Take Heart Alaska

HEART DISEASE AND STROKE PREVENTION PLAN

2012-2018

Take Heart Alaska

STATE of ALASKA Department of Health and Social Services

ALASKA DIVISION OF Public Health

TAKE HEART ALASKA
HEART DISEASE AND STROKE PREVENTION PLAN 2012-2018

A Joint Project Between the
Alaska Department of Health and Social Services, Division of Public Health, and the Take Heart Alaska Coalition

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Third Edition

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This Plan outlines objectives and specific strategies. The objectives and strategies relate to prevention, treatment, and control of heart disease, stroke, and other vascular diseases as well as the prevention and control of the risk factors that lead to those conditions. These objectives and strategies were developed with contributions from and guidance of many community, worksite, health care and policy experts from across the state and country. Special recognition goes to these experts for sharing their knowledge, time and experience to develop a plan that, if embraced, will reduce death and disability due to cardiovascular disease across the state of Alaska.

The Alaska Heart Disease and Stroke Prevention Program and the Take Heart Alaska coalition thank their many partners for their dedication to preventing the mortality and morbidity caused by cardiovascular disease.

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To order a copy of this publication contact the Alaska Division of Public Health, Section of Chronic Disease Prevention and Health Promotion, Heart Disease and Stroke Prevention Program, P.O. Box, 110614, Juneau, AK 99811-0614, or contact heart@alaska.gov.

Sean Parnell
Governor, State of Alaska

William J. Streur
Commissioner, Alaska Department of Health and Social Services

Ward B. Hurlburt, M.D., MPH
Chief Medical Officer

Kerre Fisher
Director, Division of Public Health

Kathy Allely, MPH
Chief, Section of Chronic Disease Prevention and Health Promotion

ALASKA HEART DISEASE AND STROKE PREVENTION PROGRAM

Janice L. Gray, RN, BSN, Nurse Consultant, Program Manager

Russell Stevens, BS, Public Health Specialist

Clint J. Farr, MS, Public Health Specialist, Epidemiologist/Evaluator

TAKE HEART ALASKA COALITION STEERING COMMITTEE - 2012

Martha Pearson, MA, CTTS-M, ACSM Pt, Steering Committee Chair, SEARHC, Community Transformation Grant Program Manager, Sitka, AK

Christie Artuso, RN, CCRN, CNRN, Ed. D, Providence Alaska Medical Center, Anchorage, AK

Sandra Carroll-Cobb, MS, Ed. D, University of Alaska – Anchorage, Anchorage, AK

Michelle Cassano, American Diabetes Association – Alaska Affiliate, Anchorage, AK

Deborah Corker, PhD, Alaska Health Fairs, Inc., Anchorage, AK

Michael Difilippo, MS, RD, HealthSmart Care Management Solutions, LP, Anchorage, AK

Gary Ferguson, ND, Alaska Native Tribal Health Consortium, Anchorage, AK

Litia Garrison, Southeast Alaska Regional Health Consortium, WISEWOMAN Program, Sitka, AK

Renae Mathson, Southeast Alaska Regional Health Consortium (SEARHC), Sitka, AK

John McCleary, Alaska Recreation and Parks Association, Anchorage, AK

Lisa Sauder, American Heart Association, Anchorage, AK

Justine Muench, RN, MN, University of Alaska – Anchorage/Southeast, Juneau, AK

Sarah Paddock, Southeast Alaska Regional Health Consortium, Juneau, AK

Brenda Shelden, PT, ATC, WCC, Mat-Su Regional Medical Center, Palmer, AK

Susan Suarez, Southeast Alaska Regional Health Consortium, WISEWOMAN Program, Sitka, AK

Stanley Watkins, MD, MHS, Alaska Heart Institute, Anchorage, AK

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ALASKA CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION SECTION

Andrea Fenaughty, PhD, Deputy Section Chief

Barbara Stillwater, RN, PhD, Nurse Consultant, Diabetes Prevention and Control Program Manager

Karol Fink, MS, RD, Program Manager, Obesity Prevention and Control Program

Diane Peck, MPH, RD, Community and Evaluation Specialist, Obesity Prevention and Control Program

Gail Stolz, MPH, Public Health Specialist, Diabetes Prevention and Control Program

Rebecca Topol, SM, Manager, Behavioral Risk Factor Surveillance System (BRFSS)

Jayne Andreen, BA, Program Manager, Health Promotion/Injury Prevention Program

Wendy Hamilton, BHS, Program Manager, School Health Program/Youth Risk Behavior Survey (YRBS)

Julia Thorsness, BA, Program Manager, Comprehensive Cancer Control Program

Alexandria Modigh-Hicks, BHS, Program Manager, Tobacco Prevention and Control Program

Julie Bates, BA, Publication Specialist

Charles Utermohle, PhD, Programmer/Analyst

Leslie Felts, RN, MSN, Nurse Consultant, Manager Chronic Disease Programs

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SUPPLEMENTARY REFERENCE MATERIALS

- Million Hearts™ Toolkits: http://millionhearts.hhs.gov/resources/toolkits.html
- Reference Card from the *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).* http://www.nhlbi.nih.gov/guidelines/hypertension/phycard.pdf
    - JNC 7 Full Report: http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf
- National Cholesterol Education Program ATP III Guidelines At-A-Glance: Quick Desk Reference from the Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). http://www.nhlbi.nih.gov/guidelines/cholesterol/atglance.pdf
    - ATP III Full Report: http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf
- Warning Signs of Heart Attack: http://www.nhlbi.nih.gov/health/public/heart/mi/heart_attack_low-lit_fs.htm and http://www.nhlbi.nih.gov/health/public/heart/mi/heart_attack_low-lit_fs.pdf
- Take Heart Alaska F.A.S.T. Warning Signs of Stroke: http://dhss.alaska.gov/sites/takeheart/SiteCollectionDocuments/FAST_brochure.pdf
- Take Heart Alaska *Know Your Numbers* Screening Guide: http://dhss.alaska.gov/sites/takeheart/Documents/KnowYourNumbers_LgEventCard.pdf
- Cardiovascular Disease Preventive Care in Women (AHA) Algorithm for Cardiovascular Disease Preventive Care in Women: http://circ.ahajournals.org/content/123/11/1243.full.pdf

EXECUTIVE SUMMARY

Alaska is fortunate compared to other states. Nationally, diseases of the heart are the number one cause of death. However, diseases of the heart are the number two cause of death in Alaska. As of 2008, the incidence of stroke dropped to fifth as a cause of death in Alaska, compared with a national ranking of fourth. Although mortality rate of heart disease and stroke in Alaska is lower than that of many other states, cardiovascular disease still needs to be monitored and aggressively addressed. Collectively, diseases of the heart and stroke account for 24 percent of deaths in Alaska in 2009. Through promotion and support of healthy lifestyles, prevention, education, and prompt proper treatment, the Take Heart Alaska Heart Disease and Stroke Prevention Plan 2012-2018 aims to lower the prevalence of heart disease and stroke even further.

Cardiovascular disease can be prevented or delayed through healthy lifestyle choices and preventive health services. Modifiable factors include: eliminating tobacco use, eating a healthy diet, maintaining a physically active lifestyle, use of aspirin therapy according to recognized guidelines, regular blood pressure and cholesterol screenings, controlling blood pressure and cholesterol levels, maintaining a healthy weight, and managing stress. Additionally, many of the same healthy lifestyle choices that help prevent cardiovascular disease help prevent many other serious health problems. Cancer, diabetes, arthritis, and depression are just a few conditions that can be avoided or reduced by the management of modifiable behaviors. Many risk factors, such as age, sex, race, family history and prior health concerns, cannot be changed but can provide information that helps Alaskans reduce cardiovascular disease risk and overall effects with preventive care.

The latest edition of the Take Heart Alaska Heart Disease and Stroke Prevention Plan encourages the education and prevention of cardiovascular disease so Alaskans continue to have the potential for a healthy future.

TAKE HEART ALASKA COALITION

Take Heart Alaska (THA) is a coalition of agencies, organizations and individuals working together to prevent heart disease and stroke in Alaska. Take Heart Alaska strives to align its state-wide efforts with national health care, government, and policy promotion and support agencies, and well as Alaskan commissions, communities and other coalitions.

Mission:
Increase cardiovascular health for Alaskan individuals and communities by promoting healthy lifestyles and proven preventive and treatment services.

Vision:
Balancing mind, body, and spirit to create a heart-healthy and stroke-free Alaska.

For more information contact:

Alaska Heart Disease and Stroke Prevention Program
P.O. Box 110614
Juneau, Alaska 99811-0614
Phone: 1-888-465-3140
Fax: 907-465-2770

http://dhss.alaska.gov/dph/Chronic/Pages/Cardiovascular/default.aspx

Take Heart Alaska Coalition (cont'd)

Because of support and collective partnerships, some of the Alaskan-focused programs supported by Take Heart Alaska are also nationally and federally sponsored. One of the federal agencies indirectly supporting Take Heart Alaska is the Centers for Disease Control and Prevention (CDC). The CDC is currently providing grant funding for chronic disease prevention, particularly for heart disease and stroke prevention, and is one of the sources of Take Heart Alaska project funding. Other private, public, and non-profit agencies support the coalition in a variety of ways.

The Centers for Disease Control and Prevention (CDC) is an important partner in Alaska's efforts to reduce heart disease and stroke at the state level through grant funding and providing program direction. The CDC translates prevention research into public health practice. The CDC funds survey and data collection, national chronic disease and risk factor prevention and control programs, applied research, and evaluation initiatives.

ALASKA HEART DISEASE AND STROKE PREVENTION PROGRAM

Heart disease and stroke are complex diseases that require the involvement and collaboration of multiple partners, such as state and local governments, voluntary health organizations, employer groups, and health care providers.

The primary purpose of the Alaska Heart Disease and Stroke Prevention (HDSP) Program is to implement heart disease and stroke prevention interventions to reduce morbidity, mortality, and related health disparities. The purpose is to be achieved by implementing evidence-based public health practices and to collaborate with the private and public sectors for State-level coordinated and sustainable approaches.

The CDC funds State programs to promote policy and systems change in health care, worksite, and community settings, and to encourage the elimination of health disparities. With the direction of the CDC, the Alaska Heart Disease and Stroke Prevention Program will emphasize the ABCS (Aspirin use, Blood pressure control, Cholesterol management, Smoking cessation) of heart disease and stroke prevention. Some projects also work to improve emergency response and the quality of acute care.

Together, heart disease and stroke are the leading cause of death in Alaska. The goal of the State of Alaska Heart Disease and Stroke Prevention (HDSP) Program is to positively impact the vascular health of all Alaskans. Working under a grant from the Centers for Disease Control and Prevention, HDSP seeks to prevent and improve treatment for heart disease and stroke through public education, professional

education and collaboration with statewide partners. The HDSP program also provides staffing and support for the statewide coalition, Take Heart Alaska.

DEVELOPMENT OF THE PLAN

The third edition of the Take Heart Alaska Heart Disease and Stroke Prevention Plan is a joint project of the Alaska Department of Health and Social Services, Division of Public Health and the Take Heart Alaska cardiovascular health coalition. The Take Heart Alaska coalition aligns its work with communities, state and national health care, governmental, quality improvement, and advocacy agencies, coalitions, and commissions.

The original Take Heart Alaska coalition included agencies and organizations such as the Alaska Region of the American Heart Association and Alaska Health Fair, Inc. Additional participants included representatives from hospitals, tribal health organizations, and local governments. Also included were experts in cardiology, wellness, nutrition, and physical activity. Together, they worked to publish the first Take Heart Alaska Cardiovascular Disease Prevention Plan in 1998.

The mission of the first plan was "to provide guidance for Alaskans to decrease deaths from heart diseases and stroke, reduce the morbidity of these diseases, and to prevent their prevalence through the promotion of healthy lifestyle choices."

The second edition of the plan was published in 2003. This version updated the mission, updated risk factors and risk reduction guidelines, and developed plan goals and objectives.

The third edition reevaluates the Take Heart Alaska Cardiovascular Disease Prevention Plan and refocuses its goals. This edition provides overall guidance to communities, worksites, schools, healthcare providers, public health leaders, and others to improve cardiovascular health and the systems that improve cardiovascular health in Alaska.

The intent of the latest Take Heart Alaska Heart Disease and Stroke Prevention Plan is to increase cardiovascular health among all Alaskans. For an individual or community, the plan promotes and supports a commitment to healthy lifestyles, improved access to preventive services, and the expansion of evidence-based cardiovascular disease and risk factor care. The Take Heart Alaska Heart Disease and Stroke Prevention Plan encourages preventing cardiovascular disease so Alaskans continue to have the potential for a bright and healthy future.

Take Heart Alaska Heart Disease and Stroke Prevention Plan 2012-2018

The following goals help satisfy the purpose of the plan.

Goal 1: Work collaboratively to improve the ability of all Alaskans to eat a healthful diet, to be physically active, and to live tobacco-free.

Goal 2: Ensure that all Alaskans know how to reduce their risk of heart disease and stroke.

Goal 3: Ensure optimal treatment and secondary prevention for heart disease and stroke patients.

Goal 4: Improve data collection abilities and documentation systems used by Alaska health care organizations and providers (especially as they relate to heart disease and stroke data).

Heart disease and stroke are two of the leading causes of death in the United States. Million Hearts® brings together communities, health systems, nonprofit organizations, federal agencies, and private-sector partners from across the country to fight heart disease and stroke.

Be One in a Million Hearts®

For more information:
http://millionhearts.hhs.gov/

ABOUT MILLION HEARTS™

Million Hearts™ is a national initiative to prevent one million heart attacks and strokes in the United States over the next five years. Launched by the Department of Health and Human Services (HHS) in September 2011, it aligns existing efforts, and creates new programs to improve health across communities and help Americans live longer, more productive lives. The Centers for Disease Control and Prevention (CDC) and Centers for Medicare and Medicaid Services (CMS), co-leaders of Million Hearts™ within HHS, are working alongside other federal agencies and private-sector organizations to make a long-lasting impact against cardiovascular disease.

MILLION HEARTS™ GOALS

Preventing one million heart attacks and strokes by 2017 through:

- Empowering Americans to make healthy choices such as preventing tobacco use and reducing sodium and trans fat consumption. This can help reduce the number of people who need medical treatment such as blood pressure or cholesterol medications to prevent heart attacks and strokes.
- Improving care for people who do need treatment by encouraging a targeted focus on the ABCS: Aspirin for people at risk, Blood pressure control, Cholesterol management and Smoking cessation, which address the major risk factors for cardiovascular disease and can help to prevent heart attacks and strokes.

MILLION HEARTS™ SUPPORT

Million Hearts™ is a public-private initiative that involves multiple federal agencies and key private organizations. Collectively, these partnerships will help Million Hearts™ leverage and further existing investments in cardiovascular disease prevention.

Examples of Million Hearts™ activities include:

- Educational campaigns to increase awareness about heart disease prevention and empower patients to take control of their heart health.
- Use of health information technology and quality improvement initiatives to standardize and improve the delivery of care for high blood pressure and high cholesterol.
- Community efforts to promote smoke free air policies and reduce sodium in the food supply.

Million Hearts™ ABCS	
Aspirin	People at increased risk of cardiovascular disease who are taking aspirin.
Blood Pressure	People with hypertension who have adequately controlled blood pressure.
Cholesterol	People with high cholesterol who have adequately managed hyperlipidemia.
Smoking	People trying to quit smoking who get help.

Adapted from Million Hearts™ Partners Factsheet. Available:
http://millionhearts.hhs.gov/Docs/GR_Toolkit/GR_partners_fact_sheet.pdf

THE BURDEN OF HEART DISEASE AND STROKE IN ALASKA

(Excerpted from The Burden of Heart Disease and Stroke in Alaska: Mortality, Hospitalization and Risk Factors, 2013 Update)

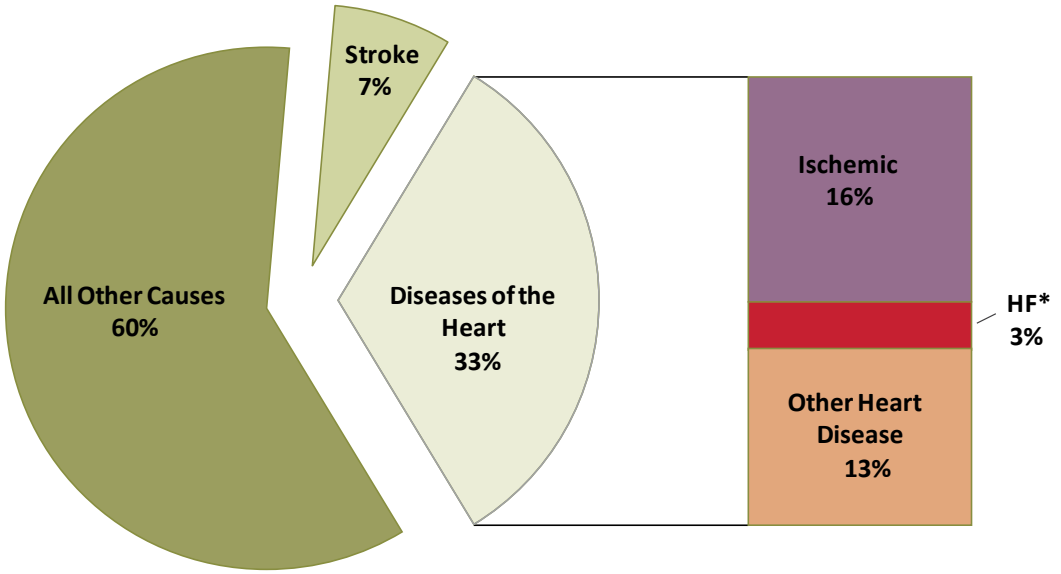
More Alaskans die from heart disease and stroke combined than any other cause. Of the approximately

3,500 Alaskans who died in 2009, more than 800 died from either heart disease or stroke.[1] That translates to more than 4,000 years of productive life lost in a single year due to heart disease and stroke.

In the next 10 years, the number of Alaskans who are expected to die from heart disease and stroke will be roughly equivalent to the population of the North Slope Borough, or the city of Ketchikan, or the entire Aleutian archipelago.2 Death from heart disease and stroke is a common event in every Alaskan city, town, and village. It touches Alaskans of every race, ethnic group, occupation and social class.

Every person now living in Alaska likely knows someone well who will die as a result of either heart disease or stroke. Although deaths from these two causes will never be completely eliminated, renewed public health efforts can substantially reduce premature death from heart disease and stroke.

Figure 1. Heart Disease and Stroke as Causes of Death, Alaska, 2009



* Heart failure
Source: AK Bureau of Vital Statistics

As serious as heart disease is for Alaska's health, our state enjoys a low heart disease death rate relative to most other States. Alaska has the second lowest heart disease mortality rate and the sixteenth lowest age-adjusted heart disease mortality rate. Fewer Alaskans die from heart disease than would be expected in a contemporary American population of Alaska's size. Alaska is one of 21 states where heart disease is not the leading cause of death.[3]

It is possible that outmigration of Alaskans with heart disease and other chronic illnesses reduces the state's observed mortality rates. Little is known about who migrates out of Alaska or why, but a portion of Alaskans with known heart disease may choose to relocate each year to other states, where their deaths no longer contribute to Alaska's mortality rates. Such relocation has not been studied, but it seems plausible given the state's harsh winter climate and the long distances that often separate patients from advanced treatment services.

For more Alaska specific data can be found online at:

Informed Alaskans
HEALTH MAPS

http://dhss.alaska.gov/dph/InfoCenter/Pages/ia/default.aspx

A more certain explanation of Alaska's comparative advantage in heart disease risk is the younger age structure of the state's population. Alaska's relatively small proportion of residents over age 65 reduces the pool of individuals most at risk of fatal strokes and heart disease events in the population at large. Because Alaska's age structure is different from that of the United States as a whole, all the mortality rates presented below have been age-adjusted.

But even taking differences in age structure into account, Alaska has a relatively low death rate from heart disease, compared to most other states. The age-adjusted death rate for heart disease in Alaska is 12% lower than the national rate.[4]

In contrast, the stroke death rate in Alaska, after adjusting for age, is about 4% higher than the national rate. As Table 1 shows, the ranking of Alaska's top causes of death is dissimilar from the United States[5] as a whole.

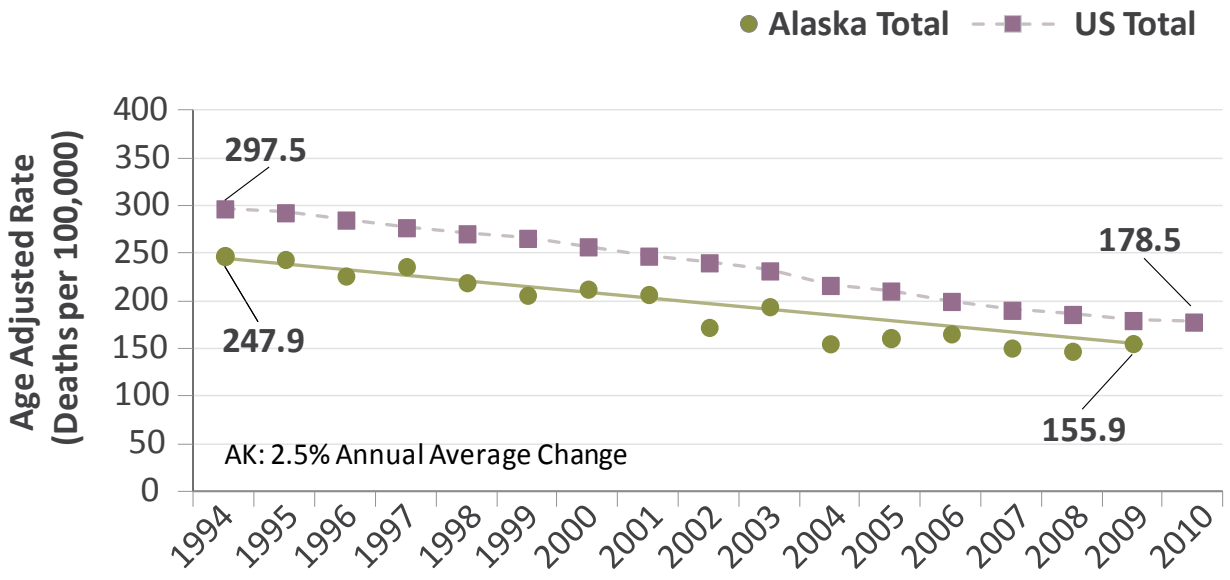
Table 1. Top 10 Causes of Death, Alaska (2009) and U.S. (2010)

Cause of Death	Alaska Deaths	Alaska Age-Adjusted Rate	U.S. Age-Adjusted Rate	U.S. Rank
1. Cancer	891	184	172.8	2
2. Diseases of the Heart	710	155.9	179.1	1
3. Unintentional Injuries	339	54	38	5
4. Chronic Lower Respiratory Disease	195	49.2	42.2	3
5. Stroke	162	40.6	39.1	4
6. Suicide	140	20.2	12.1	10
7.Chronic Liver Disease and Cirrhosis	94	14.2	9.4	12
8. Diabetes	84	18.1	20.8	7
9. Alzheimer's Disease	67	20.4	25.1	6
10. Influenza and Pneumonia	51	12.1	15.1	9

Notes: Data sources are Alaska Bureau of Vital Statistics (for Alaska data) and National Center for Health Statistics, CDC (for U.S. data); rates are per 100,000 persons, standardized to the U.S. 2000 standard million.

