

Centers for Disease Control and Prevention  
National Heart Disease & Stroke Prevention Program

# Strategies for States to Address the “ABCS” of Heart Disease and Stroke Prevention

National Center for Chronic Disease Prevention and Health Promotion  
Division for Heart Disease and Stroke Prevention



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## Introduction

Since 2008, the National Heart Disease and Stroke Prevention (NHDSP) Program has provided funding to 42 State Heart Disease and Stroke Prevention Programs. The majority of resources and effort of these programs should be used to address the “ABCS” of heart disease and stroke prevention, with the main focus on preventing and controlling high blood pressure and reducing sodium intake. Efforts to address the “ABCS” include:

*Aspirin:* Increase low dose aspirin therapy according to recognized prevention guidelines.

*Blood pressure:* Prevent and control high blood pressure; reduce sodium intake.

*Cholesterol:* Prevent and control high blood cholesterol.

*Smoking:* Increase the number of smokers counseled to quit and referred to State quit lines; increase availability of no or low-cost cessation products.

The NHDSP Program is anchored on the principles of the Socio-ecological Model, using policies, systems, and environmental changes to achieve broad reach and impact on both the general population and priority populations (e.g., groups with increased burden or need based on race, ethnicity, gender, geography, or socio-economic status).

This document outlines priority strategies for States to use to address the “ABCS” of heart disease and stroke prevention. It is important for programs to focus their efforts and limited resources on evidence or practice-based strategies that can impact heart disease and stroke and to implement interventions with significant reach and impact.

The priority areas of work are: aspirin therapy, control of high blood pressure and high blood cholesterol (the healthcare focus is primary care settings), sodium, and smoking cessation. The following are provided for each priority area of work: background and rationale, strategies (by setting where applicable), potential partners, and resources. The strategies are not all inclusive but focus on priority, evidence-based strategies. Where possible the strategies have been linked to the Division for Heart Disease and Stroke Prevention’s (DHDSP’s) Outcome Indicators for Policy and Systems Change: Controlling High Blood Pressure and Outcome Indicators for Policy and Systems Change: Controlling High Blood Cholesterol, as

well as to recommendations from the Institute of Medicine Reports, A Population-Based Policy and Systems Change Approach to Prevent and Control Hypertension and Strategies to Reduce Sodium Intake in the United States. Appendix A includes a table linking the strategies with the corresponding DHDSP indicators where possible.

### Consideration for choosing a strategy

- What policy or systems change do we want to make?
- What evidence or practice-based interventions support this change?
- Who can help us understand the issues? What data are needed?
- Who has the authority to make the policy or systems change? Who can help us reach those with authority? Who can help carry our message forward?
- How can we address the issue at the highest possible level of the Socio-ecological Model?
- Which programs within the State health department can collaborate to carry our message and intervention forward? What existing activities can be enhanced to address our priorities or populations?
- What do our partners need from us to move forward (e.g., health data, training, technical assistance)? How will we know we have accomplished our objective? How will we assess or evaluate our strategy (e.g., policy or systems change), reach (e.g., area served, number of providers or people who make change), and impact (e.g., percent increase in blood pressure control). What evaluation support do we need and who will provide it?

### Resources

Centers for Disease Control and Prevention [internet]. Atlanta, GA: CDC; c2008 [updated 2008 October 15; cited 2010 December 6]. State program evaluation guides; [about 2 screens]. Available from [http://www.cdc.gov/dhdsp/programs/nhdsp\\_program/evaluation\\_guides/index.htm](http://www.cdc.gov/dhdsp/programs/nhdsp_program/evaluation_guides/index.htm)

McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q.* 1988 Winter; 15(4):351-77.

National Institutes of Health, National Cancer Institute. Theory at a glance [Internet]. Bethesda, MD: National Institutes of Health, National Cancer Institute; 2005 [cited 2010 Dec 6]. Publication No.: 05-3896. Available from: <http://www.cancer.gov/theory.pdf>

## Aspirin Therapy

### Background and Rationale

The United States Preventive Services Task Force recommends taking aspirin for the prevention of cardiovascular diseases and as a component of preventive medical services, within specific age, gender, and risk parameters. There are risks for people who take aspirin regularly, so one should not start aspirin therapy without first consulting a physician. Aspirin protocols should support consultation between a physician and patient about appropriate use.

