%	544	84%

1. A three-year average (1997-1999) was used for calculations since some jurisdictions have too few deaths to enable an accurate calculation for a shorter period.

Appendix B:
Summary Chart of Goals, Strategies and Actions Steps

The following chart shows how the Goals/Strategies help us meet the public health challenges outlined on pages 1 and 2 of this report.

Goal 1: Awareness and Education
Promote awareness of and educate the public, health professionals, government leaders and others about risk factors for cardiovascular disease as well as treatment and prevention guidelines (including the Sixth Report of the Joint National Commission on Prevention, Detection, Evaluation and Treatment of High Blood Pressure; National Cholesterol Education Program - Adult Treatment Panel III; the National Heart, Lung and Blood Institute Obesity Guidelines).

<u>Strategies:</u>	<u>Mortality</u>	<u>Disparities</u>	<u>Costs</u>	<u>Trends</u>	<u>Risk Factors</u>	<u>Environment & Policy</u>
Hold periodic Cardiovascular Health summits	X			X	X	X
Disseminate CVD information about CVD regularly to local health departments, partners, Advisory Council, health officers and others	X				X	X
Expand Maintain provider proficiency in blood pressure measurement					X	X
Implement a comprehensive communications strategy, including print media, web sites, radio, transit advertising.		X		X	X	X
Create online education on risk reduction, use of treatment guidelines, best practices.	X			X	X	
Establish pilot secondary and tertiary prevention initiatives	X	X	X			
Develop internship opportunities, especially in cooperation with historically black colleges, in an effort to increase the capacity of health professionals in Maryland to promote cardiovascular health.		X		X	X	

Goal 2: Health Promotion and Environmental Change

Promote a healthy eating and activity environment in Maryland and reduce risk factors for cardiovascular disease by encouraging development of policies and changes in the environment that increase support for physical activity and healthy eating, including increased fruit and vegetable intake

<u>Strategies:</u>	<u>Mortality</u>	<u>Disparities</u>	<u>Costs</u>	<u>Trends</u>	<u>Risk Factors</u>	<u>Environment & Policy</u>
Develop an allocation formula for distributing grant funds to local jurisdictions					X	X
Incorporate best practices for increasing physical activity and promoting healthy diet into a standardized menu of intervention options and outcome measures for local jurisdiction grants funded by the CVH & N Program.					X	X
Inventory nutrition and physical activity policies and interventions of state agencies and local communities.				X		X
Work with state health programs and other health agencies to incorporate primary prevention messages within educational materials, programming and services.					X	X
Establish policy and environmental change indicators for Maryland.						X
Build capacity in communities for organizing chronic disease prevention efforts, including coalition and resource development.			X		X	X
Build infrastructure for program support	X	X		X		
Develop grant-writing capacity within the Division of Cardiovascular Health & Nutrition.	X	X	X	X	X	X
Build on the foundation of Maryland 5 A Day through the national 5 A Day program's new partnership with the CDC Division of Nutrition & Physical Activity	X	X		X	X	X
Seek grant funding for environment and policy interventions to prevent or reduce obesity, cardiovascular disease, unhealthy diet and inactivity.		X			X	X
Work cooperatively with other state agencies to garner funding, including assisting them with their grant application for cardiovascular health, physical activity, healthy eating and/or obesity programs.		X			X	X
Develop a mini-grant program to encourage small interventions to promote physical activity and healthy eating in local communities.		X			X	X

Goal 3: Surveillance

Monitor current data, trends over time and evaluation data to maintain surveillance of cardiovascular disease rates, treatment and prevention.

<u>Strategies:</u>	<u>Mortality</u>	<u>Disparities</u>	<u>Costs</u>	<u>Trends</u>	<u>Risk Factors</u>	<u>Environment & Policy</u>
Standardize local, CVD Program-funded, interventions to incorporate common evaluation instruments and outcome data				X	X	X
Create an online system for developing CVD Program-funded proposals and reporting outcomes	X				X	
Develop and disseminate jurisdiction-specific information about CVD mortality and morbidity to local health departments for their use in planning, implementation and evaluation						
Establish a comprehensive surveillance system for cardiovascular disease, including but not limited to the Youth Risk Behavior Surveillance System, weight monitoring of Maryland children, and physical activity	X			X	X	
Seek grant funding for epidemiological services to establish and maintain a surveillance system and for evaluation services to compile and analyze outcome data.	X			X	X	

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