The next two figures illustrate changes in the age-adjusted rates of death from all types of heart disease, and stroke in Alaska between 1994 and 2009,[6] and the United States between 1994 and 2009. Regression lines have been fit to the annual age-adjusted rates to test the significance of the trend during this period. Percentage of change during this time period is reported as an average annual percentage change.

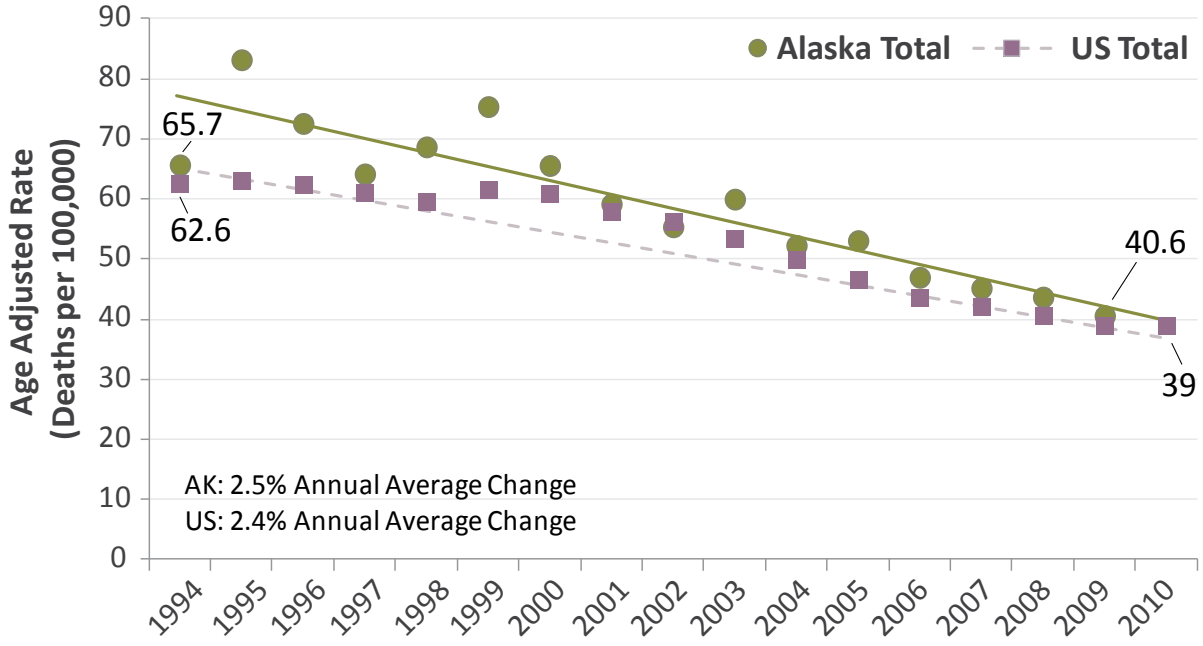
Figure 2. Trends in Age-Adjusted Rates of Death Due to Diseases of the Heart, Alaska (1994-2009) and US (1994-2010)



Sources: AK Bureau of Vital Statistics; CDC WONDER

The age-adjusted death rate from diseases of the heart has declined significantly in Alaska since 1994, dropping an average of nearly 2.5% annually through 2009, as indicated by the trend line in Figure 2. This is comparable to a 2.5% annual decline in age-adjusted mortality from diseases of the heart in the United States as a whole during this same time. In Alaska, the rate of death from diseases of the heart has fallen from a high of 247.9 per 100,000 in 1994 to 155.9 per 100,000 by 2009. The Alaska rates have remained below the national rates during the entire period.

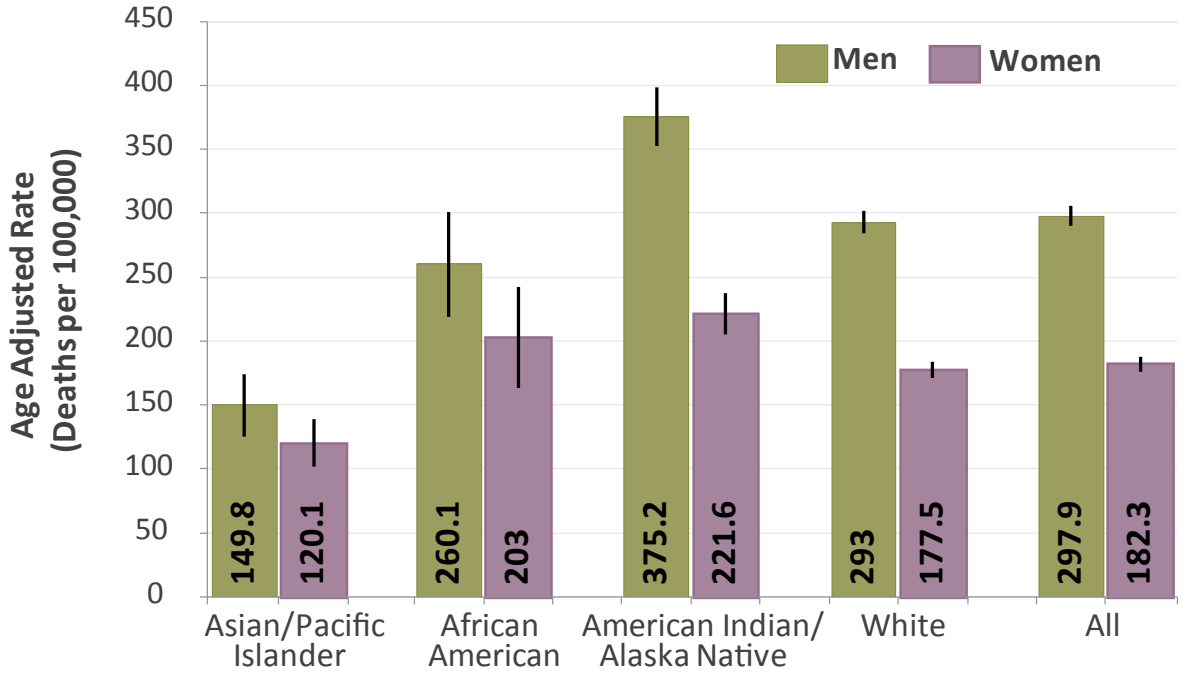
Figure 3. Trends in Age-Adjusted Rates of Death Due to Stroke, Alaska (1994-2009) and US (1994-2010)



Sources: AK Bureau of Vital Statistics; CDC WONDER

The age-adjusted death rate from stroke in Alaska decreased from 65.7 per 100,000 in 1994 to 40.6 per 100,000 in 2009, for an annual average percent change of 2.5% (Figure 3). The age adjusted mortality from stroke has declined in the United States during this period by an average of 2.4% annually.

Figure 4. Age-Adjusted Rates of Death Due to Diseases of the Heart, by Race and Sex, Alaska 1994-2010 (combined)



Source : AK Bureau of Vital Statistics

Age-adjusted death rates from diseases of the heart were higher among men compared to women in all racial groups, except among Asian Pacific Islanders, where there was no significant sex difference in mortality rates (Figure 4). Among women, Asian/Pacific Islanders had the lowest rate at 120.1 deaths per 100,000. White women had the second lowest rates at 177.5 deaths per 100,000.

A slightly different pattern was seen in men's mortality rates for diseases of the heart. Among men, the highest age-adjusted rates were seen in American Indian/Alaska Natives, followed by Whites, then African Americans, and finally Asian/Pacific Island men.

Table 2. Number of deaths due to selected causes, by region, Alaska (1994-2010 combined)

Region of Alaska	Diseases of the Heart (Rank)		Ischemic Heart Disease* (Rank)		Stroke (Rank)	
Municipality of Anchorage	3687	(1)	2391	(1)	1156	(1)
Fairbanks North Star Borough	1153	(2)	746	(2)	289	(2)
Matanuska-Susitna Borough	1090	(3)	713	(3)	245	(3)
Kenai Peninsula Borough	1050	(4)	707	(4)	223	(4)
Juneau Borough	410	(5)	250	(5)	125	(5)
Ketchikan Gateway Borough	317	(6)	203	(6)	65	(8)
Bethel	187	(7)	92	(12)	80	(6)
Sitka Borough	186	(8)	136	(7)	69	(7)
Wrangell-Petersburg	186	(8)	120	(8)	46	(11)
Nome	170	(9)	98	(11)	52	(10)
Kodiak Island Borough	162	(10)	101	(9)	55	(9)
Valdez-Cordova	150	(11)	99	(10)	45	(12)
Yukon-Koyukuk	129	(12)	82	(14)	36	(14)
Southeast Fairbanks	121	(13)	90	(13)	42	(13)
Prince of Wales-Outer Ketchikan	116	(14)	73	(15)	18	(18)
Northwest Arctic Borough	107	(15)	65	(16)	27	(15)
North Slope Borough	99	(16)	50	(17)	24	(16)
Wade Hampton	85	(17)	45	(18)	23	(17)
Dillingham	66	(18)	36	(21)	27	(15)
Skagway-Hoonah-Angoon	65	(19)	39	(20)	15	(20)
Haines Borough	59	(20)	43	(19)	16	(19)
Aleutians West	33	(21)	25	(22)	6	(22)
Lake and Peninsula	27	(22)	22	(23)	12	(21)

Denali Borough	20	(23)	14	(24)	4	(23)
Aleutians East Borough	16	(24)	11	(25)	6	(22)
Bristol Bay Borough	16	(24)	11	(25)	2	(24)
Yakutat Borough	14	(25)	9	(26)	3	(25)
Total	9721		6271		2711	

*Ischemic heart disease falls within the broader diagnosis of diseases of the heart.

Notes: Data source is Alaska Bureau of Vital Statistics; ICD-9 and ICD-10 codes used: Diseases of the Heart: 390-398, 402, 404, 410-429 (ICD-9), I00-I09, I11, I13, I20-I51 (ICD-10); Ischemic Heart Disease: 410-414,429.2 (ICD-9), I20-I25 (ICD-10); Stroke: 430-434, 436-438 (ICD-9), I60-I69 (ICD-10).

Table 2 shows the regional distribution of deaths due to diseases of the heart, ischemic heart disease, and stroke for the period 1994 through 2010. The relatively small number of cause-specific deaths observed for some census areas in Alaska, even during a 17-year period, makes computation of age adjusted rates for most geographic areas of the state unreliable. Although the absence of rates makes meaningful regional comparisons problematic, it is important to at least understand how the burden of heart disease and stroke mortality is experienced across the state.

Over the 17-year period, 9,721 Alaskans died due to diseases of the heart—6,271 specifically from ischemic heart disease. An additional 2,711 Alaskans died due to stroke in this time period. Not surprisingly, the greatest burden of diseases of the heart, ischemic heart disease, and stroke mortality was experienced collectively in the five largest population centers in Alaska: the Municipality of Anchorage, Fairbanks North Star Borough, Matanuska-Susitna Borough, Kenai Peninsula Borough, and Juneau Borough. The boroughs reporting the lowest number of deaths due to these three causes are: Bristol Bay, Yakutat, Denali, and Aleutians East.

[1] http://www.dhss.alaska.gov/dph/VitalStats/Documents/PDFs/2009/2009_Death_web.pdf

[2] Taken from current Heart Disease & Stroke mortality rates and multiplied by 10 ~ 10,000 deaths from HDS

[3] http://www.cdc.gov/nchs/data/dvs/deaths_2009_release.pdf

[4] Subtract US age-adjusted from Alaska age-adjusted and divide by US rate to get "percentage of national rate"

[5] http://www.cdc.gov/nchs/data/dvs/deaths_2010_release.pdf

[6] http://www.hss.state.ak.us/dph/bvs/death_statistics/Leading_Causes_Census/frame.html

KEY FINDINGS

EXCERPTED FROM THE BURDEN OF HEART DISEASE AND STROKE IN ALASKA: MORTALITY, HOSPITALIZATION AND RISK FACTORS, DECEMBER 2009

- Compared to most other states, Alaska has a relatively low heart disease death rate. Furthermore, rates of death from heart disease, particularly ischemic heart disease, have been falling over the past decade and a half, similar to the pattern seen in the U.S. overall.
- In contrast, the stroke death rate in Alaska has tended to be above the national rate over the past 14 years. Although highly variable due to relatively small numbers, it appears as though this gap between the Alaska and U.S. stroke mortality rates is closing.
- Although socioeconomic and racial disparities do exist, heart disease and stroke touch Alaskans of every race, ethnic group, occupation and social class.
- Ten percent of hospitalizations in Alaska in 2007 were for a primary diagnosis of either heart disease or stroke. Compared to the pattern seen in the U.S. overall, the Alaskans who are being hospitalized primarily for heart disease and stroke are disproportionately male and between the ages of 45 and 64.
- There is a gender gap in terms of in-hospital treatment of ischemic heart disease. Women hospitalized for ischemic heart disease are less likely than men to receive angiography or arteriography, cardiac catheterization, percutaneous coronary intervention, and bypass surgery.
- Treatment and care related to heart disease and stroke have a tremendous economic cost in Alaska.
- Hospitalizations for heart disease in Alaska cost $515 million in 2007, just over one-third of the total for all hospitalization costs in that year; hospitalizations for stroke cost over $80 million.
- Medicaid payments alone for health care services related to heart disease in Alaska State Fiscal Year (SFY) 2007 ran $9.4 million. Over $12.4 million was paid by Medicaid for claims related to stroke. Given that there were 1,354 individuals with Medicaid claims related to a primary diagnosis of stroke in SFY 2007, this translates to a cost of nearly $10,000 per stroke sufferer.
- Seventy-five percent of stroke-related Medicaid claims in SFY 2007 went towards long-term care.

- Less than one-third of the approximately 15,000 Alaskans who reported having had a heart attack say they were referred to cardiac rehabilitation.
- Heart disease and stroke risk factors are generally present in Alaska in levels comparable to what is seen in the U.S. overall, and most have either remained stable or increased over the past decade and a half. For example:
    - Smoking prevalence has declined to 22 percent, but this rate is still higher than in the U.S. overall.
    - Obesity/overweight is increasing, and at 65 percent is slightly higher than in the U.S. overall.
    - Diabetes prevalence has been slowly increasing over the past decade; the steadily rising obesity rate will likely continue to fuel this rise.
    - Although at 25 percent, Alaska's hypertension prevalence is lower than that of the U.S. overall, this key risk factor is on the rise in Alaska.
    - Cholesterol screening is improving, but 29 percent of adult Alaskans did not have their blood cholesterol tested in the previous five years. In the U.S. overall, only 25 percent are not obtaining these important screenings.
    - At 38 percent, the prevalence of high cholesterol has reached its highest level since being assessed on the Alaska BRFSS beginning in 1991.
    - Almost half of Alaskans have two or more of the above risk factors; an additional one-third has a single risk factor.
    - In many cases, American Indian/Alaska Natives, residents of rural Alaska, and socioeconomically disadvantaged Alaskans experience higher levels of risk factors related to heart disease and stroke.

Sources:

Alaska Department of Health and Social Services. The Burden of Heart Disease and Stroke in Alaska: Mortality, Morbidity, and Risk Factors. Anchorage, AK: State of Alaska, Dept of Health and Social Services, Division of Public Health, Section of Chronic Disease Prevention and Health Promotion; December 2009. Available at: http://www.hss.state.ak.us/dph/chronic/chp/pubs/burden_Dec09.pdf

Heron MP, Hoyert DL, Murphy SL, Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: Final data for 2006. National vital statistics reports; vol 57 no 14. Hyattsville, Maryland: National Center for Health Statistics. 2009.

Chronic Disease Deaths, Alaska, 2009

Cause of Death (ICD-10 Codes)	Deaths	Age-Adjusted Rate[1]
Diseases of the Heart (I00-I78, I11, I13, I20-I51)	710	155.9
Coronary Heart Disease (Ischemic) (I20-I25)	441	93.3
Cerebrovascular Disease (Stroke) (I60-I69)	162	40.6

Chronic Disease Deaths, Alaska, 2000

Cause of Death (ICD-10 Codes)	Deaths	Age-Adjusted Rate[1]
Diseases of the Heart (I00-I78, I11, I13, I20-I51)	609	213.1
Coronary Heart Disease (Ischemic) (I20-I25)	408	137.7
Cerebrovascular Disease (Stroke) (I60-I69)	169	65.6

Chronic Disease Deaths, Alaska, 1999

Cause of Death (ICD-10 Codes)	Deaths	Age-Adjusted Rate[1]
Diseases of the Heart (I00-I78, I11, I13, I20-I51)	561	206.7
Coronary Heart Disease (Ischemic) (I20-I25)	382	131.5
Cerebrovascular Disease (Stroke) (I60-I69)	172	75.4

[1] Rates are per 100,000 population, adjusted to the year 2000 U.S. standard population.
Source: The Alaska Bureau of Vital Statistics: http://www.hss.state.ak.us/dph/bvs/default.htm
Last updated: 10/27/11 http://www.hss.state.ak.us/dph/bvs/death_statistics/Chronic_Disease_Census/frame.html

The Web of Risk Factors and Chronic Conditions

The Problem

More than half of Alaska adults report that they have one or more of the following: obesity, inactivity, smoking, history of diabetes, history of cardiovascular disease, or cancer. But how many are dealing with more than one? [1]

People with multiple chronic conditions have poorer health than those with a single chronic condition—including poorer day-to-day functioning.[2]

The Cost

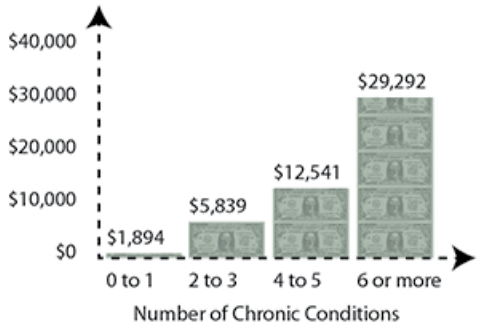
To the Nation

66 cents of each dollar spent on healthcare treats the 25% of Americans with one or more chronic conditions.[2]

When someone develops a number of chronic conditions, it is much more likely that he or she will spend more time in the hospital, will visit the emergency department more often and will incur significantly more in healthcare costs.[3]

In Alaska

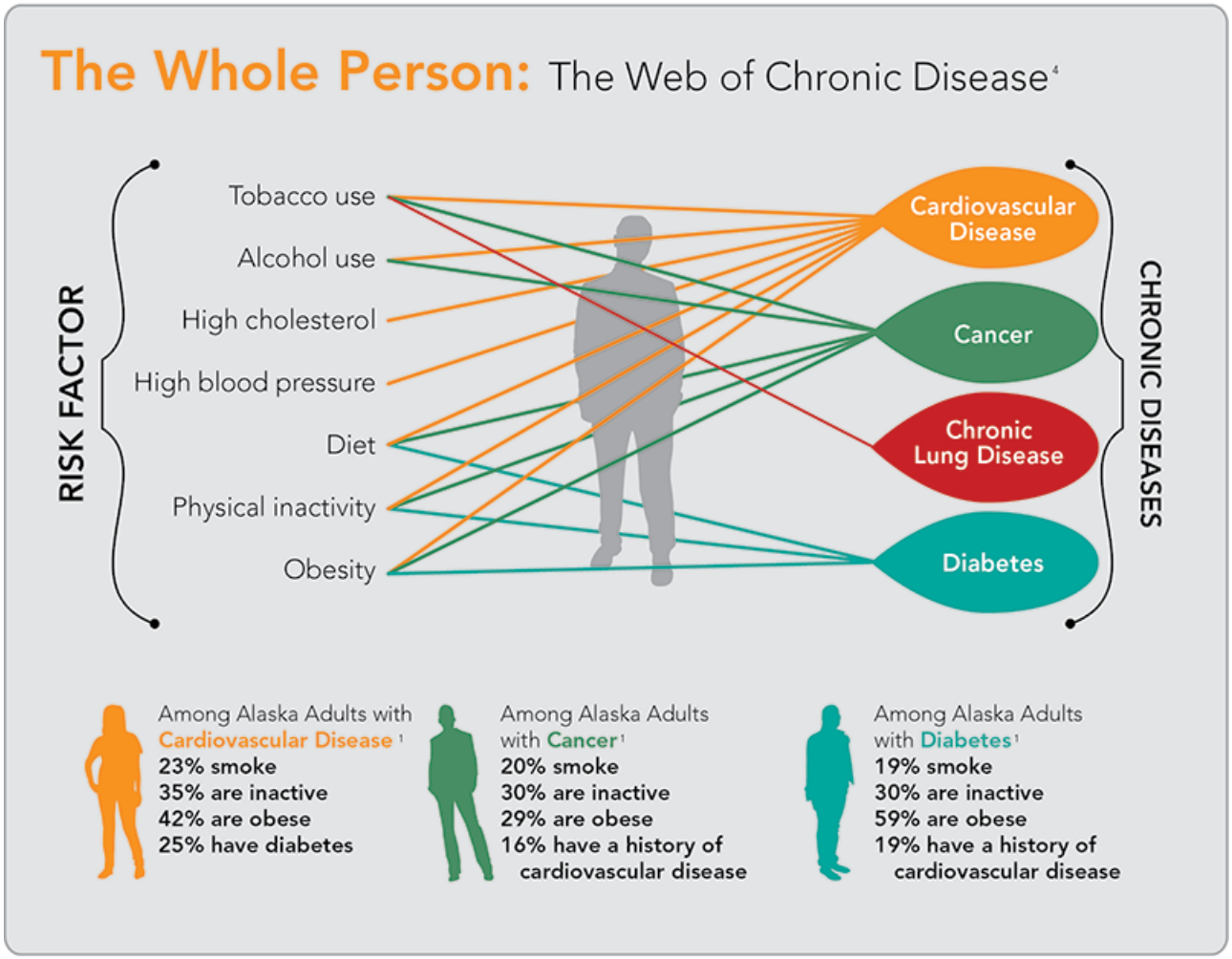
Annual Per Capita Cost, by Number of Chronic Conditions, Alaska Medicare Beneficiaries, 2011 CMS [3]



[1] AK BRFSS (2009-2011) [2] Anderson G. Chronic Care: Making the Case for Ongoing Care. Princeton, NJ: Robert Woods Johnson Foundation, 2010. [3] Centers for Medicare and Medicaid Services (CMS). State Level Chronic Condition Reports. http://www.cms.gov/Research-Statistics-Data-and Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CCStateReports.html. Accessed 12-11-2012. [4] Remington PL, Brownson RC, Wegner MV, eds. Chronic Disease Epidemiology and Control, 3rd Ed. Washington DC: American Public Health Association; 2010. [5] Ford ES, Bergmann MM, Kroger J, Schienkiewitz A, Weikert C, Boeing H. Healthy living is the best revenge. Findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam Study. Arch Intern Med 2009;169(15):1355-1362

http://dhss.alaska.gov/dph/Chronic/
Chronic Disease Prevention & Health Promotion

The Web of Risk Factors and Chronic Conditions (cont'd)



[1]AK BRFSS (2009-2011) [2] Anderson G. Chronic Care: Making the Case for Ongoing Care. Princeton, NJ: Robert Woods Johnson Foundation, 2010. [3] Centers for Medicare and Medicaid Services (CMS). State Level Chronic Condition Reports. http://www.cms.gov/Research-Statistics-Data-and Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CCStateReports.html. Accessed 12-11-2012. [4] Remington PL, Brownson RC, Wegner MV, eds. Chronic Disease Epidemiology and Control, 3rd Ed. Washington DC: American Public Health Association; 2010. [5] Ford ES, Bergmann MM, Kroger J, Schienkiewitz A, Weikert C, Boeing H. Healthy living is the best revenge. Findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam Study. Arch Intern Med 2009;169(15):1355-1362

http://dhss.alaska.gov/dph/Chronic/
Chronic Disease Prevention & Health Promotion

The Web of Risk Factors and Chronic Conditions (cont'd)

The Solution: Key Factors for Healthier Alaskans

4 healthy lifestyle choices: never smoking, maintaining a healthy weight, regular physical activity and a healthy diet, **reduce the risk of developing the most common and deadly chronic diseases by as much as 80%.**[5]

Public health + healthcare professionals + communities must work together to help

make healthy choices easy choices.