### Strategies

#### Primary Healthcare Systems

- Promote provider adherence to recognized prevention guidelines regarding the use of aspirin therapy.

#### Partners

State Hospital Association, Primary Care Association, Medicare Quality Improvement Organization, State Pharmacy Association, Emergency Medical Services Association, American Heart Association, Chain Drug Store Association.

#### Resources

U.S. Preventive Services Task Force [internet]. Rockville, MD: U.S. Preventive Services Task Force; c2009 [updated 2009 December; cited 2010 December 6]. Aspirin for the prevention of cardiovascular disease [about 1 screen]. Available from: <http://www.uspreventiveservicestaskforce.org/uspstf/uspasmi.htm>

American Heart Association [internet]. Dallas, TX: American Heart Association; c2010 [cited 2010 December 6]. Primary prevention in the adult [about 5 screens]. Available from: <http://www.americanheart.org/presenter.jhtml?identifier=4704>

National Heart, Lung, and Blood Institute [internet]. Bethesda, MD: National Heart, Lung, and Blood Institute; no copyright [cited 2010 December 6]. JNC 7 full report, NHLBI [about 5 screens]. Available from: <http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.htm> (see page 14)

## Control of High Blood Pressure and High Blood Cholesterol

### Background and Rationale

High blood pressure (HBP) and high blood cholesterol (HBC) are leading risk factors for

heart disease and stroke. Lower blood pressure is associated with lower risk of heart disease and stroke even at levels below current cut-offs for hypertension and pre-hypertension. Because policy and systems strategies that impact HBP control can also impact control of HBC, these two areas are combined. Note: As a primary risk factor for HBP, sodium is covered in a separate section of this document.

### Strategies

#### Primary Care Health Systems

- Promote use of electronic health records (EHR) with registry function, decision support, and electronic reminders.
- Promote multi-disciplinary healthcare teams.
- Promote provider adherence to current Joint National Committee (JNC)/Adult Treatment Panel (ATP) guidelines and other evidence-based hypertension and cholesterol guidelines (e.g., quality improvement performance measurement, medication academic detailing).
- Promote systems to support self-management (e.g., telephonic follow-up, linkages to home monitoring, community health workers (CHW), and self-management programs).
- Promote system changes that integrate and sustain use of community health workers and other healthcare extenders within healthcare settings.
- Promote linkage between healthcare systems and community resources.
- Promote specialized blood pressure and cholesterol clinics

#### Partners

Primary Care Association, Medicare Quality Improvement Organization, Foundations, Insurers, Diabetes Prevention and Control Program, American Heart Association, National Business Coalition on Health.

#### Workplaces

Collaborate with other chronic disease programs and business coalitions to promote healthy workplace policies and environments that help prevent and control HBP and HBC.

#### Partners

Nutrition, Physical Activity and Obesity Program, Communities Putting Prevention to Work, Diabetes Prevention and Control Program, Tobacco Control Program, State and Regional Business Coalition

on Health, Chamber of Commerce, Manufacturing Association, Governor's Council on Health

Payers (e.g., Medicaid, Self-Insured Employers, Third Party)

- Promote the reduction or elimination of co-pays or deductibles for HBP and HBC screening and control, including monitoring, medications, counseling, and lifestyle interventions.
- Promote reimbursement for self-management support provided by pharmacists, CHW, and other health extenders.
- Promote payment incentives for quality improvement efforts to control HBP and HBC.

#### Partners

Self-Insured Employers (e.g., State government), Third Party Insurers, Medicaid, and other State health department (SHD) programs.

#### Community

- Promote use of pharmacists, dentists, case managers, CHW, and other health extenders to improve health outcomes.
- Promote linkage between patients, community resources, and healthcare systems.
- Strengthen collaboration across chronic disease programs to promote healthy policies/environments, including integration of measures that reduce risks known to contribute to HBP and HBC.

#### Partners

Nutrition, Physical Activity and Obesity Program, Tobacco Control Program, Healthy Communities Program, Diabetes Prevention and Control Program, and other chronic disease prevention programs.

#### Resources

Glynn LG, Murphy AW, Smith SM, Schroeder K, Fahey T. Interventions used to improve control of blood pressure in patients with hypertension. *Cochrane Database of Syst Rev* 2010 (3):CD005182.

Institute of Medicine. *A population-based policy and systems Change approach to prevent and control hypertension*. Washington, DC: National Academy Press; 2010.