What Can I Do to Help?

Public Health Professionals: Educate communities about chronic disease and promote positive changes in the environment that help people stay healthy and prevent chronic conditions.

Health Care Providers: Provide patient-centered care from a multi-disciplinary team.

Individuals with Multiple Chronic Conditions: Learn effective strategies for managing your health.

Visit Living Well Alaska, www.dhss.alaska.gov/dph/Chronic/Pages/SelfManagement/default.aspx, for more information.

[1]AK BRFSS (2009-2011) [2] Anderson G. Chronic Care: Making the Case for Ongoing Care. Princeton, NJ: Robert Woods Johnson Foundation, 2010. [3] Centers for Medicare and Medicaid Services (CMS). State Level Chronic Condition Reports. http://www.cms.gov/Research-Statistics-Data-and Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CCStateReports.html. Accessed 12-11-2012. [4] Remington PL, Brownson RC, Wegner MV, eds. Chronic Disease Epidemiology and Control, 3rd Ed. Washington DC: American Public Health Association; 2010. [5] Ford ES, Bergmann MM, Kroger J, Schienkiewitz A, Weikert C, Boeing H. Healthy living is the best revenge. Findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam Study. Arch Intern Med 2009;169(15):1355-1362

http://dhss.alaska.gov/dph/Chronic/
Chronic Disease Prevention & Health Promotion

RISK FACTORS

Together, heart disease and stroke are the leading causes of death among Alaskans. There is a growing understanding of the factors that determine the risk of heart disease and stroke. Stroke and heart disease share many of the same risk factors, and while some are out of the individual's control, many risk factors can be reduced through lifestyle modifications and/or treatment of related medical conditions.

UN-MODIFIABLE RISKS

Advancing age, male sex, race, family history, and incidence of prior heart events are risk factors for heart disease and stroke that cannot be modified. Although these risk factors cannot be changed, un-modifiable factors can give us information and insight needed to prepare for and take precautions against heart disease and stroke.

MODIFIABLE RISKS

Most of the major determinants of heart disease and stroke risk are, to various degrees, able to be changed, treated, or controlled. While heart disease and stroke will likely never be completely eliminated, public health interventions aimed at specific risk factors can substantially lessen the burden of heart disease and stroke in the population, now and in the future.

Other modifiable factors include elevated stress levels, drinking too much alcohol, and illicit drug use. Stroke also has the following risk factors that differ from heart disease: atrial fibrillation, sickle cell anemia, transient ischemic attacks (TIA's), and carotid and other artery diseases.

In general, as exposure to each factor increases, so does the risk of disease. When multiple factors are present, risk increases progressively.

The scientific study of other potential risk factors for cardiovascular disease continues. In addition to the well-established risk factors mentioned above, which will be further discussed on the following pages, there are other factors that singly or in certain combinations appear to place individuals at increased risk for cardiovascular disease. These include certain fractions of blood cholesterol, triglycerides, lipoprotein (a), C-reactive protein, homocysteine, abnormalities in coagulation factors, and metabolic syndrome. As yet, no population-based data are available to assess the extent of these potential risk factors in Alaska.

RISK ASSESSMENT TOOLS

These websites are useful to enter an individual's health data to determine stroke and heart disease risk.

American Heart Association *My Life Check*: http://mylifecheck.heart.org/

This assessment test is based on the knowledge and expertise of The American Heart Association. This assessment will help determine what simple steps an individual may need to take to improve heart health and quality of life.

Framingham Heart Attack Risk Assessment Tool:
http://hp2010.nhlbihin.net/atpiii/calculator.asp

Framingham Personal Stroke Risk Estimation Tool:
http://www.westernstroke.org/index.php?header_name=stroke_tools.gif&main=stroke_tools.php

High blood pressure is a major independent risk factor for heart disease and the single most important risk factor for stroke.

RISK FACTORS

UN-MODIFIABLE CARDIOVASCULAR DISEASE RISK FACTORS [1,10]

- Increasing age
- Gender (male)
- Family history, heredity
- Ethnicity
- Race

MODIFIABLE CARDIOVASCULAR DISEASE RISK FACTORS [1,10]

(can be changed, treated or controlled)

- High blood pressure (hypertension)
- High total cholesterol, High LDL cholesterol
- Low HDL cholesterol
- Elevated lipoprotein (a)[3]
- Elevated serum triglycerides[1]
- Diabetes
- Tobacco use, cigarette smoking, exposure to second-hand smoke[2]
- Physical inactivity
- Unhealthful diet
- Overweight/obesity
- Central or abdominal obesity[1]
- Insulin resistance[4]
- Glucose intolerance[3]
- Metabolic syndrome*[5]

  *Metabolic syndrome is present if three or more of the following signs occur together[5]:

  - Blood pressure equal to or higher than 130/85 mmHg
  - Fasting blood sugar (glucose) equal to or higher than 100 mg/dL
  - Large waist circumference (length around the waist):

    Men: 40 inches or more;

    Women: 35 inches or more
  - Low HDL cholesterol:

    Men: under 40 mg/dL;

    Women: under 50 mg/dL
  - Triglycerides equal to or higher than 150 mg/dL
- Hypercoagulable state[16,18]: an abnormally increased tendency toward blood clotting. Can be caused by the use of female hormones, post-surgical/post-operative period, pregnancy, cancer, lupus, elevated homocysteine level, and inherited protein deficiencies (including antithrombin III, factor V Leiden, protein S, protein C, and others).
- Excessive alcohol consumption[17]
- Sickle cell anemia[7]
- Anemia[18]
- Peripheral artery disease[7]
- Poorly controlled stress[3] or anger
- Type A personality[3]

MODIFIABLE CV RISK FACTORS *(CONT.)*

- Prothrombic factors (e.g., elevated fibrinogen level)[3]
- Elevated serum homocysteine[1]
- Inflammatory markers (e.g., C-reactive protein)[3]
- Left ventricular hypertrophy[3]
- Periodontal disease[8]
- Too little sleep (≤ 5-6 hours per night) or too much sleep (> 8-9 hours per night)[3]
- Sleep apnea[18]
- Socioeconomic factors (geographic location, low-income)
- Illicit drug use [cocaine, heroin, ketamine, marijuana, LSD, PCP, MDMA (ecstasy), amphetamines][6]

INDEPENDENT RISK FACTORS FOR STROKE[9]

- Hypertension
- Atrial fibrillation
- Cardiac valve abnormalities (e.g., mitral stenosis)
- Left atrial enlargement
- Myocardial disease
- Diabetes
- Cigarette smoking
- Elevated homocysteine level
- Obesity

MAJOR INDEPENDENT RISK FACTORS FOR CORONARY HEART DISEASE[10]

- Cigarette and tobacco smoke
- High blood cholesterol
- High blood pressure
- Physical inactivity
- Obesity
- Diabetes

STROKE SPECIFIC RISK FACTORS[9]

- Atrial fibrillation
- History of stroke or transient ischemic attack (TIA)
- Carotid artery disease, carotid stenosis [7]
- Heart disease (valve disease, rhythm disturbances, enlarged chambers, cardiomyopathy)
- History of migraine, migraine with aura[11]
- Depression[12]
- High red blood cell count[7]
- IV drug use[7]
- Binge drinking[7]
- Too little sleep (≤ 5-6 hours per night)[3]

TIAs – Stroke Warnings

Transient ischemic attacks, or TIAs, are brief episodes of stroke symptoms resulting from temporary interruptions of blood flow to the brain. TIAs can last anywhere from a few seconds up to 24 hours. Unlike actual strokes, TIAs do not kill brain cells, and therefore, do not result in permanent brain damage. However, they can be warning signs of an impending stroke.

MODIFIABLE RISK FACTORS

CIGARETTE SMOKING

Cigarette smoking is the leading preventable cause of death in the United States, worsening the risk of heart disease, stroke and peripheral vascular disease, as well as a range of cancers and other disorders. People who smoke cigars or pipes seem to have a higher risk of death from heart disease (and possibly stroke), but their risk is not as great as cigarette smokers'.

Tobacco exerts a powerful influence on a person's risk of heart disease and stroke in many ways, including acceleration of arterial plaque formation (a deposit of fatty material on the inner lining of an arterial wall) and promotion of plaque rupture and thrombosis. Smoking cigarettes increases the risk of heart disease and stroke, especially in people with multiple risk factors. The use of oral contraceptives combined with cigarette smoking greatly increases stroke risk. Smoking increases blood pressure, increases the tendency for blood to clot, decreases tolerance to exercise, and the carbon monoxide in cigarette smoking reduces the amount of oxygen the blood can carry including to the brain.

Exposure to other people's smoke (second hand smoke) increases the risk of heart disease even for non smokers. Breathing secondhand smoke for even a short time can have immediate adverse effects on the cardiovascular system and interferes with the normal functioning of the heart, blood, and vascular systems in ways that increase the risk of a heart attack. Nonsmokers who are exposed to secondhand smoke at home or at work increase their risk of developing heart disease by 25-30 percent.

Quitting smoking can be very difficult for long-time smokers, but quitting at any age reduces the risk of lung disease, heart disease, stroke, and a number of cancers. A person's risk of heart attack decreases soon after quitting, but never smoking is one of the best things a person can do to lower their risk.

Resources in Alaska include the **Tobacco Quit Line (1-800-QUIT-NOW)**, a toll-free hotline that provides live counseling and support.

More information about **tobacco use and quitting smoking** can be found at the Center for Disease Control and Prevention's tobacco intervention and prevention website, located online at: www.cdc.gov/tobacco/quit_smoking/index.htm.

HIGH BLOOD PRESSURE

Normal blood pressure is generally defined as a systolic pressure less than 120 millimeters of mercury (mm Hg) and a diastolic pressure less than 80 mm Hg. The risk of heart disease and stroke increases as blood pressure increases above these numbers. Above-normal blood pressure is generally called hypertension. Hypertension is a sustained elevated blood pressure level. It is a major independent risk factor for heart disease and is the single most important risk factor and the number one cause of stroke.

The specific categories of high blood pressure (hypertension) are as follows:

Blood Pressure Category	Systolic mm Hg (upper number)		Diastolic mm Hg (lower number)
Normal	less than 120	and	less than 80
Prehypertension	120 – 139	or	80 – 89
High Blood Pressure (Hypertension) Stage 1	140 – 159	or	90 – 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
Hypertensive Crisis* (Emergency care needed)	Higher than 180	or	Higher than 110

This chart reflects blood pressure categories defined by the American Heart Association.

* American Heart Association. Hypertensive Crisis: http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Hypertensive-Crisis_UCM_301782_Article.jsp

High blood pressure is known to accelerate the progression of arterial plaques. It also triggers the enlargement of the heart muscle, increasing demand on the coronary arteries. In most people, high blood pressure is a silent disease, and the cause is unknown. Appropriate treatment of hypertension reduces the risk of heart disease and stroke, but many people with hypertension are unable (for a variety of reasons) to keep their blood pressure within the normal range.

The first step to controlling high blood pressure is for each person to know his or her blood pressure numbers. Getting a blood pressure measurement at least every two years and seeking review by a medical professional for readings above normal is critical to diagnosing and controlling hypertension.

Treatment for elevated blood pressure usually begins with behavior changes including weight loss, regular physical activity, reducing dietary sugar and salt, discontinuing tobacco use and alcohol consumption, and reducing stress. Medications may be necessary if blood pressure remains elevated or does not respond to behavior changes.

For information on **high blood pressure** and resources to help prevent it, visit the Centers for Disease Control and Prevention's high blood pressure webpage, found online at: www.cdc.gov/bloodpressure.

DIABETES

Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia (high blood glucose) resulting from defects in insulin secretion, insulin action, or both. It is strongly associated with ischemic heart disease, stroke, and peripheral vascular disease.

Diabetes does not just affect the body's ability to use sugar, or glucose, but it also causes destructive changes in the blood vessels throughout the body, including the brain. Also, if blood glucose levels are high at the time of a stroke, then brain damage is usually more severe and extensive than when blood glucose is well-controlled.

Prolonged high blood glucose levels can lead to increased deposits of fatty materials on the insides of the blood vessel walls. These deposits may affect blood flow, increasing the chance of clogging and hardening of blood vessels (atherosclerosis). Other complications from diabetes can include blindness, kidney failure, and lower-extremity amputations.

Diabetes is the sixth leading cause of death in the United States. People with diabetes are two to three times more likely to develop stroke, and are at least twice as likely to have heart disease. They also commonly have hypertension and high cholesterol. Even when glucose levels are under control, diabetes increases the risk of heart disease and stroke, but the risks are even greater if blood sugar is not well controlled. At least 65 percent of people with diabetes die of some form of heart or blood vessel disease.

Diabetes has been shown to be a very important risk factor for heart disease among American Indians and Alaska Natives. People with diabetes have an increased risk for heart disease but can reduce their risk. Obesity and overweight can make diabetes more likely to develop. Persons who are obese or overweight should lose weight to keep blood sugar in control. Many obese and overweight people may have difficulty losing weight, but by losing even as few as 10 pounds, a person can lower their heart disease risk.

Source: U.S. Department of Health and Human Resources National Diabetes Information Clearinghouse (NDIC). www.diabetes.niddk.nih.gov

For more information on preventing and treating **diabetes**, visit the Centers for Disease Control and Prevention's Diabetes Public Health Resource website at: www.cdc.gov/diabetes/index.htm.

PREDIABETES

Prediabetes is a condition in which blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. Prediabetes is also called impaired fasting glucose or impaired glucose tolerance. Many people with prediabetes develop type 2 diabetes within 10 years. In addition, they are at risk for heart disease and stroke. With modest weight loss and moderate physical activity, people with prediabetes can delay or prevent type 2 diabetes and lower their risk of heart disease and stroke.

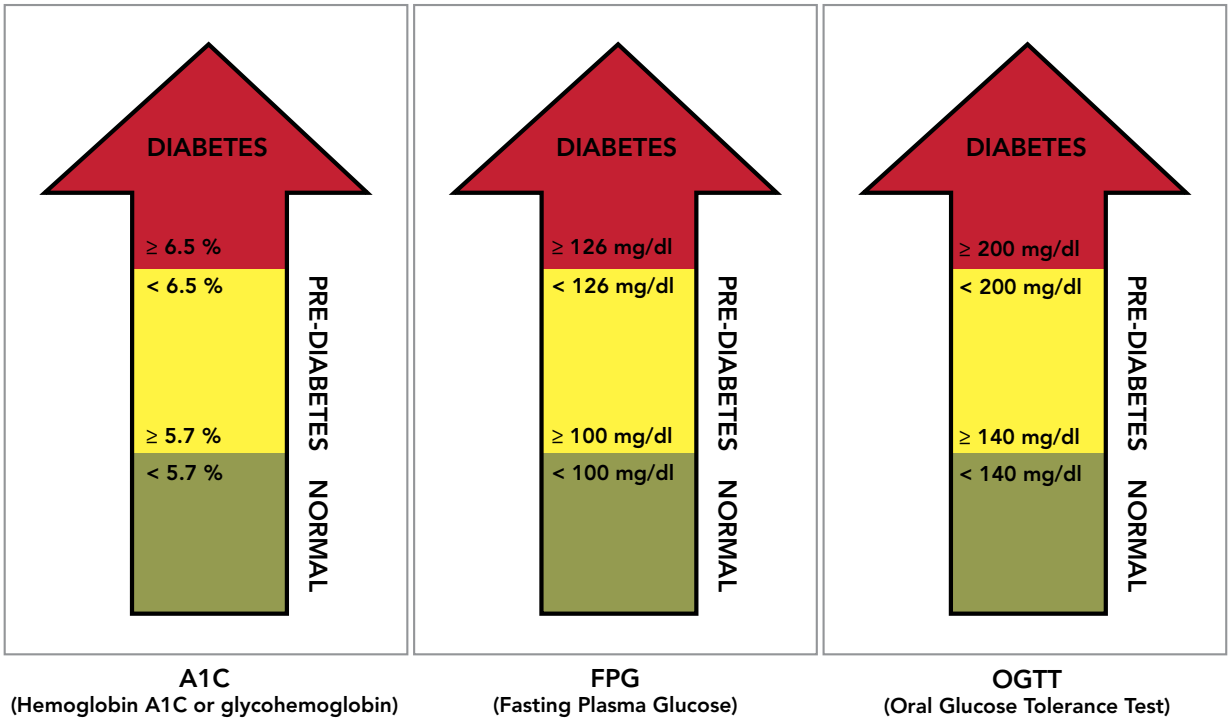
There are three different tests a health care provider can use to determine whether a person has prediabetes or diabetes:

- The A1C test
- The fasting plasma glucose test (FPG)
- The oral glucose tolerance test (OGTT)

The blood glucose levels measured after these tests determine whether the person has a normal metabolism, prediabetes, or diabetes.

If the blood glucose level is abnormal following the FPG, the person has impaired fasting glucose (IFG); if the blood glucose level is abnormal following the OGTT, the person has impaired glucose tolerance (IGT). Both are also known as prediabetes.

Figure 5. Diagnosing Diabetes and Prediabetes



Source: American Diabetes Association. Diagnosing Diabetes and Prediabetes

OVERWEIGHT AND OBESITY

Overweight and obesity are at epidemic proportions in the United States, with adverse consequences for health. Obesity in adults is generally defined as a body mass index (BMI) greater than or equal to 30 kg/m2. Overweight in adults is defined as a BMI of 25.0 to 29.9 kg/m2.

For more information on **overweight and obesity**, visit the Centers for Disease Control and Prevention website at: www.cdc.gov/obesity/index.html

Excess body weight is strongly associated with high blood pressure, defective metabolism of cholesterol and other serum lipids, insulin resistance, and diabetes. Most of the effect of overweight and obesity on the risk of heart disease and stroke is probably mediated through these factors, although other mechanisms that are less well understood may play a role. Visceral body fat found in the mid-section is especially problematic. Overweight and obese individuals have increased risk of high blood pressure, heart disease and stroke, not to mention type 2 diabetes, certain cancers, and arthritis.

Reductions in body fat and overall weight can best be realized through a combination of diet and physical activity so that a negative caloric balance occurs each day. Adults can see substantial health benefits from 150 minutes of moderate activity per week performed in bouts of at least 10 minutes at a time. Greater health benefits are experienced by increasing to 300 minutes per week or increasing intensity. Partnered with a balanced diet in which total caloric intake is less than what is expended through activity should result in weight loss over time. Even small changes in weight can lead to improved HDL, triglycerides, glucose, and blood pressure levels.

Source: Centers for Disease Control. 2008 Physical Activity Guidelines for Americans. Fact Sheet for Health Professionals on Physical Activity Guidelines for Adults.
http://www.cdc.gov/nccdphp/dnpa/physical/pdf/PA_Fact_Sheet_Adults.pdf

PHYSICAL INACTIVITY

Physical inactivity is strongly linked to heart disease, stroke, and many other adverse health outcomes. Optimal cardiovascular benefits from physical activity are achieved when the large muscle groups of the arms, legs and back are used steadily and rhythmically so that one's heart rate and breathing are significantly increased. But even less intense activity is beneficial, compared to a sedentary lifestyle. Much of the protective effect of physical activity is probably mediated through improvements in blood pressure and body weight, as well as alterations in lipid and carbohydrate metabolism. But routine physical activity also has direct effects on risk of heart disease and stroke, by improving arterial elasticity and helping the cells that line the inside of arteries to reduce the progression of atherosclerosis.

INADEQUATE NUTRITION

Inadequate nutrition contributes significantly to heart disease and stroke. Diet exerts complex effects on health, and is closely associated with other risk factors, such as high blood pressure, elevated blood cholesterol and obesity. An overall healthy eating pattern includes a variety of fruits, vegetables, grains, low-fat or nonfat dairy products, fish, legumes, poultry and lean meats. Total energy intake should match energy needs.