Ladd S, Wall HK, Rogers T, Fulmer E, Lim S, Leeks K, Jernigan J. Outcome indicators for policy and systems change: controlling high blood pressure. Final report. Atlanta, GA: Centers for Disease Control and Prevention; 2008 Ladd S, Wall HK, Rogers T, Fulmer E, Lim S, Leeks K, Jernigan J. Outcome indicators for policy and

systems change: controlling high blood cholesterol. Final report. Atlanta, GA: Centers for Disease Control and Prevention; 2010

National Committee for Quality Assurance. *Supporting small practices: lessons for health reform* [internet]. Washington, DC: National Committee for Quality Assurance; 2009 [cited 2010 December 6]. Available from <http://www.ncqa.org/tabid/1035/Default.aspx>

National Business Group on Health [internet]. Washington, DC: National Business Group on Health; c2010 [cited 2010 December 6]. *Moving science into coverage: an employer's guide to preventive services; [about 6 screens]*. Available from: <http://www.businessgrouphealth.org/preventive/background.cfm>

Centers for Disease Control and Prevention [internet]. Atlanta, GA: Centers for Disease Control and Prevention; c2006 [updated 2008 January 7; cited 2010 December 6]. *Successful business strategies to prevent heart disease and stroke prevention toolkit; [about 3 screens]*. Available from: [http://www.cdc.gov/dhdsp/pubs/employers\\_toolkit.htm](http://www.cdc.gov/dhdsp/pubs/employers_toolkit.htm)

Torda P, Hans ES, Schoole SH. Easing the adoption and use of electronic health records in small practices. *Health Affairs*. 2010; 29:668-75.

Brownstein JN, Chowdhury FM, Norris SL, Horsley T, Jack L Jr, Zhang X, Satterfield D. Effectiveness of community health workers in the care of people with hypertension. *Am J Prev Med*. 2007; 32:435-47.

Centers for Disease Control and Prevention. *Addressing chronic disease through community health workers: a policy and systems-level approach*. Atlanta, GA: Centers for Disease Control and Prevention; 2010.

Centers for Disease Control and Prevention [internet]. *Community health worker's sourcebook: a training manual for preventing heart disease and stroke* [internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2008 [cited 2010 December 6]. Available from: [http://www.cdc.gov/dhdsp/programs/nhdsp\\_program/chw\\_sourcebook/index.htm](http://www.cdc.gov/dhdsp/programs/nhdsp_program/chw_sourcebook/index.htm)

## Sodium

### Background and Rationale

High blood pressure (HBP) is a primary risk factor for heart disease and stroke. Nearly one in three U.S. adults has HBP. Excess sodium intake is a primary risk factor for HBP and subsequently, cardiovascular events. In the United States, consumption of sodium far exceeds recommended daily limits. The 2010 Dietary Guidelines for Americans recommends consuming less than 2,300 mg of sodium per day for the general population. Individuals who are 51 and older, and those of any age who are African American or have hypertension, diabetes, or chronic kidney disease should limit intake to 1,500 mg of

sodium per day. These specific populations account for about half of the U.S. population and the majority of adults. According to the National Health and Nutrition Examination Survey, the average sodium intake for Americans age 2 years and older is more than 3,400 mg per day. Reducing excess sodium consumption in the population can reduce the rate of hypertension and the burden of cardiovascular disease. Public health action at the Federal, State, and local levels is necessary in order to reduce the amount of sodium in the American diet.

## Strategies

### Policy, Systems, and Environmental Change Strategies

- Promote adoption of procurement policies and practices that limit sodium intake.
- Promote availability of lower sodium food options (e.g., increase accessibility and competitive pricing) in worksites and government institutions; promote prominent placement of fresh produce.
- Promote expansion of consumer information labeling initiatives that include sodium (e.g., point of purchase, warning labels).

### Earned Media

Use earned media and other activities and efforts to inform decision makers and opinion leaders of the need to reduce sodium intake. Earned media should be designed to support an identified policy or system change.

### Partners

Key governmental and non-governmental policymakers (legislative and administrative) at State and local levels, business association or corporation leaders (e.g., food producers, grocers, restaurants), consumer associations, SHD programs (e.g., Obesity or Nutrition Coordinator), nutrition experts, and food vendors.

### Resources

Institute of Medicine. Strategies to reduce sodium intake in the United States. Washington, DC: National Academies Press; 2010.

Centers for Disease Control and Prevention [internet]. Atlanta, GA: Centers for Disease Control and Prevention; c2010 [updated 2010 September 13; cited 2010 December 6]. Salt resource

## Smoking

### Background and Rationale

Cigarette smoking is the leading cause of preventable death in the United States, accounting for approximately 443,000 deaths or 1 of every 5 deaths in the country each year. Smoking cigarettes increases the risk of coronary heart disease, increases blood pressure and the tendency for blood to clot, decreases HDL cholesterol, and increases the risk of recurrent coronary heart disease after bypass surgery. Those who smoke are not the only ones at risk. In its 2009 report, *Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence*, the Institute of Medicine concluded that data consistently demonstrates that exposure to secondhand-smoke increases the risk of coronary heart disease and heart attacks.

### Strategies

#### Primary Healthcare Systems

- Promote a comprehensive clinical approach to smoking cessation that includes screening for tobacco use, cessation counseling, and pharmacotherapy.
- Promote referrals to State quitlines and other community resources for comprehensive cessation counseling.
- Promote the availability of no or low cost cessation medication.

#### Partners

Tobacco Control Programs, American Cancer Society, American Heart Association, American Lung Association, primary care providers, hospital associations, Federally Qualified Health Centers.

#### Workplaces and Communities

Support smoking bans as an effective means of reducing exposure to secondhand smoke. Promote referral to State quitlines.

#### Partners

Tobacco Control Programs, American Cancer Society, American Heart Association, American Lung Association and business coalitions.

Payers (e.g., Self-Insured Employers, Third Party, and Medicaid)

- Promote access to cessation products by reducing or eliminating co-pays or deductibles.
- Promote reimbursement for clinical and community services related to smoking cessation.

#### *Partners*

State Tobacco Control programs, American Cancer Society, American Heart Association, American Lung Association, public and private insurance corporations.

#### Resources

Ockene IS, Miller NH. Cigarette smoking, cardiovascular disease, and stroke: a statement for healthcare professionals from the American Heart Association. American Heart Association Task Force on Risk Reduction. *Circulation*. 1997; 96:3243-7.

Institute of Medicine. Secondhand smoke exposure and cardiovascular effects: Making sense of the evidence. Washington, DC: National Academies Press; 2009.

Sargent RP, Shepard RM, Glantz SA. Reduced incidence of admissions for myocardial infarction associated with public smoking ban: before and after study. *BMJ*. 2004; 328:977-80. Epub 2004 Apr 5. <http://www.bmj.com/cgi/content/full/328/7446/977>

Centers for Disease Control and Prevention. Best practices for comprehensive tobacco control programs [internet]. Atlanta, GA: Department of Health and Human Services,

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health

Promotion, Office on Smoking and Health; 2007 [cited 2010 December 6]. Available from: [http://www.cdc.gov/tobacco/tobacco\\_control\\_programs/stateandcommunity/best\\_practices/](http://www.cdc.gov/tobacco/tobacco_control_programs/stateandcommunity/best_practices/)

Centers for Disease Control and Prevention. A practical guide to working with health-care systems on tobacco-use treatment [internet]. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2006 [cited 2010 December 6]. Available from: [http://www.cdc.gov/tobacco/quit\\_smoking/cessation/practical\\_guide/index.htm](http://www.cdc.gov/tobacco/quit_smoking/cessation/practical_guide/index.htm)

Smokefree.gov [internet]. Bethesda, MD: National Cancer Institute; n.c. [cited 2010 December 6]. Available from: <http://www.smokefree.gov/>.

## Appendix A

*The following table provides strategies and the Division for Heart Disease and Stroke Prevention's indicators that relate to them. The indicators relate to the National Heart Disease and Stroke Prevention Program and are taken from Outcome Indicators for Policy and Systems Change: Controlling High Blood Pressure and Outcome Indicators for Policy and Systems Change: Controlling High Blood Cholesterol.*