Foods high in saturated and trans fatty acids should be avoided, as should high alcohol intake (in excess of one drink per day on average for women or two drinks per day on average for men) and excess salt. The U.S. Dietary Guidelines recommend limiting sodium intake to less than 2,300 milligrams per day. The recommendation is 1,500 milligrams per day for people aged 51 and older, and anyone with high blood pressure, diabetes, and chronic kidney disease, and African Americans. Fish and other foods rich in omega-3 fatty acids should be encouraged, as should fruits and vegetables, especially cruciferous and green leafy vegetables. Measuring nutrition in surveys is often difficult. We are using consumption of fewer than five servings of fruits and vegetables in a day as an overall marker of an unhealthy diet.

HIGH BLOOD CHOLESTEROL

Cholesterol is a fatty, waxy substance that is found in every cell of the body, and flows through the body via the blood. It is made by the body and also acquired in the body, when certain foods are eaten. Cholesterol, in certain levels, is necessary for the normal and healthy functioning of the body. But high levels of cholesterol in the blood increase the risk of heart disease and stroke.

Cholesterol travels in the bloodstream by linking with other substances. It combines with either high-density lipoproteins (HDL) or low-density lipoproteins (LDL). HDL ("good cholesterol") transmits cholesterol to the liver for recycling or excretion from the body, thereby reducing the risk of heart disease and stroke. LDL ("bad cholesterol") carries cholesterol from the liver and intestines throughout the body. When levels of LDL particles are high, they can accumulate within the walls of critical arteries, stimulating an inflammatory process that leads to the growth of atherosclerotic plaques. Over time these plaques can rupture, triggering a blood clot that obstructs the flow of blood.

Like high blood pressure, high cholesterol is dangerous because there are often no noticeable symptoms. As a result, many people are never tested and do not know they have high cholesterol levels. In healthy adults, blood cholesterol levels should be checked at least every five years.

Elevated levels of LDL cholesterol and triglycerides should be treated with lifestyle modifications, and in some cases, cholesterol reducing medication. Lifestyle modifications include eating a diet low in saturated

For more information about **high cholesterol**, visit the Centers for Disease Control and Prevention website at: http://www.cdc.gov/cholesterol/.

fat, trans fats and dietary cholesterol, eating a diet high in fiber and "good" fats, increasing physical activity, decreasing alcohol intake, and maintaining a healthy weight.

ATRIAL FIBRILLATION

Atrial fibrillation (A-fib or AF) is an irregular and often rapid heart rate that occurs in an estimated two million Americans. During atrial fibrillation, the heart's two upper chambers (the atria) fibrillate; that is, beat chaotically, irregularly, and out of coordination with the two lower chambers (the ventricles) of the heart. Because the atria quiver, they never squeeze completely, leaving blood in the upper chambers and causing poor blood flow to the rest of the body. The blood left behind can pool, potentially causing blood clots to form in the atria. If a blood clot forms in the atria, it can break off or be dislodged and then pumped out of the heart to the brain, blocking off the blood supply to an artery in the brain, causing a stroke. This type of stroke is called an embolic stroke.

To learn more about **Atrial Fibrillation** and related medications and treatments, visit the American Heart Association websites at: www.strokeassociation.org or www.heart.org

Untreated A-fib causes around 15 percent of strokes and increases the risk approximately five-fold. Symptoms most commonly include fatigue, lightheadedness, shortness of breath, and a pounding sensation in the chest, but some people feel nothing.

Sometimes the cause of atrial fibrillation is unknown, but at other times, it is the result of damage to the heart's electrical system from other conditions, such as longstanding, uncontrolled high blood pressure or artery disease. A-fib is also the most common complication after heart surgery.

Once diagnosed, there are a variety of drug treatments for A-fib including those that try to slow the heartbeat, thin the blood, or return the heart to normal rhythm. Patients whose heart rates cannot be controlled with drugs may also receive targeted radiofrequency treatment that attempts to correct the misfiring electrical signals within the atrio-ventricular node of the heart.

Usually, the most serious risk from A-fib is that it can lead to other medical problems, including stroke, heart failure, chronic fatigue, additional heart rhythm problems, and inconsistent blood supply.

Sources: American Heart Association. Why Atrial Fibrillation (AF or AFib) Matters.
http://www.heart.org/HEARTORG/Conditions/Arrhythmia/AboutArrhythmia/Why-Atrial-Fibrillation-AF-or-AFib-Matters_UCM_423776_Article.jsp

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http://www.mayoclinic.com/health/atrial-fibrillation/DS00291

StopAfib.org.
http://www.stopafib.org

DRUG AND ALCOHOL ABUSE

Consuming more than recommended amounts of alcohol can raise blood pressure and lead to heart disease and stroke. Alcohol consumption also increases caloric intake which can lead to overweight and obesity.

Intravenous drug abuse can lead to infection of the heart's lining or valves (endocarditis) and stroke. Amphetamine and cocaine use has been linked to heart attacks and strokes. Marijuana use can increase blood pressure which can also lead to heart attack and stroke.

Source: American Heart Association. Cocaine, Marijuana and Other Drugs and Heart Disease. http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/Cocaine-Marijuana-and-Other-Drugs-and-Heart-Disease_UCM_428537_Article.jsp

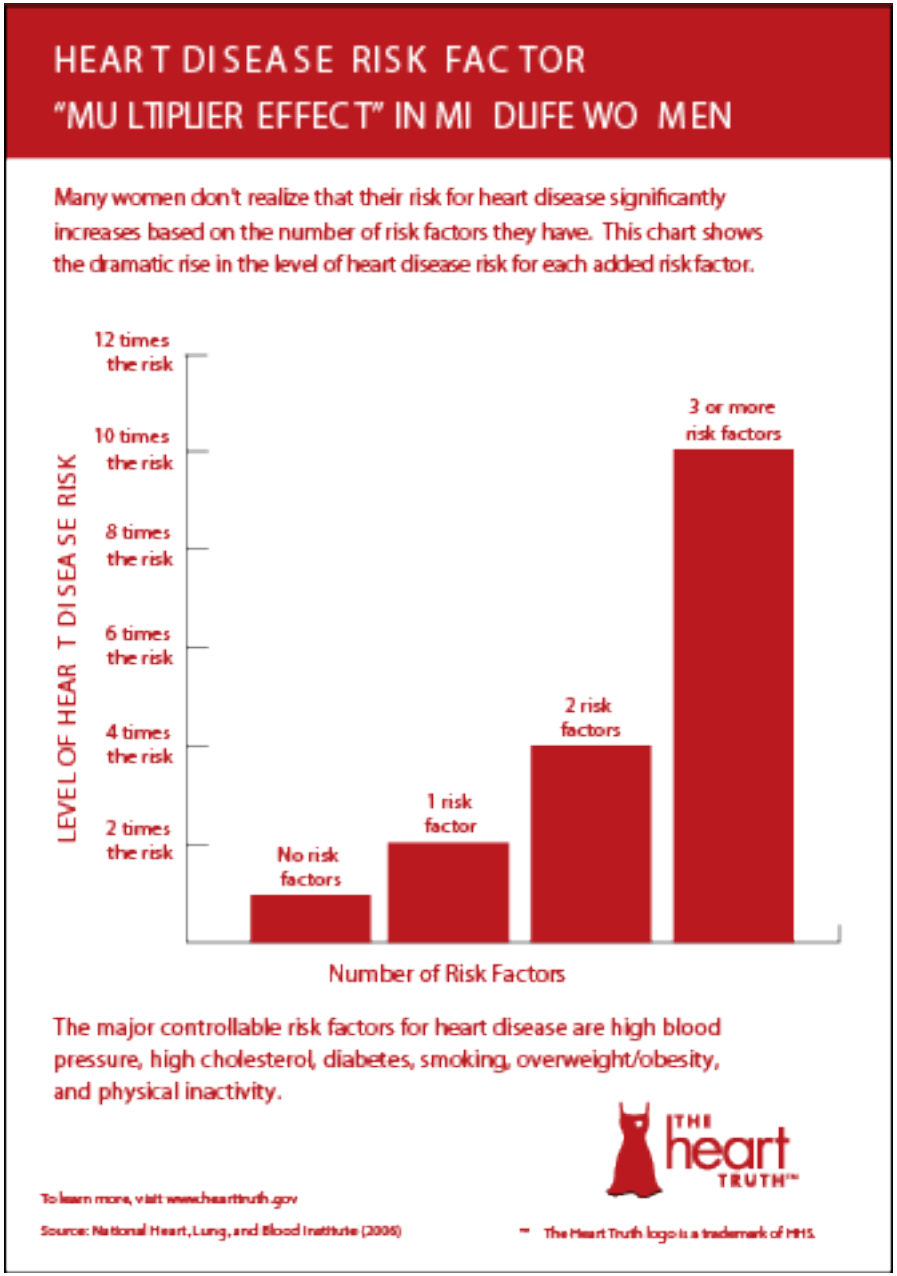
For more information about the damaging effect of **recreational drugs** on heart health, go to the American Heart Association website at: http://americanheart.org

MULTIPLE RISK FACTORS

Heart Disease Risk Factors, the Multiplier Effect:

- One risk factor doubles heart disease risk.
- Two risk factors quadruples heart disease risk.
- Three or more risk factors can increase heart disease risk more than tenfold.
- By doing just four things: eating right, being physically active, not smoking, and keeping a healthy weight, you can lower the risk of heart disease by as much as 82 percent.

It is an unfortunate fact that many adults possess not one, but many of the heart disease and stroke risk factors described in the previous sections. Compared to those with no risk factors or those with only one, individuals with multiple risk factors have the greatest risk for heart disease and stroke. Results from one study showed that men who reach 50 years of age without any of the following risk factors: high total cholesterol, high blood pressure, diabetes, and smoking, have a lifetime risk of cardiovascular disease of only five percent. In contrast, those who have two or more of those risk factors by age 50 have a lifetime risk of nearly 70 percent. Individuals with multiple risk factors require the most urgent clinical and public health interventions to prevent morbidity and premature mortality related to heart disease and stroke.



CARDIOVASCULAR PROTECTIVE FACTORS

Cardiovascular protective factors are approaches that help decrease the likelihood of developing heart diseases or stroke, while cardiovascular risk factors increase the potential to develop these diseases. Protective factors are often the flip side of the risk factors. Emphasizing the positive protective factors and not the negative risk factors can lead to better outcomes.

- Not smoking
- Normal blood pressure
- Normal blood glucose
- Normal LDL cholesterol
- Normal or high HDL Cholesterol
- Moderate physical activity
- Maintaining a healthy weight (ideal body mass index)
- Premenopausal
- Higher level of Vitamin D (stroke protective)[13]
- Adequate levels of Vitamins B2, B6, B12, and folic acid[19]
- Reduced salt/sodium diet
- Moderate alcohol intake[17]
- Dark chocolate[14]
- Healthy diet/Mediterranean diet[15]
- An excellent intake of omega-3 fatty acids
- Diet rich in fruits and vegetables
- Dietary fiber
- Low intake of sugar
- Low intake of saturated fats and trans fats
- B-complex vitamins, essential minerals, and antioxidant phytonutrients

AMERICAN HEART ASSOCIATION DIETARY AND LIFESTYLE GUIDELINES

GENERAL RECOMMENDATIONS

- Balance calorie intake and physical activity to achieve or maintain a healthy body weight. (Controlling weight, quitting smoking, and exercising regularly are essential companions of any diet program. Try to get at least 30 minutes, preferably 60-90 minutes, of exercise daily.)

American Heart Association Dietary adn Lifestyle Guidelines (cont'd)

- Eat a diet rich in a variety of vegetables and fruits. Vegetables and fruits that are deeply colored (such as spinach, carrots, peaches, and berries) are especially recommended as they have the highest micronutrient content.
- Choose whole-grain, high-fiber foods. These include fruits, vegetables, and legumes (beans). Good whole grain choices include whole wheat, oats/oatmeal, rye, barley, brown rice, buckwheat, bulgur, millet, and quinoa.
- Eat fish, especially oily fish, at least twice a week (about eight ounces each week). Oily fish such as salmon, mackerel, and sardines are rich in the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Consumption of these fatty acids is linked to reduced risk of sudden death and death from coronary artery disease.
- Get at least five to ten percent of daily calories from omega-6 fatty acids, which are found in vegetable oils such as sunflower, safflower, corn, and soybean as well as nuts and seeds.
- Limit daily intake of saturated fat (found mostly in animal products) to less than seven percent of total calories, trans fat (found in hydrogenated fats, commercially baked products, and many fast foods) to less than one percent of total calories, and cholesterol (found in eggs, dairy products, meat, poultry, fish, shellfish) to less than 300 milligrams per day. Choose lean meats and vegetable alternatives (such as soy). Select fat-free and low-fat dairy products. Grill, bake, or broil fish, meat, and skinless poultry.

- Use little or no salt in your foods. Reduce or avoid processed foods that are high in sodium (salt). Reducing salt can lower blood pressure and decrease the risk of heart disease and heart failure.
- Cut down on beverages and foods that contain added sugars (corn syrups, sucrose, glucose, fructose, maltrose, dextrose, concentrated fruit juice, honey).
- If you consume alcohol, do so in moderation. The AHA recommends limiting alcohol to no more than two drinks per day for men and one drink per day for women.
- People with existing heart disease should consider taking omega-3 fatty acid supplements (850-1,000 mg/day of EPA and DHA). For people with high triglyceride levels, higher doses (two to four grams per day) may be appropriate. The AHA recommends against taking antioxidant vitamin supplements (C, E, beta-carotene) or folic acid supplements for the prevention of heart disease.

HEALTH BEHAVIOR CHANGE AND HEALTH PROVIDER ADVICE

There are many real and perceived barriers to making the kinds of lifestyle changes that could reduce one's risk of heart disease and stroke. Health risk behaviors, such as smoking, eating too much fat and sugar, eating too few vegetables and fruits, and avoiding exercise, are often formed over one's lifetime and such behavioral patterns can be difficult to alter. Quitting smoking is a difficult process and can take numerous attempts before one is successful. Changes to one's diet or exercise routine often impact not just that person but also their family members, who may or may not be supportive. Our cities and towns have been designed to provide us with limitless access to food, while at the same time discouraging us from walking or biking to and from work and school.

It is within this context that our public health messages encouraging behavior change exist. To increase the likelihood that such messages are heard and adopted, it is important that they are delivered by sources seen as credible and trustworthy. Health care providers can be an ideal source for such messages, particularly for those already made aware of their health issues such as hypertension and hyperlipidemia. Providers' advice and encouragement to lose weight, quit smoking, become more physically active, etc., can have a priming effect on subsequent public health messages that those patients will encounter, increasing the chances that lifestyle changes are made.[57]

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AMERICAN COLLEGE OF CARDIOLOGY GUIDELINES FOR THE PREVENTION OF CARDIOVASCULAR DISEASE IN WOMEN

LIFESTYLE INTERVENTIONS

Cigarette smoking

- Women should be advised not to smoke and to avoid environmental tobacco smoke. Provide counseling at each encounter, nicotine replacement, and other pharmacotherapy as indicated in conjunction with a behavioral program or formal smoking cessation program (Class I; Level of Evidence B).

Physical activity

- Women should be advised to accumulate at least 150 minutes per week of moderate exercise, 75 minutes per week of vigorous exercise, or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. Aerobic activity should be performed in episodes of at least 10 minutes, preferably spread throughout the week (Class I; Level of Evidence B).
- Women should also be advised that additional cardiovascular benefits are provided by increasing moderate-intensity aerobic physical activity to five hours (300 minutes) per week, 2.5 hours per week of vigorous-intensity physical activity, or an equivalent combination of both (Class I; Level of Evidence B).
- Women should be advised to engage in muscle-strengthening activities that involve all major muscle groups performed on more than two days per week (Class I; Level of Evidence B).
- Women who need to lose weight or sustain weight loss should be advised to accumulate a minimum of 60 to 90 minutes of at least moderate-intensity physical activity (e.g., brisk walking) on most, and preferably all, days of the week (Class I; Level of Evidence B).

Cardiac rehabilitation

- A comprehensive cardiovascular disease (CVD) risk-reduction regimen such as cardiovascular or stroke rehabilitation or a physician-guided home- or community-based exercise training program should be recommended to women with a recent acute coronary syndrome or coronary revascularization, new-onset or chronic angina, recent cerebrovascular event, peripheral arterial disease (Class I; Level of Evidence A) or current/prior symptoms of heart failure and an LVEF of less than 35 percent (Class I; Level of Evidence B).

ACC Guidelines for the Prevention of Cardiovascular Disease in Women (cont'd)

Dietary intake

- Women should be advised to consume a diet rich in fruits and vegetables; to choose whole-grain, high-fiber foods; to consume fish, especially oily fish, at least twice a week; to limit intake of saturated fat, cholesterol, alcohol, sodium, and sugar; and avoid trans fatty acids. (Class I; Level of Evidence B).

  Note: Pregnant women should be counseled to avoid eating fish with the potential for the highest level of mercury contamination (e.g., shark, swordfish, king mackerel, or tile fish).

Weight maintenance/reduction

- Women should maintain or lose weight through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to maintain or achieve an appropriate body weight (e.g., BMI of less than 25 kg/m2 in U.S. women), waist size (e.g., less than 35 inches), or other target metric of obesity. (Class I; Level of Evidence B).

Omega-3 fatty acids

- Consumption of omega-3 fatty acids in the form of fish or in capsule form (e.g., EPA 1,800 mg/d) may be considered in women with hypercholesterolemia and/or hypertriglyceridemia for primary and secondary prevention (Class IIb; Level of Evidence B).

  Note: Fish oil dietary supplements may have widely variable amounts of EPA and DHA (likely the only active ingredients).

MAJOR RISK FACTOR INTERVENTIONS

Blood pressure: optimal level and lifestyle

- An optimal blood pressure of less than 120/80 mm Hg should be encouraged through lifestyle approaches such as weight control, increased physical activity, alcohol moderation, sodium restriction, and increased consumption of fruits, vegetables, and low-fat dairy products (Class I; Level of Evidence B).

Blood pressure: pharmacotherapy

- Pharmacotherapy is indicated when blood pressure is higher than 140/90 mm Hg (higher than 130/80 mm Hg in the setting of chronic kidney disease and diabetes mellitus).
- Thiazide diuretics should be part of the drug regimen for most patients unless contraindicated or if there are compelling indications for other agents in specific vascular diseases. Initial treatment of high-risk women with acute coronary syndrome or MI should be with beta-blockers and/or ACE inhibitors/ARBs, with addition of other drugs such as thiazides as needed to achieve goal blood pressure (Class I; Level of Evidence A).

ACC Guidelines for the Prevention of Cardiovascular Disease in Women (cont'd)

Lipid and lipoprotein levels: optimal levels and lifestyle

- The following levels of lipids and lipoproteins in women should be encouraged through lifestyle approaches: LDL-C <100 mg/dL, HDL-C >50 mg/dL, triglycerides <150 mg/dL, and non–HDL-C (total cholesterol minus HDL) <130 mg/dL (Class I; Level of Evidence B).

Lipids: pharmacotherapy for LDL-C lowering, high-risk women

- LDL-C–lowering drug therapy is recommended simultaneously with lifestyle therapy in women with CHD to achieve an LDL-C <100 mg/dL (Class I; Level of Evidence A) and is also indicated in women with other atherosclerotic CVD or diabetes mellitus or 10-year absolute risk greater than 20 percent (Class I; Level of Evidence B). A reduction to <70 mg/dL is reasonable in very-high-risk women (e.g., those with recent ACS or multiple poorly controlled cardiovascular risk factors) with CHD and may require an LDL-lowering drug combination (Class IIa; Level of Evidence B).

Lipids: pharmacotherapy for LDL-C lowering, other at-risk women

- LDL-C lowering with lifestyle therapy is useful if the LDL-C level is <130 mg/dL, there are multiple risk factors, and the 10-year absolute CHD risk is 10% to 20% (Class I; Level of Evidence B).
- LDL-C lowering is useful with lifestyle therapy if LDL-C level is >160 mg/dL and there are multiple risk factors, even if the 10-year absolute CHD risk is <10% (Class I; Level of Evidence B).
- LDL-C lowering with lifestyle therapy is useful if LDL level is >190 mg/dL, regardless of the presence or absence of other risk factors or CVD (Class I; Level of Evidence B).
- In women over 60 years of age and with an estimated CHD risk greater than 10 percent, statins could be considered if hsCRP is more than two mg/dL after lifestyle modification and no acute inflammatory process is present (Class IIb; Level of Evidence B).

Lipids: pharmacotherapy for low HDL-C or elevated non–HDL-C

- Niacin or fibrate therapy can be useful when HDL-C is low (less than 50 mg/dL) or non–HDL-C is elevated (less than 130 mg/dL) in high-risk women after the LDL-C goal is reached (Class IIb; Level of Evidence B).

Diabetes mellitus

- Lifestyle and pharmacotherapy can be useful in women with diabetes mellitus to achieve an HbA1C of less than seven percent if this can be accomplished without significant hypoglycemia (Class IIa; Level of Evidence B).

PREVENTIVE DRUG INTERVENTIONS

Aspirin: high-risk women

- Aspirin therapy (75–325 mg/day) should be used in women with CHD unless contraindicated (Class I; Level of Evidence A).
- Aspirin therapy (75–325 mg/day) is reasonable in women with diabetes mellitus unless contraindicated (Class IIa; Level of Evidence B).
- If a high-risk woman has an indication but is intolerant of aspirin therapy, clopidogrel should be substituted (Class I; Level of Evidence B).

Aspirin: other at-risk or healthy women

- Aspirin therapy can be useful in women over 65 years of age (81 milligrams daily or 100 milligrams every other day) if blood pressure is controlled and benefit for ischemic stroke and MI prevention is likely to outweigh the risk of gastrointestinal bleeding and hemorrhagic stroke (Class IIa; Level of Evidence B), and may be reasonable for women under 65 years of age for ischemic stroke prevention (Class IIb; Level of Evidence B).

Aspirin: atrial fibrillation

- Aspirin 75–325 milligrams should be used in women with chronic or paroxysmal atrial fibrillation with a contraindication to warfarin or at low risk of stroke (less than one percent per year or CHADS2 score of less than two) (Class I; Level of Evidence A).

Warfarin: atrial fibrillation

- For women with chronic or paroxysmal atrial fibrillation, warfarin should be used to maintain the INR at 2.0 to 3.0 unless they are considered to be at low risk for stroke (less than one percent per year or high risk of bleeding) (Class I; Level of Evidence A).

Dabigatran: atrial fibrillation

- Dabigatran is useful as an alternative to warfarin for the prevention of stroke and systemic thromboembolism in patients with paroxysmal to permanent AF and risk factors for stroke or systemic embolization who do not have a prosthetic heart valve or hemodynamically significant valve disease, severe renal failure (creatinine clearance 15 mL/min), or advanced liver disease (impaired baseline clotting function) (Class I; Level of Evidence B).

ACC Guidelines for the Prevention of Cardiovascular Disease in Women (cont'd)

Beta-Blockers

- Beta-Blockers should be used for up to 12 months (Class I; Level of Evidence A) or up to three years (Class I; Level of Evidence B) in all women after MI or ACS with normal left ventricular function unless contraindicated.
- Long-term beta-blocker therapy should be used indefinitely for women with left ventricular failure unless contraindications are present (Class I; Level of Evidence A).
- Long-term beta-blocker therapy may be considered in other women with coronary or vascular disease and normal left ventricular function (Class IIb; Level of Evidence C).

ACE inhibitors/ARBs

- ACE inhibitors should be used (unless contraindicated) in women after MI and in those with clinical evidence of heart failure, LVEF is less than 40 percent, or diabetes mellitus (Class I; Level of Evidence A).
- In women after MI and in those with clinical evidence of heart failure, an LVEF of less than 40 percent, or diabetes mellitus who are intolerant of ACE inhibitors, ARBs should be used instead (Class I; Level of Evidence B).

  Note: ACE inhibitors are contraindicated in pregnancy and ought to be used with caution in women who may become pregnant.

Aldosterone blockade

- Use of aldosterone blockade (e.g., spirololactone) after MI is indicated in women who do not have significant hypotension, renal dysfunction, or hyperkalemia who are already receiving therapeutic doses of an ACE inhibitor and beta-blocker and have LVEF of less than 40 percent with symptomatic heart failure (Class I; Level of Evidence B).

Abbreviations: LVEF: left ventricular ejection fraction, BMI: body mass index, EPA: eicosapentaenoic acid, DHA: docosahexaenoic acid, ACE: angiotensin-converting enzyme, ARB: angiotensin receptor blocker, LDL-C: low-density lipoprotein cholesterol, HDL-C: high-density lipoprotein cholesterol, CHD: coronary heart disease, CVD: cardiovascular disease, ACS: acute coronary syndrome, hsCRP: high-sensitivity C-reactive protein, HbA1C: hemoglobin A1C, MI: myocardial infarction, CHADS2: Congestive Heart Failure, Hypertension, Age, Diabetes, Prior Stroke Study, and INR: international normalized ratio.

Source: Mosca et al. Journal of the American College of Cardiology, Vol. 57, No. 12, 2011. Guidelines for the Prevention of CVD in Women—2011 Update March 22, 2011:1404–23. Available: http://content.onlinejacc.org/article.aspx?articleid=1144270

HEALTHY PEOPLE 2010 PROGRESS

Healthy People 2010 is a set of health objectives for the nation to achieve over the first decade of the new century. Available: http://www.healthypeople.gov/2010

Goal: Improve cardiovascular health and quality of life through the prevention, detection, and treatment of risk factors; early identification and treatment of heart attacks and strokes; and prevention of recurrent cardiovascular events.

PROGRESS MEETING THE NATIONAL HEALTHY PEOPLE 2010 OBJECTIVES FOR IMPROVING HEALTH: HEART DISEASE AND STROKE

The following tables summarize where Alaska is in its efforts to attain the Healthy People 2010 goal. Status includes whether an objective has been met or not, and whether conditions are improving, the same, or worsening.

HEART DISEASE

12-1. Reduce coronary heart disease deaths (measured per 100,000 people).

2000 Baseline	2010 Target	Current Data	Status
136.7*	120	85.1 (2008)	Met

*BRFSS question ceased to be asked in 2000.

12-2. Increase the proportion of adults aged 20 years and older who are aware of the early warning symptoms and signs of a heart attack and the importance of accessing rapid emergency care by calling 911.

2002 Baseline	2010 Target	Current Data	Status
8%	18% (10% over baseline)	Resurvey occurred in 2012	Unknown

12-3. Increase the proportion of eligible patients with heart attacks who receive timely artery-opening therapy from symptom onset.

2000 Baseline	2010 Target	Current Data	Status
n/a	n/a	n/a	Unknown

12-4. Increase the proportion of persons trained in cardiopulmonary resuscitation (CPR) in the past year.

2000 Baseline	2010 Target	Current Data	Status
n/a	n/a	n/a	Unknown

12-5. (Developmental) Increase the proportion of eligible persons with witnessed out-of-hospital cardiac arrest who receive their first therapeutic electrical shock within six minutes after collapse recognition.

2000 Baseline	2010 Target	Current Data	Status
n/a	n/a	n/a	Unknown

12-6. Reduce hospitalizations of older adults with congestive heart failure as the principal diagnosis.

2000 Baseline	2010 Target	Current Data	Status
n/a	n/a	n/a	Unknown

STROKE

12-7. Reduce stroke deaths (measured per 100,000 people).

2000 Baseline	2010 Target	Current Data	Status
75.4	48	43.4 (2008)	Met

12-8. Increase the proportion of adults who are aware of the early warning symptoms and signs of a stroke and the importance of accessing rapid emergency care by calling 911.

2000 Baseline	2010 Target	Current Data	Status
16%	28% (10% over baseline)	12%	Not met

BLOOD PRESSURE

12-9. Reduce the proportion of adults 18 years and older with high blood pressure.

2000 Baseline	2010 Target	Current Data	Status
21% (1999)	16%	26%	Not met

12-10. Increase the proportion of adults with high blood pressure whose blood pressure is under control (as measured by adults taking prescribed medications).

2000 Baseline	2010 Target	Current Data	Status
59% (2001)	50%	66.9% taking meds – no mention if BP controlled (2005 supplemental BRFSS)	Met

12-11. Increase the proportion of adults with high blood pressure who are taking action (for example, losing weight, increasing physical activity, or reducing sodium intake) to help control their blood pressure.

2000 Baseline	2010 Target	Current Data	Status
93% (2005 BRFSS)	95%	Unknown	Unknown

12-12. Increase the proportion of adults who have had their blood pressure measured within the preceding two years and can state whether their blood pressure was normal or high.

2000 Baseline	2010 Target	Current Data	Status
93% (1999 BRFSS)	95%	n/a*	Unknown

*BRFSS question ceased to be asked in 2000.

CHOLESTEROL

12-13. Reduce the mean total blood cholesterol levels among adults.

2000 Baseline	2010 Target	Current Data	Status
Unknown	Unknown	Unknown	Unknown

12-14. Reduce the proportion of adults with high total blood cholesterol levels.

2000 Baseline	2010 Target	Current Data	Status
29% (1999 BRFSS)	17%	35% (2009)	Not met

12-15. Increase the proportion of adults who have had their blood cholesterol checked within the preceding five years.

2000 Baseline	2010 Target	Current Data	Status
63% (1999 BRFSS)	75%	71% (2009)	Not met

12-16. Increase the proportion of persons with coronary heart disease who have their LDL-cholesterol level treated to a goal of less than 100 mg/dL.

2000 Baseline	2010 Target	Current Data	Status
n/a	n/a	n/a	Unknown

BRFSS: Behavioral Risk Factor Surveillance Survey.

HEALTHY ALASKANS 2010
HEART DISEASE AND STROKE INDICATORS

HEALTH GOAL FOR THE YEAR 2010

Improve cardiovascular health and quality of life through the prevention, detection, and treatment of risk factors; early identification and treatment of heart attacks and strokes; and prevention of recurrent cardiovascular events.

	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target 2010
1	Reduce coronary heart disease (ICD-10: 120-125) deaths (per 100,000 population).	ABVS	186.4 (2000)	131.5 (1999)	120
	Alaska Native	ABVS		123.3 (1999)	120
2	Increase the proportion of adults aged 18 years and older who are aware of the early warning symptoms and signs of a heart attack and the importance of accessing rapid emergency care by calling 911.	BRFSS (potential)	Develop-mental	Develop-mental	10% over baseline
3	Reduce stroke deaths (per 100,000 population).	ABVS	61.8 (1999)	75.4 (1999)	60*
	Alaska Native	ABVS		82.5 (1999)	60*
4	Increase the proportion of adults aged 18 years and older who are aware of the early warning symptoms and signs of a stroke.	BRFSS (potential 2002)	Develop-mental	Develop-mental	10% over baseline
5	Reduce the proportion of adults 18 years and older with high blood pressure.	BRFSS	24% (1999)	21% (1999)	16%

	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target 2010
6	Increase the proportion of adults aged 18 years and older with high blood pressure whose blood pressure is under control (taking prescribed medicine).	BRFSS (potential)	18% (1988-94) NHANES	Develop-mental	50%
7	Increase the proportion of adults aged 18 and older who are taking action to help control their blood pressure (e.g., diet, exercise).	BRFSS (potential)	82% (1998) NHIS	Develop-mental	95%
8	Increase the proportion of adults aged 18 years and older who have had their blood pressure measured within the preceding two years.	BRFSS	95% (1999)	93% (1999)	95%
9	Reduce the proportion of adults aged 18 and older with high total blood cholesterol levels (240mg/dL or greater).	BRFSS	30% (1999)	29% (1999)	17%
10	Increase the proportion of adults aged 18 years and older who have had their blood cholesterol checked within the past five years.	BRFSS	69% (1999)	63% (1999)	75%
	Alaska Native	BRFSS		47% (1999)	75%
11	Increase the number of community based cardiovascular health screening and education programs	Health Fair Data Health Promotion		Develop-mental	

ABVS -Alaska Bureau of Vital Statistics BRFSS -Alaska Behavioral Risk Factor Surveillance System. All U.S. BRFSS data are age-adjusted to the 2000 population; the Alaska BRFSS data have not been age adjusted, so direct comparisons are not advised. NHANES - National Health and Nutrition Examination Survey NHIS - National Health Interview Survey.

* Revised 10/2/02.

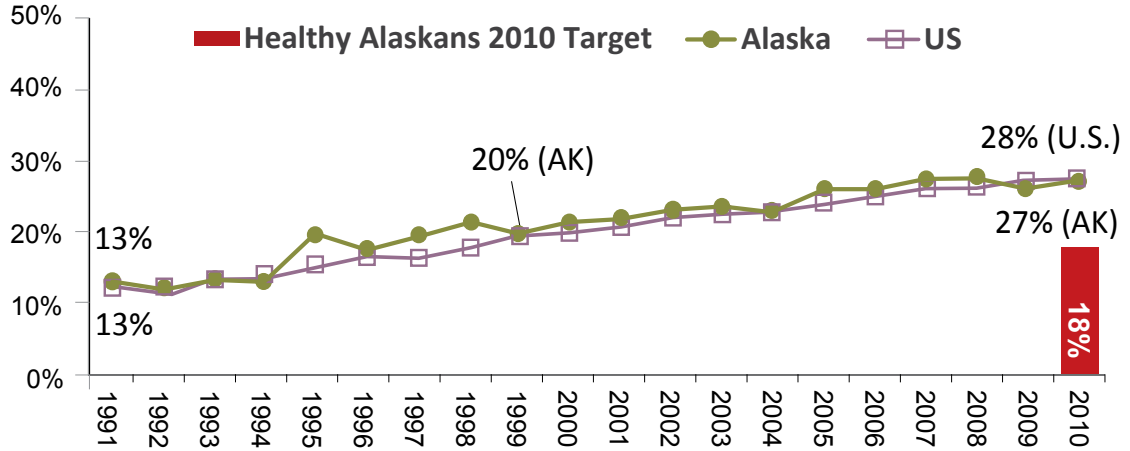
HEALTHY ALASKANS 2010 PROGRESS

HOW ARE WE DOING?

Healthy Alaskans 2010 was designed in 2002 as a framework for realizing the goal of healthy Alaskans in healthy communities. It consists of a set of objectives, indicators and targets for 2010 that, if achieved, would reflect improved health status since 2000.† The following limited collection of cardiovascular disease related indicator profiles provide a way to assess progress toward a subset of the Healthy Alaskans 2010 targets.

ADULT OBESITY

Figure 6. Percentage of Adults Who Are Obese (BMI >=30.0): Alaska and the U.S. Healthy Alaskans 2010 Monitoring Period



BMI calculated as self-reported weight in kilograms divided by self-reported height in meters squared.

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of Alaska adults who are obese has steadily increased over the past two decades, doubling between 1991 (13 percent) and 2010 (27 percent).

The Healthy Alaskans 2010 target for adult obesity prevalence is 18 percent or lower. Adult obesity prevalence has increased steadily from a baseline of 20 percent in 1999 to its current level of 27 percent in 2010. The Healthy Alaskans 2010 target of 18 percent has not been met.

More details on these indicators and progress on additional **Healthy Alaskans 2010** indicators may be obtained on the Alaska Department of Health and Social Services, Division of Public Health, Healthy Alaskans 2010 website: http://dhss.alaska.gov/dph/Director/Pages/ha2010/progress.aspx

Additional statistics on **obesity burden** are available at: http://dhss.alaska.gov/dph/Chronic/Pages/Obesity/resources.aspx

Additional statistics on overweight in Alaska are available at: http://dhss.alaska.gov/dph/Chronic/Pages/Obesity/resources.aspx

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

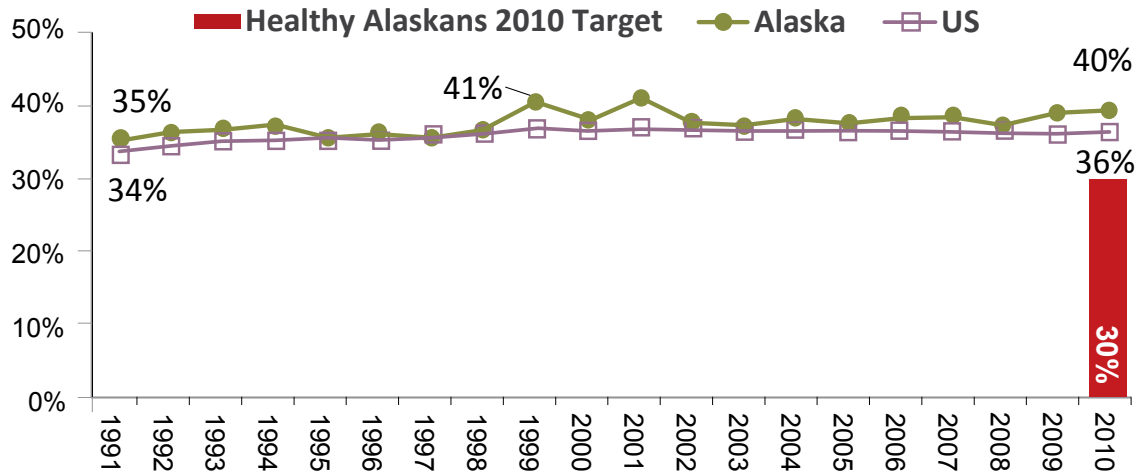
The Alaska adult obesity rate has paralleled the increase seen in adult obesity prevalence nationwide.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

The prevalence of obesity is higher for Alaska Natives/American Indians (31 percent) than White Alaskans (25 percent). Those living in rural Alaska (30 percent) are more likely to be obese than those in other regions of the states (25-26 percent). Women with low household incomes and with less than a high school education are more likely to be obese. (Source: 2009 BRFSS)

ADULT OVERWEIGHT

Figure 7. Percentage of Adults Who Are Overweight (25.0 <= BMI < 30.0): Alaska and the U.S. Healthy Alaskans 2010 Monitoring Period



BMI calculated as self-reported weight in kilograms divided by self-reported height in meters squared.

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of adult Alaskans who are overweight has increased over the past two decades, from 35 percent in 1991 to 40 percent in 2010.

The Healthy Alaskans 2010 target for adult overweight prevalence is 30% or lower. The prevalence of adult overweight in Alaska has remained relatively stable during the Healthy Alaskans 2010 monitoring period, from a baseline of 41% in 1999 to its current level of 40% in 2010. The Healthy Alaskans 2010 target of 30% has not been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

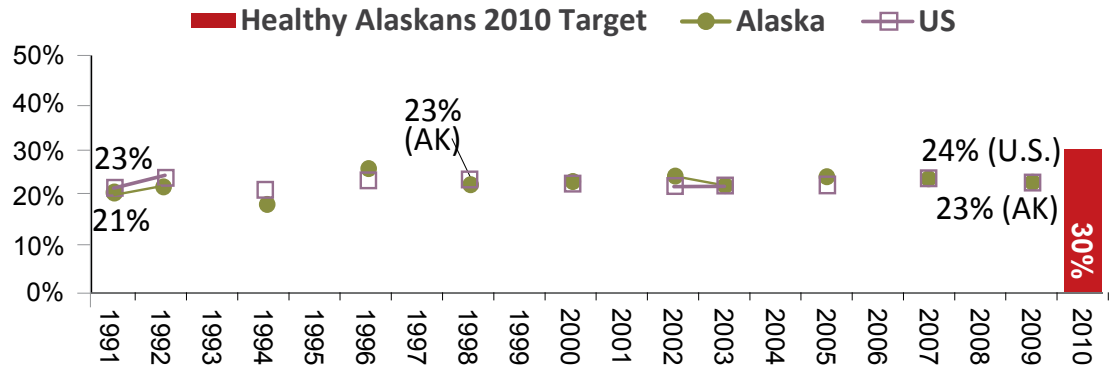
The rate of overweight among adult Alaskans has paralleled the rate seen in the U.S. overall.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

The prevalence of obesity is higher among men (43%) than among women (34%). There are no significant differences in overweight by race, region, or socioeconomic status. (Source: 2009 BRFSS)

ADULT FRUIT AND VEGETABLE CONSUMPTION

Figure 8. Percentage of Adults Who Meet Recommendations for Fruit and Vegetable Consumption, Healthy Alaskans 2010 Monitoring Period



Percentage of adults aged 18 years and older who report consuming at least five servings of fruits and vegetables daily.

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The Healthy Alaskans 2010 target for fruit and vegetable consumption is 30% or higher. The prevalence of this indicator has remained relatively stable at around 24% during the Healthy Alaskans 2010 monitoring period. The Healthy Alaskans 2010 target of 30% has not been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

The prevalence of meeting fruit and vegetable consumption recommendations among adults in Alaska has paralleled that seen in the U.S.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

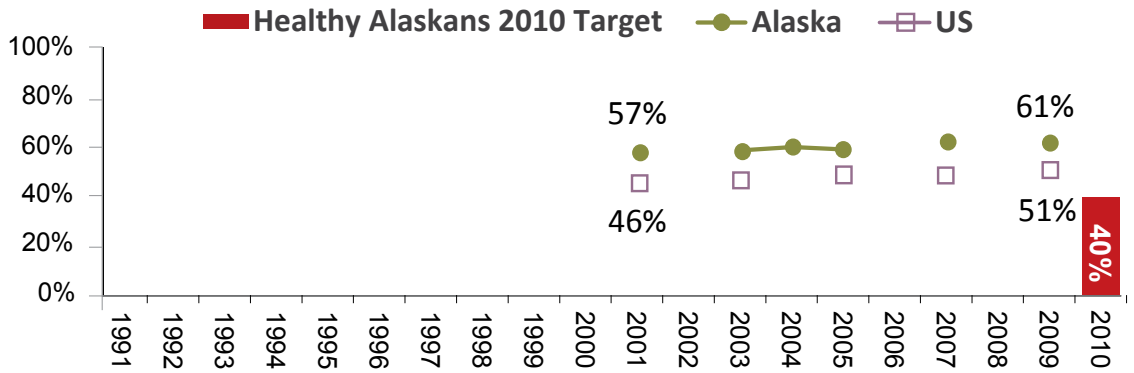
Women are more likely to meet the fruit and vegetable consumption recommendation (28% than are men (19%). Alaska Natives (14%) and residents of rural Alaska (13%) have a lower prevalence of meeting this recommendation in comparison with their peers (25% for non-Natives; range of 21% to 26% for other regions of the state). Fruit and vegetable consumption increases with education level, with only 10% of those with less than a high school education meeting the recommendation, but 28% of college graduates meeting it. (Source: 2009 BRFSS)

INDICATOR DEFINITION AND NOTES

This index is derived from the responses (in servings per day, week, month or year) to the following questions: (1) How often do you drink fruit juices such as orange, grapefruit, or tomato? (2) Not counting juice, how often do you eat fruit? (3) How often do you eat green salad? (4) How often to you eat potatoes not including French fries, fried potatoes, or potato chips? (5) How often do you eat carrots? (6) Not counting carrots, potatoes, or salad, how many servings of vegetables do you usually eat?

ADULT MODERATE PHYSICAL ACTIVITY

Figure 9. Percentage of Adults Who Meet Recommendations for Moderate Physical Activity, Healthy Alaskans 2010 Monitoring Period



Percentage of adults who report participating in moderate physical activity for 30 or more minutes 5 or more days per week (This indicator was not measured prior to 2001).

Additional statistics on levels of **physical activity in Alaska** are available at: http://dhss.alaska.gov/dph/Chronic/Pages/Obesity/resources.aspx

The percentage of adult Alaskans who meet the recommendations for moderate physical activity increased slightly over the past decade, from 57 percent in 2001 to 61 percent in 2009. Since the development of the Healthy Alaskans 2010 targets, the U.S. Department of Health and Human Services released its recommendations for physical activity levels among adults[2]. This 2008 guideline recommends adults obtain 150 minutes of at least moderate physical activity per week. The percentage of adult Alaskans meeting this recommendation has remained relatively stable at about 74 percent between 2001 and 2009.