### Control of High Blood Pressure and High Blood Cholesterol – Primary Care Health Systems

Strategy	NHDSP Indicators
Promote use of electronic health records (EHR) with registry function, decision support, and electronic reminders.	1.1.3, 1.1.4, 2.1.2, 2.1.4
Promote multi-disciplinary healthcare teams.	1.1.1
Promote provider adherence to current Joint National Committee (JNC)/Adult Treatment Panel (ATP) guidelines and other evidence-based hypertension and cholesterol guidelines (e.g., quality improvement performance measurement, medication academic detailing).	1.1.5, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.2.7, 2.1.4, 2.1.5, 2.2.1, 2.2.3, 2.2.4, 2.2.5, 2.2.6
Promote systems to support self-management (e.g., telephonic follow-up, linkages to home monitoring, community health workers, and self-management programs).	1.1.8, 1.1.9, 2.1.7, 2.2.7, 2.2.8
Promote systems changes which integrate and sustain use of community health workers and other healthcare extenders within healthcare settings.	1.1.2, 1.1.8, 1.1.9, 2.1.3

### Control of High Blood Pressure and High Blood Cholesterol – Workplaces

Strategy	NHDSP Indicators
Collaborate with other chronic disease programs and business coalitions to promote healthy workplace policies and environments that help prevent and control HBP and HBC.	1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.3.6, 2.3.1, 2.3.2, 2.3.3, 2.3.4

### Control of High Blood Pressure and High Blood Cholesterol – Payers (e.g., Self-Insured Employers, Third Party, Medicaid)

Strategy	NHDSP Indicators
Promote the reduction or elimination of co-pays or deductibles for HBP and HBC screening and control, including monitoring, medications, counseling, and lifestyle interventions.	1.3.1, 2.3.1
Promote reimbursement for self-management support provided by pharmacists, community health workers, and other health extenders.	1.1.8, 1.1.9, 2.1.7



<b>Sodium</b>	
<b>Strategy</b>	<b>NHDSP Indicators</b>
Promote adoption of procurement policies and practices that limit sodium intake.	1.4.1, 1.4.2, 1.4.4

<b>Control of High Blood Pressure and High Blood Cholesterol – Community</b>	
<b>Strategy</b>	<b>NHDSP Indicators</b>
Promote use of pharmacists, dentists, case managers, community health workers (CHW), and other health extenders to improve health outcomes.	1.1.1, 1.1.6, 1.1.8, 1.4.2, 1.4.4, 1.4.5, 2.1.7, 2.4.2, 2.4.3, 2.4.4
Promote linkages between patients, community resources, and healthcare systems.	1.4.5, 2.4.4
Strengthen collaboration across chronic disease programs to promote healthy policies/environments, including integration of measures that reduce risks known to contribute to HBP and HBC.	1.4.1, 1.4.2, 1.4.4, 1.4.5, 2.4.1, 2.4.2, 2.4.3, 2.4.4

<b>Smoking – Primary Healthcare Systems</b>	
<b>Strategy</b>	<b>NHDSP Indicators</b>
Promote a comprehensive clinical approach to smoking cessation that includes screening for tobacco use, cessation counseling, and pharmacotherapy.	1.1.4, 1.1.6, 1.1.8, 1.1.9, 1.2.3, 1.2.6
Promote referrals to State quitlines and other community resources for comprehensive cessation counseling.	1.1.4, 1.1.8, 1.1.9

<b>Smoking – Workplaces and Communities</b>	
<b>Strategy</b>	<b>NHDSP Indicators</b>
Support smoking bans as an effective means of reducing exposure to secondhand smoke. Including monitoring, medications, counseling, and lifestyle interventions.	1.3.6, 1.4.1, 1.4.2, 1.4.4
Promote referral to State quitlines.	1.3.3, 1.4.2, 1.4.4

<b>Smoking – Payers (e.g., Self-Insured Employers, Third Party, and Medicaid)</b>	
<b>Strategy</b>	<b>NHDSP Indicators</b>
Promote access to cessation products by reducing or eliminating co-pays or deductibles.	1.1.8, 1.3.1
Promote reimbursement for clinical and community services related to smoking cessation.	1.1.8, 1.3.1



CENTERS FOR DISEASE CONTROL AND PREVENTION  
National Center for Chronic Disease Prevention and Health Promotion  
Division for Heart Disease and Stroke Prevention  
Mail Stop K-47 / 4770 Buford Highway, NE / Atlanta, GA 30341  
800-CDC-INFO (800-232-4636) / TTY: 888-232-6348  
[www.cdc.gov/DHDSP](http://www.cdc.gov/DHDSP) / [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)