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The Healthy Alaskans 2010 target for adult prevalence of meeting moderate physical activity recommendations is 40 percent or higher. The prevalence of meeting the moderate physical activity recommendations among adults in Alaska has increased slightly during the Healthy Alaskans 2010 monitoring period, from a baseline of 57 percent in 2001 to its current level of 61 percent. The Healthy Alaskans 2010 target of 40 percent has been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

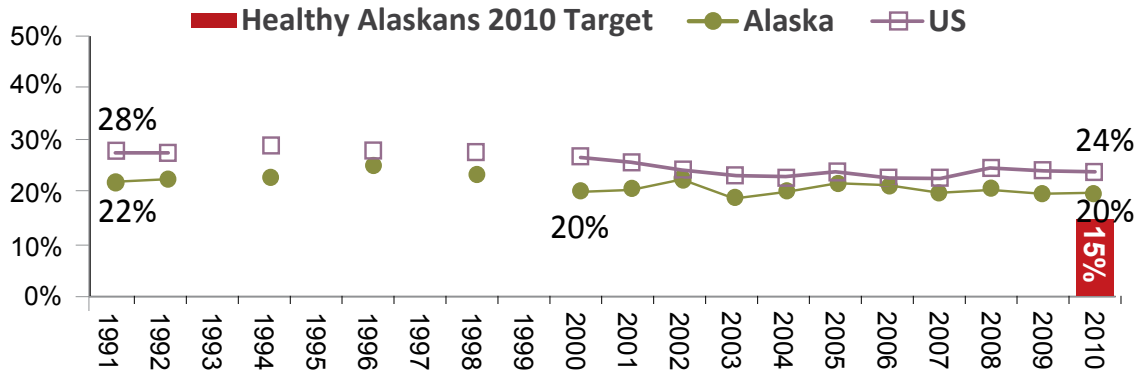
The rate of meeting moderate physical activity recommendations among adult Alaskans has consistently been above that seen in the U.S. overall. Similarly, the rate of meeting the newer 2008 overall physical activity recommendations has been consistently higher in Alaska than in the U.S.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

In Alaska, men (65 percent) are more likely to obtain the recommended level of moderate physical activity than are women (56 percent). There are no significant differences in the prevalence of meeting moderate physical activity recommendations by race, region, or socioeconomic status. (Source: 2009 BRFSS)

ADULT PHYSICAL INACTIVITY

Figure 10. Percentage of Adults Who Are Physically Inactive: Alaska and the U.S. Healthy Alaskans 2010 Monitoring Period



Percentage of adults aged 18 years and older who answer "No" to the following question: During the past month, other than your regular job, did you participate in any physical activities or exercise such as running, calisthenics, golf, gardening, or walking for exercise?

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of adult Alaskans who are physically inactive has decreased slightly over the past two decades, from 22% in 1991 to 20% in 2010.

The Healthy Alaskans 2010 target for adult inactivity prevalence is 15% or lower. The prevalence of being physically inactive among adults in Alaska has remained relatively stable during the Healthy Alaskans 2010 monitoring period. The Healthy Alaskans 2010 target of 15% has not been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

The rate of inactivity among adult Alaskans has consistently been below that seen in the U.S. overall.

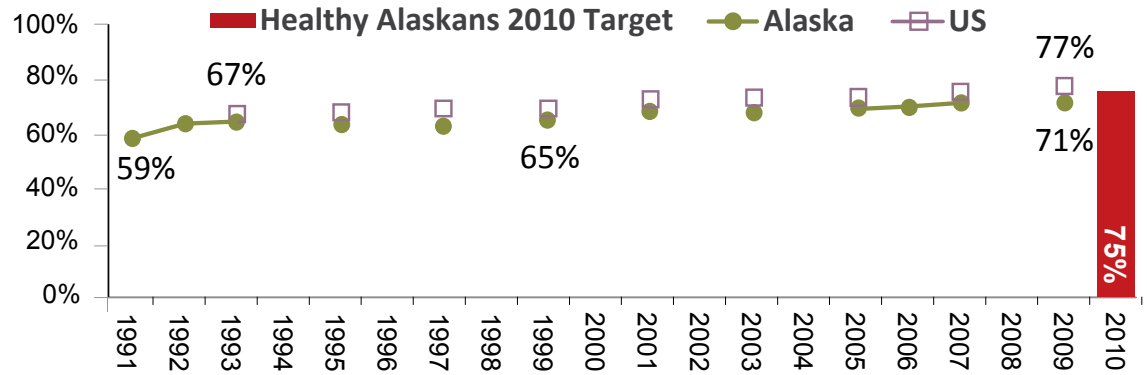
HOW ARE DIFFERENT POPULATIONS AFFECTED?

The prevalence of inactivity is higher among Alaska Native (26%) than non-Native Alaskans (18%). Adult Alaskans living in rural Alaska are more inactive (26%) than adults living in Anchorage and vicinity (19%), the Gulf Coast region (19%), or Southeast Alaska (16%). The prevalence of physical inactivity increases with decreasing levels of both income and education. (Source: 2009 BRFSS)

Additional statistics on **physical inactivity in Alaska** are available at: http://dhss.alaska.gov/dph/Chronic/Pages/Obesity/resources.aspx

ADULT CHOLESTEROL SCREENING

Figure 11. Percentage of Adults Who had Their Cholesterol Screened in Last Five Years: Alaska and the U.S., Healthy Alaskans 2010 Monitoring Period



Percentage of adults aged 18 years and older who answer: "Yes" to the question: Blood cholesterol is a fatty substance found in the blood. Have you ever had your blood cholesterol checked?, and "Within the past year", "Within the past two years", or "Within the past five years" to the following question: About how long has it been since you last had your blood cholesterol checked? (This indicator had been measured in odd years since 1991, as well as in 1992 and 2006).

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of Alaska adults who have had their blood cholesterol levels screened in the prior five years has increased over the past two decades from 59 percent in 1991 to 71 percent in 2009.

The Healthy Alaskans 2010 target for the prevalence of screening (in the past five years) for high cholesterol is 75 percent or higher. The percentage of Alaska adults who have had recent (within five years) blood cholesterol screening increased from 65 percent to 71 percent during the Healthy Alaskans 2010 monitoring period. The Healthy Alaskans 2010 target of 75 percent has not been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

The Alaska cholesterol screening rate is consistently slightly lower than the U.S. rate.

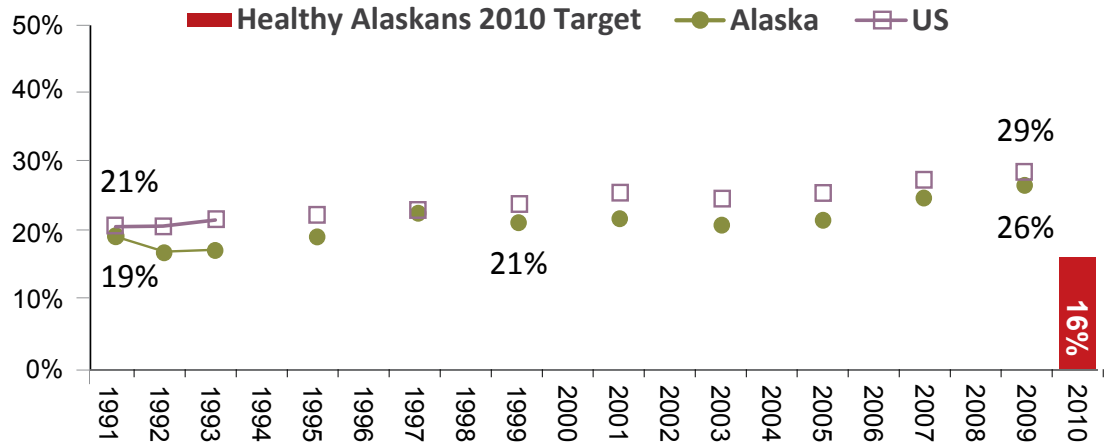
HOW ARE DIFFERENT POPULATIONS AFFECTED?

Alaska Natives (60%) and residents of rural Alaska (53%) are less likely to have had their cholesterol screened than non-Natives (73%) or residents of Alaska's other regions (68% to 75%), respectively.

Unemployed Alaskans (52%) are less likely to have been screened than those having other work status (72% to 82%). Alaskans with household incomes below the poverty threshold (42%) are less likely to be screened than are those meeting 200% or more of the poverty threshold (78%). Cholesterol screening also increases with education level, from 56% for those with less than a high school education to 85% among college graduates. (Source: 2009 BRFSS)

ADULT HIGH BLOOD PRESSURE

Figure 12. Percentage of Adults with High Blood Pressure: Alaska and the U.S. Healthy Alaskans 2010 Monitoring Period



Percentage of adults aged 18 years and older who answer "Yes" to the following question: Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? Note that this excludes women who report a history of pregnancy-related high blood pressure.

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of Alaska adults who were told by their healthcare provider that they had high blood pressure has increased over the past two decades from 19% in 1991 to 26% in 2009.

The Healthy Alaskans 2010 target for the prevalence of high blood pressure is 16% or lower. The percentage of Alaska adults who were told by their healthcare provider that they had high blood pressure increased from 21% to 26% during the Healthy Alaskans 2010 monitoring period. The Healthy Alaskans 2010 target of 16% has not been met.

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

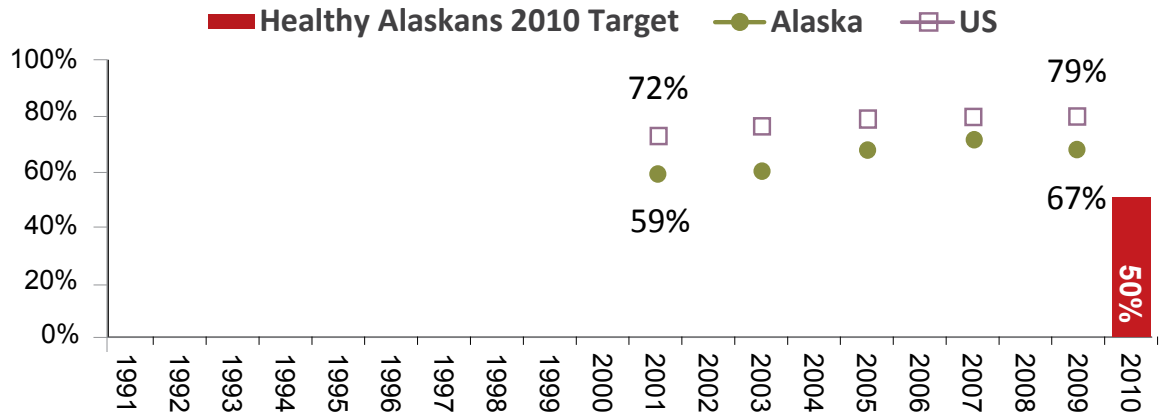
The prevalence of high blood pressure is consistently slightly lower in Alaska compared to the U.S.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

There are no significant differences in high blood pressure prevalence by race, region, education, or income level. (Source: 2009 BRFSS)

ADULT HIGH BLOOD PRESSURE, CONTROLLED

Figure 13. Percentage of Adults with Controlled High Blood Pressure: Alaska and the U.S., Healthy Alaskans 2010 Monitoring Period



Percentage of adults aged 18 years and older with high blood pressure who answer "Yes" to the following question: Are you currently taking medicine for your high blood pressure? High blood pressure is indicated by the answering "Yes" to the following question: Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? Note that this excludes women who report a history of pregnancy-related high blood pressure. (This indicator was not measured prior to 2001.)

HOW IS ALASKA DOING RELATIVE TO THE HEALTHY ALASKANS 2010 TARGET?

The percentage of adults with high blood pressure who are taking their medications has increased over the past decade from 59 percent in 2001 to 67 percent in 2009.

The Healthy Alaskans 2010 target for the prevalence of controlled high blood pressure is 50 percent or percent to 67 percent during the Healthy Alaskans 2010 monitoring period. The Healthy Alaskans 2010 target of 50 percent has been met.

(Note: The goal was developed before good baseline data for Alaska had been collected. Further, national statistics at the time calculated a much lower percentage with 18% of adults with high blood pressure taking their medication from 1988 to 1994.)

HOW DOES ALASKA COMPARE WITH THE UNITED STATES?

Alaska consistently ranks behind the rest of the U.S. in percentage of adults with high blood pressure taking blood pressure medication, i.e., their high blood pressure is being controlled.

HOW ARE DIFFERENT POPULATIONS AFFECTED?

For the years 2001 to 2009, 69 percent of women with hypertension took medication to control their high blood pressure. In those same years, 62 percent of men with high blood pressure took their medication. There are no significant differences in controlled high blood pressure prevalence by race, region, education, or income level. (Source: 2009 BRFSS)

As the preceding graphs illustrate, with the exception of the Percentage of adults participating in moderate physical activity for 30 or more minutes five or more days per week and the percentage of adults with high blood pressure who are taking their medications, we have not met the Healthy Alaskans 2010 goals for these eight indicators. We still need to decrease the prevalence of adult high blood pressure, adult obesity, adult overweight, and physical inactivity. We also need to increase adult cholesterol screening and the adult consumption of fruits and vegetables. Strategies to improve these indicators are described in the Take Heart Alaska Goals, Objectives and Strategies for Alaska Heart Disease and Stroke Prevention.

The Healthy Alaskans 2020 indicators are currently being defined, but have not been published in time to be listed here. The national Healthy People 2020 Heart Disease and Stroke indicators are included as an appendix.

† AK Dept of Health and Social Services Steering Committee. Healthy Alaskans 2010 Volume 1: Targets for Improved Health. AK DHSS, Division of Public Health; April 2002; Juneau, AK

Sources:

Alaska Data: Alaska Behavioral Risk Factor Surveillance System, Alaska Department of Health and Social Services U.S. Data: Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention. Available at: http://dhss.alaska.gov/dph/Chronic/Pages/brfss/default.aspx

HEALTH EQUITY AND HEALTH DISPARITIES

Attaining health equity and eliminating health disparities are important goals for achieving optimal health for all Alaskans. Achieving health equity requires addressing unjust health disparities through the modifiable social and economic conditions that policies can shape. These conditions include education, income, geographic location, poverty, housing, discrimination due to sex, race, culture, or other social grouping, as well as access to safe places to play and be active, and the availability of transportation, good schools, tobacco-free environments and nutritious food. Health equity is aligned with the acknowledgement and respect of diversity within a community.

The social determinants of health (social, economic, physical, environmental, societal, cultural, and psychological conditions) can affect health outcomes. In Alaska, we have health disparities related to these circumstances. Here are some examples of cardiovascular disease related disparities in Alaska:

- Men have a higher heart disease mortality rate than women.
- American Indian/Alaska Native (AI/AN) men have the highest mortality rate due to heart disease and heart failure.
- AI/AN and Asian/Pacific Islander men have higher rates of stroke mortality than other racial groups.
- AI/AN women have a higher stroke mortality rate than all other groups.
- Women undergo fewer procedures for the treatment of a diagnosed case of ischemic heart disease.
- AI/AN and rural Alaskans are more likely to not have had a cholesterol screening in the past five years.
- Cholesterol screening within five years increases with age, income, and education.
- Percentage with high blood pressure increases with age and lower incomes.
- More men under age 65 have high blood pressure; more women over age 65 have high blood pressure.
- Alaskans with low socioeconomic status are less likely to have had their cholesterol screened and more likely to have high blood pressure.

Figure 14. Growing Communities: Social Determinants, Behavior, and Health

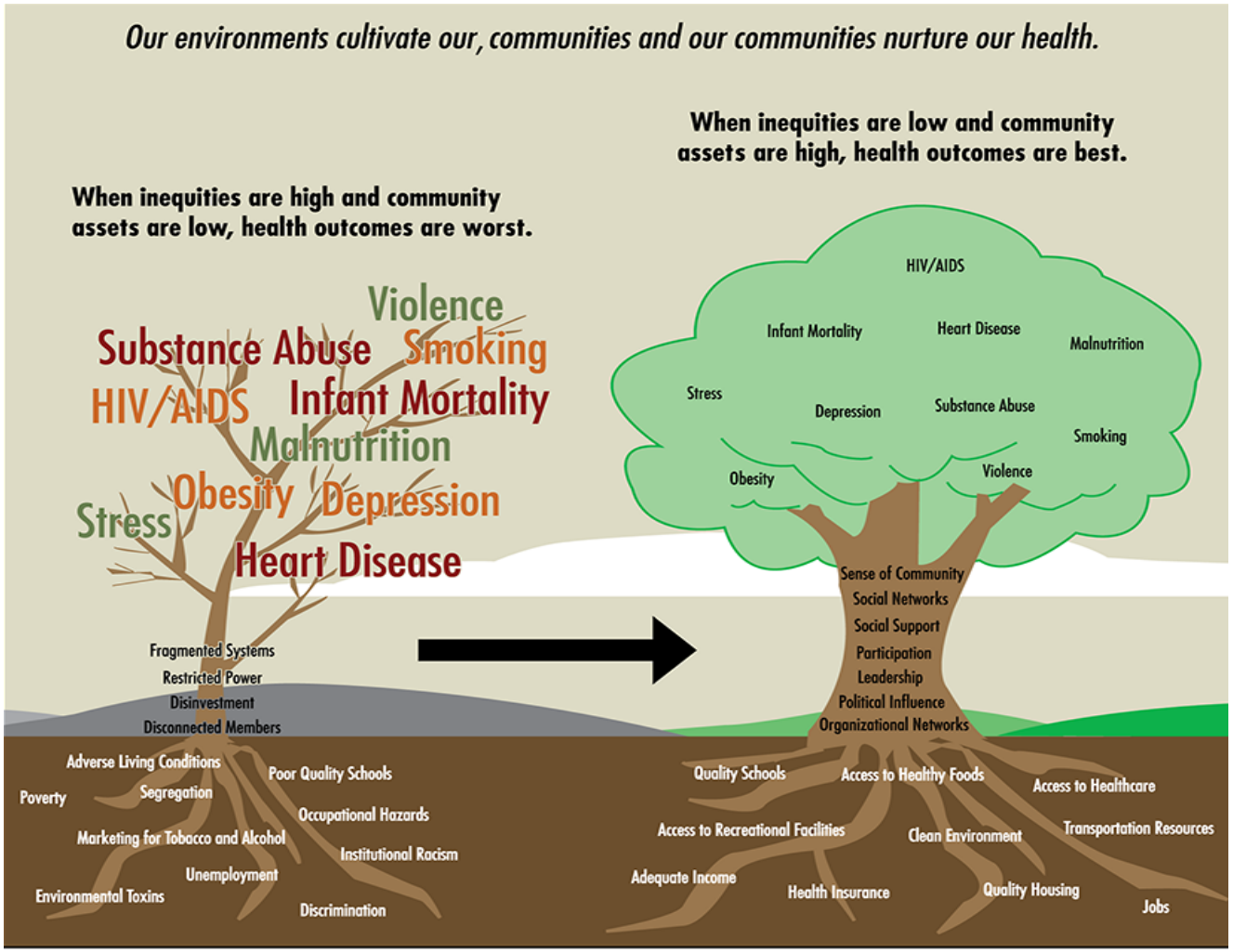


Figure14 adapted from : Anderson L, Scrimshaw S, Fullilove M, Fiedling J. The Community Guide's model for linking the social environment to health. American Journal of Preventive Medicine 2003;24(3S):12–20.

Marmot M, Wilkinson R. Social Determinants of Health. New York: Oxford University Press; 2005.

Wilkinson R, Marmot M. Social Determinants of Health: The Solid Facts. Copenhagan: World Health Organization; 2003.

Brennan Ramirez LK, Baker EA, Metzler M. Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2008. http://www.cdc.gov/healthycommunitiesprogram/tools/pdf/SDOH-workbook.pdf

To achieve **optimal health for Alaskans**, the goals, objectives, and strategies outlined in this plan will both engage in and support activities that promote health equity and respect for diversity. Identifying ways to modify proposed projects to ensure they will increase health equity and reduce health disparities and how to better understand the uneven impacts on various populations are sometimes difficult undertakings.

The **Pathways from Social Determinants to Health** model helps to illustrate how the social determinants of health (social, economic, physical, environmental, societal, cultural, and psychological conditions) can affect health outcomes.

Figure 15. Pathways from Social Determinants to Health

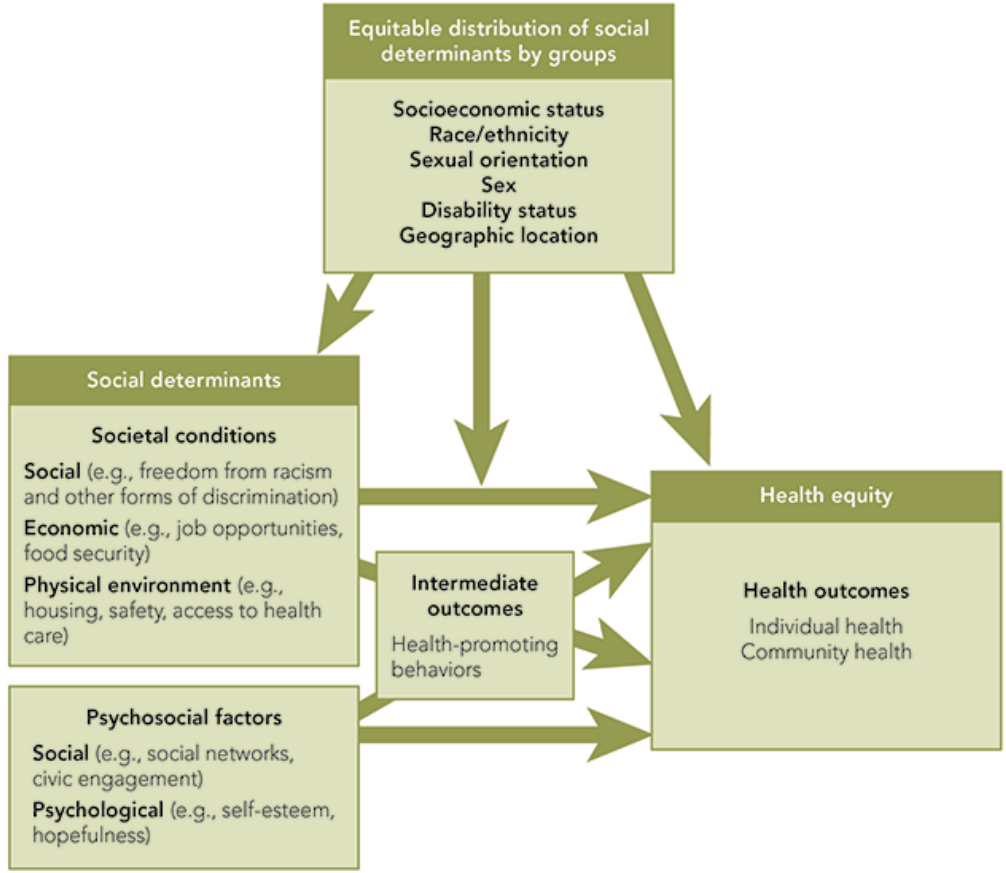


Figure 15 adapted from: Blue Cross and Blue Shield of Minnesota Foundation. Determinants and Critical Pathways Charts. Blue Cross and Blue Shield of Minnesota Foundation. http://www.bcbsmnfoundation.org/objects/Tier_4/mbc2_determinants_charts.pdf.

Anderson L, Scrimshaw S, Fullilove M, Fiedling J. The Community Guide's model for linking the social environment to health. American Journal of Preventive Medicine 2003;24(3S):12–20.

Brennan Ramirez LK, Baker EA, Metzler M. Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2008. http://www.cdc.gov/healthycommunitiesprogram/tools/pdf/SDOH-workbook.pdf

DEFINITIONS

Social Determinants of Health are the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. The conditions are social, economic, geographical, political, and physical environments in which people are born, grow, live, work, and age that lead to the creation of a fair and just society.

Health Equity is when every person has the opportunity to attain their full health potential and no one is disadvantaged from achieving this potential because of their social position or other socially determined circumstance.

Health Inequity is disparity in health or health care that is systemic and avoidable, and therefore considered unfair or unjust.

Health Disparity is a difference in the incidence, prevalence, mortality and burden of diseases and other adverse health conditions between distinct segments of the population, including differences that occur by age, sex, race or ethnicity, sexual orientation, education or income, disability, or geographic locale.

The **Health Equity Impact Review Guide** developed by the Washington State Department of Health and can help to examine proposals and identify actions to reduce health disparities and achieve health equity. Use this guide when developing heart disease and stroke prevention strategies to help ensure that the project plan addresses health equity and health disparities issues.

Follow this link for a copy of the Guide: http://here.doh.wa.gov/materials/equity-impact-guide

Sources:

Washington State Department of Health, Division of Prevention and Community Health , Office of Healthy Communities. Oct, 2012. The Health Equity Impact Review Guide. http://here.doh.wa.gov/materials/equity-impact-guide

Cardiovascular disease related disparities in Alaska from: Alaska Behavioral Risk Factor Surveillance System (BRFSS), Alaska Bureau of Vital Statistics, Alaska Hospital Discharge Data.

Centers for Disease Control and Prevention. Social Determinants of Health Definitions. http://www.cdc.gov/socialdeterminants/Definitions.html

MODELS

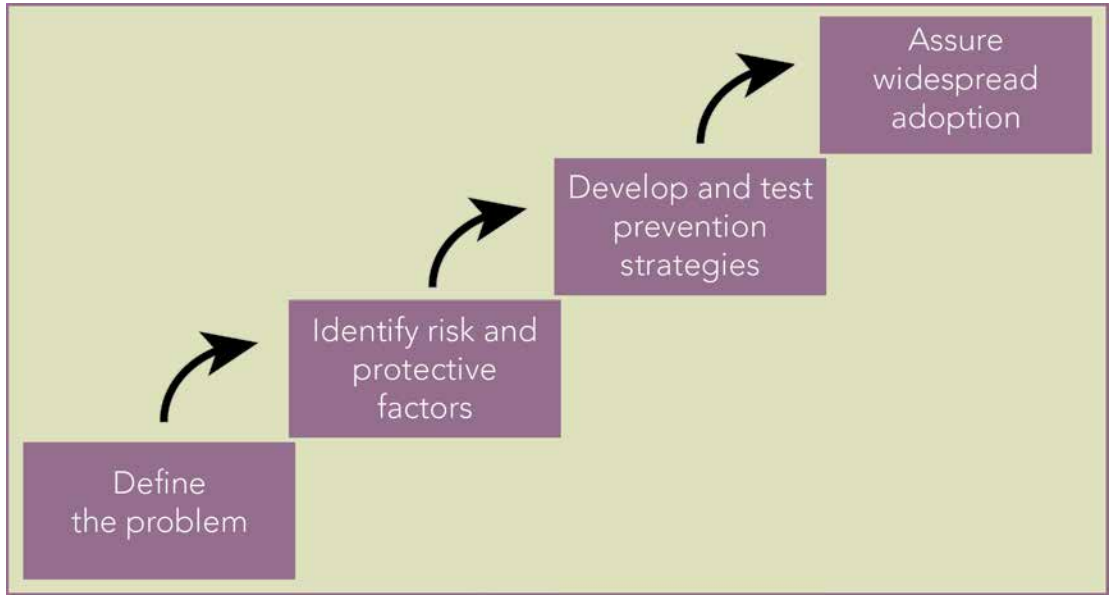
HOW DO WE FIT INTO THE BIGGER PICTURE?

Changes that we make or try to make must be viewed within the context of what happens around us. The ease or difficulty we encounter in making these changes is influenced by how we fit into the bigger picture. Scholars have developed models to illustrate how the different parts of the environment are related and how they influence each other. We can broaden the number of people we reach by using the concepts in these models. Change can best be affected by effectively planning, tailoring, and evaluating strategies to meet the needs of individuals and communities.

THE PUBLIC HEALTH MODEL

The Public Health model illustrates how to methodically address a public health problem. Public health focuses on the safety and well-being of entire populations with a goal to provide services that benefit the largest number of people.

Figure 16. The Public Health Model



STEP 1: DEFINE AND MONITOR THE PROBLEM

The first step is to understand the "who", "what", "when", "where" and "how" associated with it.

STEP 2: IDENTIFY RISK AND PROTECTIVE FACTORS

It is not enough to know the magnitude of a public health problem. It is important to understand what factors protect people or put them at risk for the public health problem.

STEP 3: DEVELOP AND TEST PREVENTION STRATEGIES

Research data and findings from needs assessments, community surveys, stakeholder interviews, and focus groups are useful for designing prevention programs. Using these data and findings is known as an evidence-based approach to program planning. Once programs are implemented, they are thoroughly evaluated to determine their effectiveness.

STEP 4: ASSURE WIDESPREAD ADOPTION

Once prevention programs have been proven effective, they must be implemented and adopted more broadly. Communities are encouraged to implement evidence-based programs and to evaluate the program's success. Dissemination techniques to promote widespread adoption include training, networking, technical assistance, and evaluation.

Adapted from:

Centers for Disease Control and Prevention. http://www.cdc.gov/

National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. http://www.cdc.gov/injury/

Division of Violence Prevention, Centers for Disease Control and Prevention. http://www.cdc.gov/violenceprevention/index.html

Injury Prevention & Control, Centers for Disease Control and Prevention. The Public Health Approach to Violence Prevention. http://www.cdc.gov/ViolencePrevention/overview/publichealthapproach.html

THE SOCIO-ECOLOGICAL MODEL

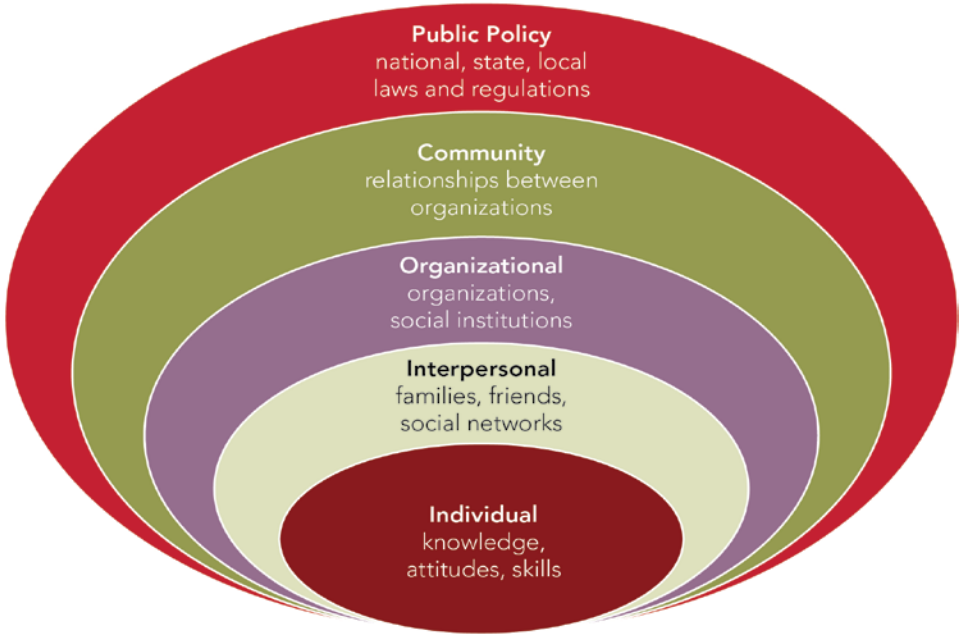
The socio-ecological model illustrates the relationship between the individual and their environment.

While individuals are responsible for instituting and maintaining the lifestyle changes necessary to reduce risk and improve health, individual behavior is determined to a large extent by social environment; e.g., community norms and values, regulations, and policies. To change behaviors, we must focus on all of the levels that influence an individual's behavior.

Barriers to healthy behaviors are shared among the community as a whole. As these barriers are lowered or removed, behavior change becomes more achievable and sustainable.

The most effective approach leading to healthy behaviors is a combination of the efforts at all levels: individual, interpersonal, organizational, community, and public policy.

Figure 17. The Socio-Ecological Model



Source: Connect the Dots. http://www.connectthedotsmovement.com/about/

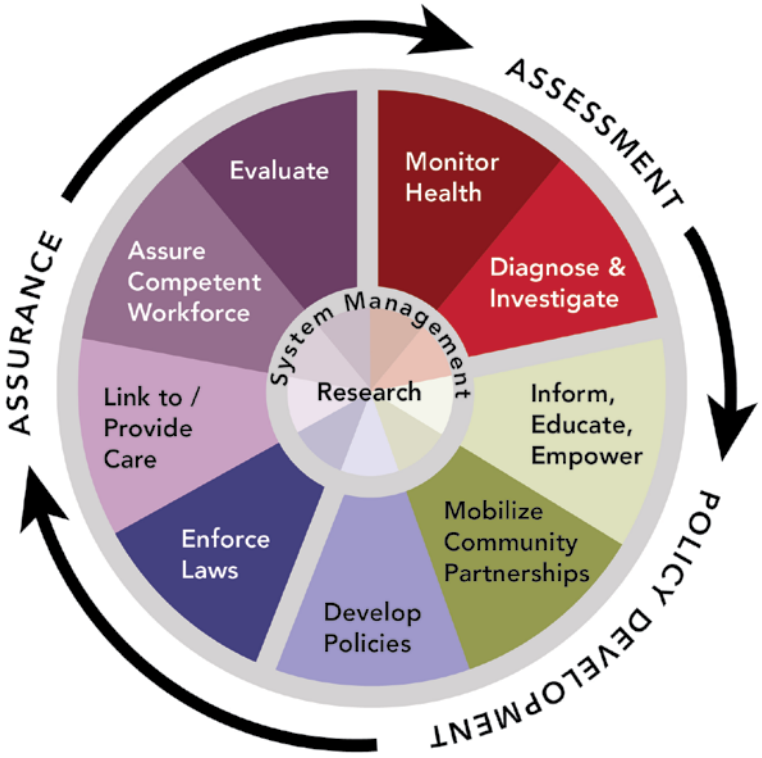
Figure 17 adapted from: Socio-Ecological Model – Looking Beyond the Individual.
http://www.balancedweightmanagement.com/TheSocio-EcologicalModel.htm

TEN ESSENTIAL PUBLIC HEALTH SERVICES

Ten Essential Public Health Services describe the public health activities that should be undertaken in all communities. The essential services provide a working definition of public health and a guiding framework for the responsibilities of public health systems. These components are necessary to fulfill the following 10 Essential Public Health Services:

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Ensure competent public and personal health care workforces.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research new insights and innovative solutions to health problems.

Figure 18. 10 Essential Public Health Services



Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Core Public Health Functions Steering Committee. National public health performance standards program: Orientation to the essential public health services [slides]. 1994. Available: http://www.cdc.gov/nphpsp/essentialservices.html

THE COMMUNITY ACTION MODEL

The community action model is a five-step, community-driven model designed to build communities' capacity to address health disparities through mobilization. Fundamental to the model is a critical analysis identifying the underlying social, economic, and environmental forces that create health and social inequities in a community. The goal is to provide communities with the framework necessary to acquire the skills and resources to plan, implement, and evaluate health-related actions and policies.

The **community action model** involves a five-step process:

(1) **skill-based training**, in which community advocates select an area of focus;

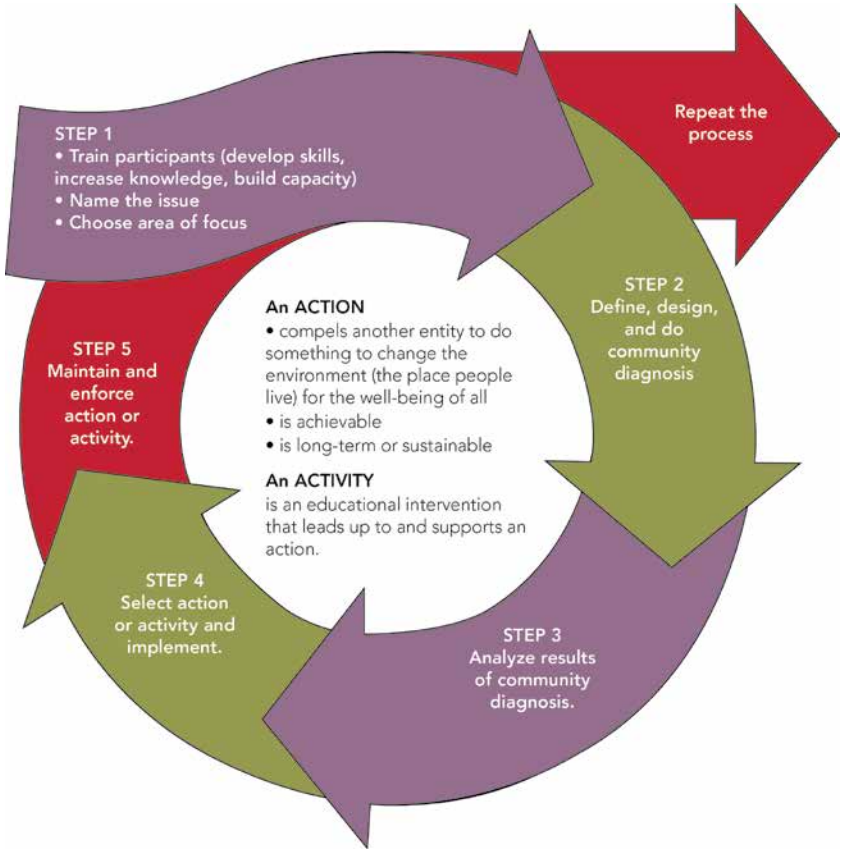
(2) **action research**, in which advocates define, design, and conduct a community diagnosis;

(3) **analysis**, in which advocates assess the results of the community diagnosis and prepare findings;

(4) **policy development**, in which advocates select, plan, and implement an environmental change action and educational activities intended to support it; and

(5) **implementation**, in which advocates seek to ensure that the policy outcome is enforced and maintained.

Figure 19. The Five Steps of the Community Action Model Process

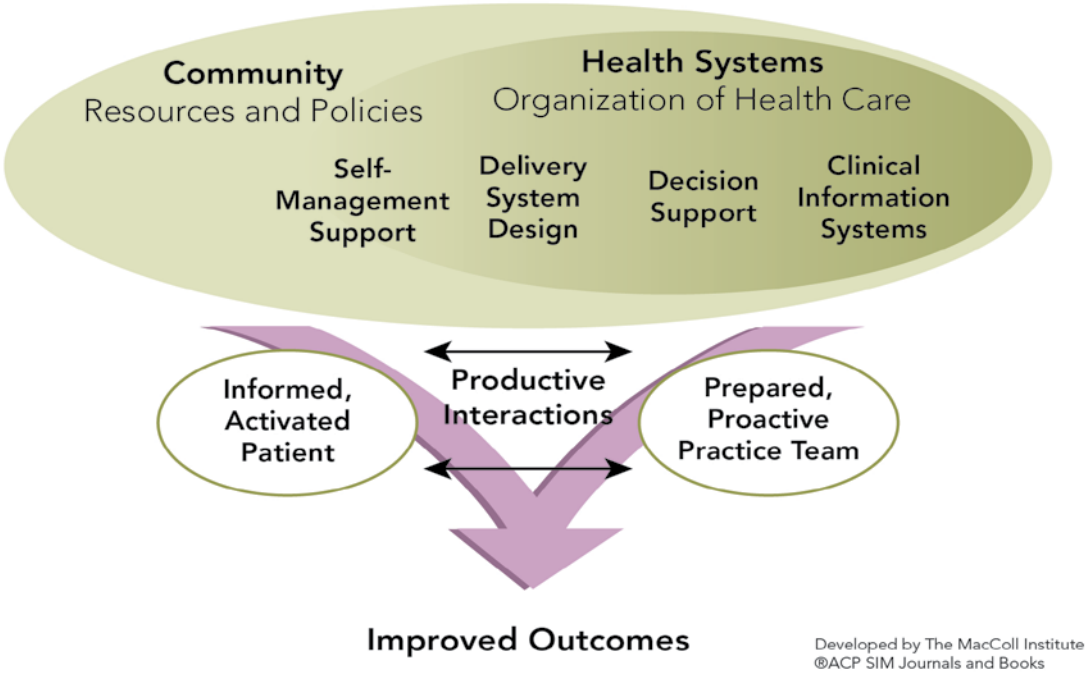


Adapted from: Lavery, Smith, et. al. The Community Action Model: A Community-Driven Model Designed to Address Disparities in Health. Am J Public Health. 2005 April; 95(4): 611–616. doi: 10.2105/AJPH.2004.047704 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449228/

THE CHRONIC CARE MODEL

The Chronic Care Model (CCM) identifies the essential elements of a health care system that encourage 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. Evidence-based change concepts under each element, in combination, foster productive interactions between informed patients who take an active part in their care and providers with resources and expertise. The model can be applied to a variety of chronic illnesses, health care settings, and target populations. The bottom line is healthier patients, more satisfied providers, and cost savings.

Figure 20. The Chronic Care Model



The Chronic Care Model image is used with permission.
http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2

Adapted from: Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? Eff Clin Pract. 1998;1:2-4.

The **Care Coordination Model** looks at care coordination from the perspective of a patient-centered medical home (PCMH). It considers the major external providers and organizations with which a PCMH must interact: medical specialists, community service agencies, and hospital and emergency facilities, and summarizes the elements that appear to contribute to successful referrals and transitions.

Those elements include:

(1) Assuming **accountability**,

(2) Providing **patient support**,

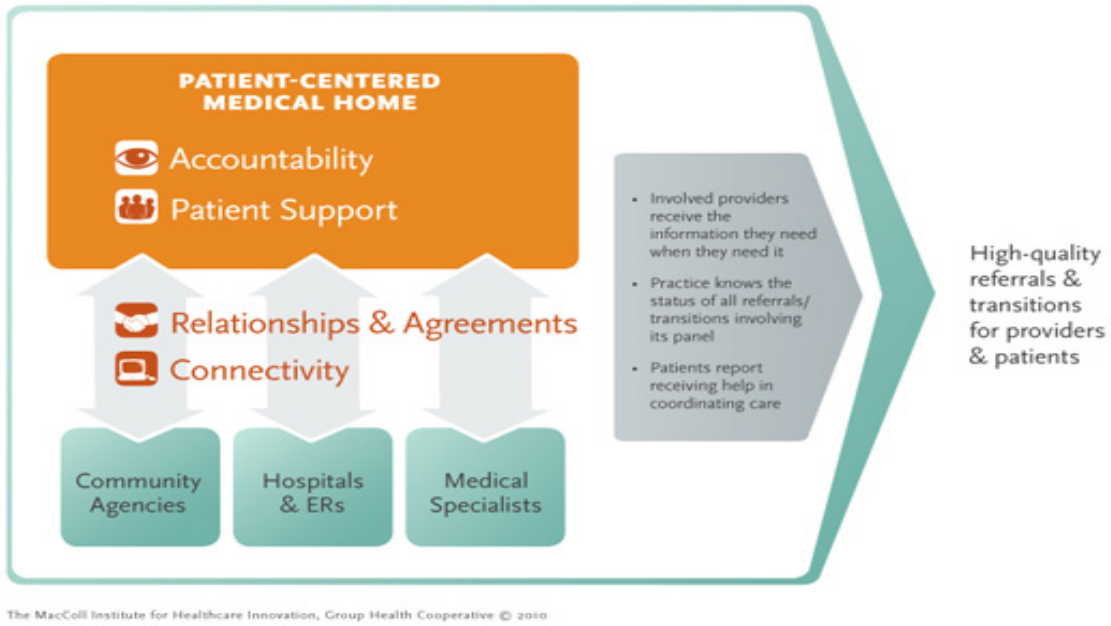
(3) Building **relationships and agreements** among providers (including community agencies) that lead to shared expectations for communication and care, and

(4) Developing **connectivity** via electronic or other information pathways that encourage timely and effective information flow among providers (including community agencies).

CARE COORDINATION MODEL

Care coordination is "the deliberate organization of patient care activities between two or more participants involved in a patient's care to facilitate the appropriate delivery of health care services."[1] In this definition, all providers working with a particular patient share important clinical information and have clear, shared expectations about their roles. Equally important, they work together to keep patients and their families informed and to ensure that effective referrals and transitions take place.

Figure 21. Care Coordination Model



[1] McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies, Volume 7: Care Coordination. Rockville, MD: Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services; June 2007.

Adapted from: Reducing Care Fragmentation: A Toolkit for Coordinating Care. (Prepared by Group Health's MacColl Institute for Healthcare Innovation, supported by The Commonwealth Fund), April 2011. http://www.improvingchroniccare.org/index.php?p=Care_Coordination_Model&s=353

TAKE HEART ALASKA HEART DISEASE AND STROKE PREVENTION PLAN 2012-2018

GOALS, OBJECTIVES AND STRATEGIES FOR ALASKA HEART DISEASE AND STROKE PREVENTION

HEALTHY LIFESTYLES

Despite what we know about the role that healthy lifestyles play in reducing the risk of heart disease and stroke, many Alaskans do not engage in these healthy behaviors. Healthy lifestyles include eating a balanced diet, staying physically active, and living tobacco free. Healthy lifestyles can be promoted in many different environments, including communities, worksites, schools, and health care settings.

The Take Heart Alaska Heart Disease and Stroke Prevention Plan recognizes the critical role that tobacco, diabetes, poor nutrition, inactivity, and unhealthy weight plays in the development of heart disease and stroke. For thorough coverage and strategies for addressing these important health issues, please view the statewide plans listed below.

The Alaska Diabetes Coalition Strategic Plan: 2011-2015
http://dhss.alaska.gov/dph/Chronic/Documents/Diabetes/AKDiabetesStrategicPlan_2011-2015.pdf

Alaska in Action: Statewide Physical Activity and Nutrition Plan
http: //dhss.alaska.gov/dph/Chronic/Documents/Obesity/pubs/AlaskaInAction.pdf

Alaska Food Policy Council Strategic Plan: 2012-2015
http://dhss.alaska.gov/dph/Chronic/Documents/Nutrition/assets/2012-15_AFPC_StrategicPlan.pdf

Alaskan Partnerships: Statewide Plan to Reduce Tobacco Addiction and Exposure
http://dhss.alaska.gov/dph/Chronic/Documents/Tobacco/ATCA_Plan.pdf

Goal 1: Work collaboratively to improve the ability of all Alaskans to eat a healthful diet, to be physically active, and to live tobacco-free.

Goal 2: Ensure that all Alaskans know how to reduce their risk of heart disease and stroke.

Goal 3: Ensure optimal treatment and secondary prevention for heart disease and stroke patients.

Goal 4: Improve data collection abilities and documentation systems used by Alaska health care organizations and providers (especially as they relate to heart disease and stroke data).

GOAL 1: Support efforts to improve the ability of all Alaskans to eat a healthful diet, to be physically active, and to live tobacco-free.

OBJECTIVE 1: Decrease the gaps in primary prevention strategies by promoting healthy lifestyles.

- Strategy 1: Identify primary prevention strategies being led and performed by Alaska groups and coalitions statewide (outside of the Take Heart Alaska coalition) involving eating a healthful diet and being physically active.
- Strategy 2: Identify the gaps in primary prevention strategies involving diet and physical activity being met by Alaska groups and coalitions statewide.
- Strategy 3: Develop a plan to address gaps in primary prevention strategies involving diet and physical activity.

OBJECTIVE 2: Increase the number of Alaskan kindergarten through 12th grade students who participate in quality physical education classes.

- Strategy 1: Support the training of physical education teachers within the University of Alaska system and other Alaska universities.
- Strategy 2: Encourage participation in health, physical education, and recreation professional development courses for Alaskan teachers and continuing education courses for businesses and other groups.
- Strategy 3: Encourage the creation of a State of Alaska physical education consultant to support school district staff.
- Strategy 4: Support statewide and local policy changes that increase the number of quality physical education programs.

OBJECTIVE 3: Increase physical activity in communities, workplaces, and schools by implementing activity friendly programs, policies, and environmental supports.

- Strategy 1: Encourage the improvement of playgrounds and play areas for schools, including pre-schools and universities.
- Strategy 2: Work with the Alaska Department of Transportation's "Safe Routes to School Program" to improve walking and biking infrastructure near schools.

- Strategy 3: Work with the Alaska Department of Transportation's "Safe Routes to School Program" to promote Walk to School Day/Week across the state.
- Strategy 4: Encourage the creation and expansion of before-, during- and after-school physical activity programs.
- Strategy 5: Encourage increased local and state capital expenditures for indoor and outdoor public use recreation facilities and areas.
- Strategy 6: Assess the number of employers that have implemented worksite policy/environmental supports for physical activity.
- Strategy 7: Promote financial benefits for businesses that implement and maintain worksite health promotion programs.
- Strategy 8: Promote a university-based certificate program in Alaska focusing on wellness.
- Strategy 9: Revise and update the Physical Activity Inventory resource: *Putting the Pieces Together, Statewide Efforts to Prevent Cardiovascular Disease, Policies, Programs, and Environmental Supports for Physical Activity and Risk Reduction* that was originally published in 2004.

OBJECTIVE 4: **Increase the number of communities, employers, and schools who facilitate healthy eating through programs, policies and environmental supports that encourage a nutritious diet.**

- Strategy 1: Encourage vending machine policies that support healthy choices.
- Strategy 2: Support local farmers' markets, senior farmers' market programs, and the Supplemental Nutrition Assistance Program (SNAP) or food stamp farmers' market program.
- Strategy 3: Promote the use of traditional Alaska Native foods.
- Strategy 4: Encourage the State of Alaska Department of Education and Early Development student nutrition program to hire a registered dietitian.
- Strategy 5: Partner with food suppliers and store owners to increase healthy food available to customers.
- Strategy 6: Promote quality school-based nutrition programs, as part of a coordinated school health program.

- Strategy 7: Promote increased nutrition education in school-based and early child care settings.
- Strategy 8: Encourage enacting legislation to ensure restaurant nutrition fact labels are available on foods.
- Strategy 9: Actively participate in the work of the National Salt Reduction Initiative sponsored by the New York State Department of Health.
- Strategy 10: Actively participate in the work of the Alaska Food Policy Council.

OBJECTIVE 5: Increase the number of community facilities that provide healthy food choices, including a higher number of fruits, vegetables, whole gains, and unsaturated fats, and reduced amounts of overall calories, sugar, salt, sugar sweetened beverages, refined starches, and saturated and trans fats.

OBJECTIVE 6: Increase the use of traditional Alaska Native and local foods.

- Strategy 1: Promote the use of traditional and local foods as a means to making healthy food choices.
- Strategy 2: Promote the identification, gathering process, and preparation of traditional, subsistence, and local foods.
- Strategy 3: Emphasize the use of traditional meats, sea mammals, fish, plants, and berries in dietary recommendations for rural Alaska.

OBJECTIVE 7: Promote tobacco-free Alaskans through collaboration with Alaska tobacco control groups.

- Strategy 1: Encourage members of Alaska Tobacco Control Alliance (ATCA) and Take Heart Alaska (THA) to participate in both organizations to create a unified message.
- Strategy 2: Use existing ATCA and THA listservs and committees to spread tobacco-free messages and activities to all members.
- Strategy 3: Promote clean indoor air and smoking cessation policy development and dissemination.

PUBLIC EDUCATION

Education is an important component for increasing the public's role in becoming healthier. Learning what healthy lifestyle changes to make and ways to make those changes are essential first steps in improving public health. Engaging the individual, family, and community in embracing healthier behaviors can change society's expectations of what "normal" is. Smoke-free indoor air and well-populated walking trails are observable reminders of how normal can change.

High blood pressure, high cholesterol, and diabetes are not easy to see, so learning about these conditions requires more intervention by the health care community partnering with the individual to make changes. Through education, the public can learn to increase screening for risk factors, ways to comply with lifestyle and medical treatment plans, and how to take early action in getting critical treatments.

Education is also an essential part in the early treatment and successful outcomes of many of the advanced care options available today. We have discovered many treatment options that rely on the early recognition and rapid intervention by the public. Heart attack, stroke, and sudden death can be changed from a life ending event to a short term illness by an aspirin, use of a clot dissolving drug, or cardiopulmonary resuscitation (CPR) with an Automated External Defibrillator (AED). Learning to recognize warning signs and how to properly intervene is critical to saving lives.

For education to be effective, the messages must be presented to the audience in a way that they are understood and carried out in a systematic and culturally appropriate manner. Once the education takes place, it must be evaluated for its effectiveness and accompanied by environmental changes that support new behaviors.

GOAL 2: Ensure that Alaskans know how to reduce their risk of heart disease and stroke.

OBJECTIVE 1: Increase the number of Alaskans who know their blood pressure, cholesterol/lipids/low density lipoprotein (LDL), BMI, waist circumference, and glucose numbers, and who know if these numbers are high or borderline.

- Strategy 1: Develop a "Know Your Numbers" campaign to educate the public and health care practitioners on these numbers, as well as nutrition and activity guidelines.

- Strategy 2: Distribute the "Know Your Numbers" tools to health care practitioners, health screening groups, health care organizations, and health care clinics.
- Strategy 3: Reinforce the importance of screening programs in communities, workplaces, and by health care providers.
- Strategy 4: Collaborate with health care providers and public health staff to develop statewide screening guidelines.
- Strategy 5: Support the expansion of screening (especially in rural areas) for high blood pressure, high cholesterol/LDL, diabetes, obesity, poor nutrition, sedentary lifestyle, tobacco use, and depression.
- Strategy 6: Collaborate with health care providers to develop a plan to communicate the screening guidelines to the practitioners.
- Strategy 7: Support the adoption of evidence-based interventions when screening is positive for detecting a risk factor or disease process.

OBJECTIVE 2: Increase the percentage of patients aged 18 years and older who are screened for high blood pressure. (Million Hearts™ initiative objective)

- Strategy 1: Expand screening programs or screening opportunities for detecting high blood pressure.
- Strategy 2: Reinforce the importance of blood pressure screening programs in communities and workplaces.
- Strategy 3: Collaborate with health care providers and public health staff to develop statewide blood pressure screening and high blood pressure referral guidelines.
- Strategy 4: Collaborate with health care providers to develop a plan to communicate high blood pressure screening and referral guidelines to practitioners.
- Strategy 5: Support the adoption of evidence-based interventions when screening is positive for detecting high blood pressure.

OBJECTIVE 3: **Increase the percentage of patients aged 20 through 79 years who are screened for high cholesterol (focused on fasting low density lipoprotein (LDL) and risk-stratified fasting LDL). (Million Hearts™ initiative objective)**

- Strategy 1: Expand screening programs or screening opportunities for detecting high cholesterol.
- Strategy 2: Reinforce the importance of cholesterol screening programs in communities, workplaces, and by health care providers.
- Strategy 3: Collaborate with health care providers and public health staff to develop statewide cholesterol (especially fasting low density lipoprotein (LDL) and risk-stratified fasting LDL) screening and referral guidelines.
- Strategy 4: Collaborate with health care providers to develop a plan to communicate cholesterol screening and referral guidelines to practitioners.
- Strategy 5: Support the adoption of evidence-based interventions when screening is positive for detecting high cholesterol/high LDL.

OBJECTIVE 4: **Increase the percentage of patients aged 18 years or older who were screened for tobacco use one or more times within 24 months and who received cessation counseling intervention if identified as a tobacco user. (Million Hearts™ initiative objective)**

- Strategy 1: Collaborate with health care providers and public health staff to develop statewide tobacco use screening and referral guidelines.
- Strategy 2: Collaborate with health care providers to develop a plan to communicate tobacco use screening and referral guidelines to practitioners.

OBJECTIVE 5: **Improve access, outreach, and public communication related to the ABCS (appropriate Aspirin therapy - Blood pressure control - Cholesterol management - Smoking cessation) through policies that achieve synergy between prevention in health care and prevention in the community.**

- Strategy 1: Extend care beyond the clinic using traditional and non-traditional (e.g., community health worker) providers trained to counsel patients to improve the ABCS.
- Strategy 2: Support the work of Community Transformation Grants (CTG) Program.

For more information on **community health workers**:

http://www.cdc.gov/dhdsp/docs/ chw_brief.pdf

For more information on **Community Transformation Grants**:

http://www.cdc.gov/communitytransformation/

OBJECTIVE 6: **Increase the number of Alaskans who recognize the signs and symptoms of heart attack and stroke, and the importance of calling 911.**

- Strategy 1: Develop a media campaign to educate the public on the signs and symptoms of heart attack and stroke, and the importance of calling 911.
- Strategy 2: Include the signs and symptoms of heart attack and stroke, and the importance of calling 911 on printed materials developed by Take Heart Alaska when feasible.

OBJECTIVE 7: **Increase the number of Alaskans who know the risk factors, prevention strategies, and treatment methods for heart disease and stroke and who are motivated to implement behavior changes to decrease their risk of heart disease and stroke.**

- Strategy 1: Develop a media campaign that highlights the urgency for individuals to implement behavior changes that can prevent or reduce the symptoms and/or disability resulting from heart disease and stroke.

OBJECTIVE 8: **Increase the number of patients with heart disease and stroke (and other chronic diseases) who review their progress on risk reduction goals with their health care providers.**

OBJECTIVE 9: **Increase the number of Alaskans who are trained in cardiopulmonary resuscitation (CPR).**

- Strategy 1: Support community programs that provide CPR, Hands-only CPR, Basic Life Support (BLS), and/or Automated External Defibrillator (AED) training.
- Strategy 2: Support CPR training focused on the eighth grade students in the schools, their families and friends.

HEART DISEASE AND STROKE TREATMENT AND SECONDARY PREVENTION

In order to have the greatest impact on improving the outcomes for patients with heart disease and stroke, it is crucial to implement best practices within systems of care. This includes the way people access health care, their opportunities for receiving care, insurance coverage for care, and the consistent availability of quality care in hospitals, health centers, clinics, and from primary care, emergency care and rehabilitation providers.

The science of preventing and treating heart disease and stroke continues to improve and evolve. The Take Heart Alaska Heart Disease and Stroke Prevention Plan objectives support practitioners' efforts to be up-to-date on, and promote evidence-based practices relating to heart disease and stroke. The education must include all levels of practitioners who provide care for patients with these diseases.

GOAL 3: Ensure optimal treatment and secondary prevention for heart diseases and stroke patients.

OBJECTIVE 1: Increase the percentage of health care providers, emergency medical services (EMS--including dispatch), hospitals, and clinics that adhere to evidence-based guidelines for treating and preventing heart disease, stroke, high blood pressure, and high cholesterol.

- Strategy 1: Provide best practice resources and/or toolkits for treatment or management of high blood pressure, high cholesterol, chest pain/acute coronary syndrome, acute MI, heart failure, and stroke to facilities, clinics, allied groups, primary care providers, health care practitioners.
- Strategy 2: Provide best practice resources for follow-up treatment of acute myocardial infarction (MI), heart failure and stroke.
- Strategy 3: Evaluate the use of evidence-based clinical guidelines and treatment protocols for high blood pressure, high cholesterol, chest pain/ acute coronary syndrome, acute MI, heart failure, and stroke.
- Strategy 4: Use the Take Heart Alaska website, listserv, and social media sites to post tools and links to current practice guidelines and educational programs that offer continuing education credits, and notices of other training opportunities around the state.

OBJECTIVE 2: **Increase the number of regional EMS and dispatcher sites who establish and implement evidence-based heart attack and stroke guidelines throughout the state.**

- Strategy 1: Collaborate with initial health system contacts to adopt and train on dispatch protocols that are appropriate for varying sophistication levels and structures of dispatch systems.
- Strategy 2: Collaborate with regional EMS and dispatcher sites to receive evidence-based, pre-hospital training in stroke and heart attack response.
- Strategy 3: Collaborate with regional EMS sites to adopt evidence-based, pre-hospital protocols in stroke and heart attack response.

OBJECTIVE 3: **Increase the number of health care providers who are aware of and use current cholesterol guidelines (Adult Treatment Panel) ATP III (or ATP IV Guidelines when released).**

- Strategy 1: Provide access to current cholesterol guidelines and resources for health care providers.

OBJECTIVE 4: **Increase the percentage of patients aged 18 through 85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (less than 140/90 mmHg). (Million Hearts™ initiative objective)**

- Strategy 1: Promote health care provider use of current blood pressure treatment guidelines: The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) (or JNC 8 when released).
- Strategy 2: Provide access to current blood pressure guidelines and resources for health care providers.
- Strategy 3: Promote the use of JNC 7 guidelines by providing continuing education (CE) to health care providers.
- Strategy 4: Promote the use of a health care provider documented recommended follow-up plan based on the current blood pressure reading.

OBJECTIVE 5: **Increase the number of health care providers who use proper technique when taking blood pressure readings.**

- Strategy 1: Provide training tool kits and training in the proper technique for taking blood pressures as part of adherence to the blood pressure guidelines.

OBJECTIVE 6: **Assist with the widespread implementation of Self-Measured Blood Pressure (SMBP) monitoring with additional support. (Additional support includes regular one-on-one counseling with a nurse or pharmacist, web-based or telephonic support tools that are used in response to patient reported blood pressure readings, and educational classes that can include telephone-based and small group classes on SMBP technique and lifestyle changes.)**

- Strategy 1: Share evidence and resources to promote the role of SMBP in the clinical management of high blood pressure with health care providers and provider groups.
- Strategy 2: Assist health care provider groups to identify SMBP champions in individual medical practices and patient-centered medical homes.
- Strategy 3: Provide technical assistance to provider groups on implementing clinical support programs for SMBP.
- Strategy 4: Share patient-focused SMBP resources with health care providers and provider groups for use in their medical practice or patient centered medical home.
- Strategy 5: Encourage provider groups to offer "train-the-trainer" opportunities to educate team members on how patients should be taught to self-monitor their blood pressure.
- Strategy 6: Encourage health advocacy organizations, community- and faith-based organizations, and patient advocacy groups to share resources to educate the public about the importance of SMBP plus additional support in controlling high blood pressure and to incorporate these messages into broader efforts related to high blood pressure.

OBJECTIVE 7: **Increase the number of hospitals who are committed to decreasing the amount of sodium in their food supply.**

- Strategy 1: Partner with hospitals to develop policies to decrease the sodium in visitor, staff, and patient food served.

OBJECTIVE 8: **Increase the number of health care providers who are aware of and use current stroke evaluation, treatment, rehabilitation, and prevention guidelines.**

- Strategy 1: Provide access to current stroke evaluation guidelines and resources for health care providers.
- Strategy 2: Provide access to current stroke treatment and prevention guidelines and resources for health care providers.
- Strategy 3: Promote the use of stroke evaluation and treatment guidelines by providing continuing education (CE) to health care providers.
- Strategy 4: Promote the use and reach of stroke rehabilitation programs and services.

OBJECTIVE 9: **Increase the number of health care providers who are aware of and use current myocardial infarction treatment, rehabilitation, and prevention guidelines.**

- guidelines and resources for health care providers.
- Strategy 2: Promote the expansion, use, and reach of cardiac rehabilitation programs.
- Strategy 3: Promote the use of myocardial infarction treatment and prevention guidelines by providing continuing education (CE) to health care providers.

OBJECTIVE 10: **Increase the percentage of patients aged 18 years and older with Ischemic Vascular Disease (IVD) with documented use of aspirin or other antithrombotic. (Million Hearts™ initiative objective)**

- Strategy 1: Promote the discussion by health care providers with their adult patients to take aspirin or other antithrombotic who are at increased risk (five-year risk of greater than or equal to three percent) for coronary heart disease (CHD). Discussions with patients should address both the potential benefits and harms of aspirin therapy.

OBJECTIVE 11: Increase the number of health care providers who are aware of and use current atrial fibrillation treatment guidelines.

- Strategy 1: Provide access to current atrial fibrillation treatment guidelines and resources for health care providers.
- Strategy 2: Promote the use of atrial fibrillation treatment guidelines by providing continuing education (CE) to health care providers.

OBJECTIVE 12: Increase the number of health care providers who are aware of and use current heart failure treatment and prevention guidelines.

- Strategy 1: Provide access to current heart failure treatment and prevention guidelines and resources for health care providers.
- Strategy 2: Promote the use of heart failure treatment and prevention guidelines by providing continuing education (CE) to health care providers.

OBJECTIVE 13: Increase the percent of patients receiving health care provider initiated therapeutic lifestyle modifications.

- Strategy 1: Partner with outpatient health care practices to increase the use of electronic health record decision support systems.
- Strategy 2: Encourage providers to routinely assess physical activity levels and talk to patients about incorporating physical activity into their daily routine, as part of comprehensive clinical preventive services.
- Strategy 3: Encourage providers to routinely counsel patients to practice healthy eating habits, including an increased consumption of fruits, vegetables, and subsistence foods, and a decreased consumption of foods high in fat, cholesterol, and sodium.
- Strategy 4: Encourage providers to routinely assess and assist patients with tobacco use, weight management, depression, suicide risk, oral health, and safety at home.
- Strategy 5: Develop referral references to assist health care providers advise and refer patients.

More information about ***Living Well Alaska*** can be found online at:

http://dhss.alaska.gov/dph/Chronic/Pages/SelfManagement/default.aspx

OBJECTIVE 14: Increase the implementation of telemedicine and telestroke capabilities throughout the state of Alaska.

- Strategy 1: Encourage policy changes that would support the placement and ongoing use of telemedicine equipment in clinics, especially in rural Alaska.
- Strategy 2: Encourage policies that would assist in obtaining public or private funding support for telemedicine.
- Strategy 3: Encourage policy changes that would support the use of telestroke equipment and implementation of telestroke protocols in Emergency Departments throughout Alaska.
- Strategy 4: Encourage policies that would assist in obtaining public or private funding support for telestroke or telemedicine.

OBJECTIVE 15: Increase access to self-management support systems for chronic disease patients.

- Strategy 1: Expand the reach of the Chronic Disease Self-Management Program (CDSMP): Live Well Alaska.

GOAL 4: Improve data collection abilities and documentation systems used by Alaska health care organizations and providers (especially as they relate to heart disease and stroke data).

OBJECTIVE 1: Support the development and adoption of data collection systems and data analysis related to heart disease and stroke in Alaska and facilitate information sharing among systems.

- Strategy 1: Encourage and assist with the development and implementation of a statewide traumatic and/or acquired brain injury (T/ABI) registry.
- Strategy 2: Encourage and assist with data collection by Alaska's Emergency Medical System (EMS) programs using an electronic medical record.
- Strategy 3: Support the acquisition and analysis of data sets for primary care practice, outpatient clinic, and Emergency Department data.
- Strategy 4: Partner with Alaska Division of Public Health sections and programs to improve data sharing opportunities.

- Strategy 5: Partner with the state health information exchange (HIE) to identify potential uses of data from the exchange to support health care quality and safety improvement opportunities. (This will occur under the direction of the Alaska Health Care Commission's strategic plan: Transforming Health Care in Alaska, 2009 Report/2010-2014 Strategic Plan.)
    - Strategy 5a: Encourage an increase in the number of electronic patient tracking systems that follow a patient from discharge from a tertiary system to a primary system.
- Strategy 6: Encourage measurement and reporting of clinical quality measures for the ABCS in electronic health records (EHRs) by working with health information exchanges and Regional Extension Centers (RECs).
- Strategy 7: Educate the health information technology (HIT) community on ABCS-related clinical guidelines to drive their incorporation into EHR clinical decision supports.
- Strategy 8: Promote meaningful use of HIT to improve cardiovascular risk factors (registry functionality within EHRs, provider and system level feedback reports, patient recall, provider reminders, tracking of patient referrals).
    - Strategy 8a: Encourage and assist with the development and implementation of a statewide cardiac disease registry or a health information exchange (HIE) that would include high blood pressure and high cholesterol data.

OBJECTIVE 2: **Develop or assist with the development of data collection tools or systems to evaluate the use and effectiveness of evidence-based and evidence-informed care in Alaska.**

NEXT STEPS

The goals and objectives listed are ambitious. The next steps in the process are for the four committees of the Take Heart Alaska coalition to take this plan and develop work groups to choose the objective(s) and strategies that they will focus on, then develop work plans. The work plans will have SMART goals (Specific, Measurable, Attainable, Relevant, and Time-bound).

For more information on Regional Extension Centers:

http://healthit.hhs.gov/programs/REC and http://healthit.hhs.gov

Related strategic planning documents for Alaska include:

Chronic Disease Prevention and Health Promotion Strategic Plan:

http://dhss.alaska.gov/dph/Chronic/Documents/CDPHP_2012StrategicPlan.pdf

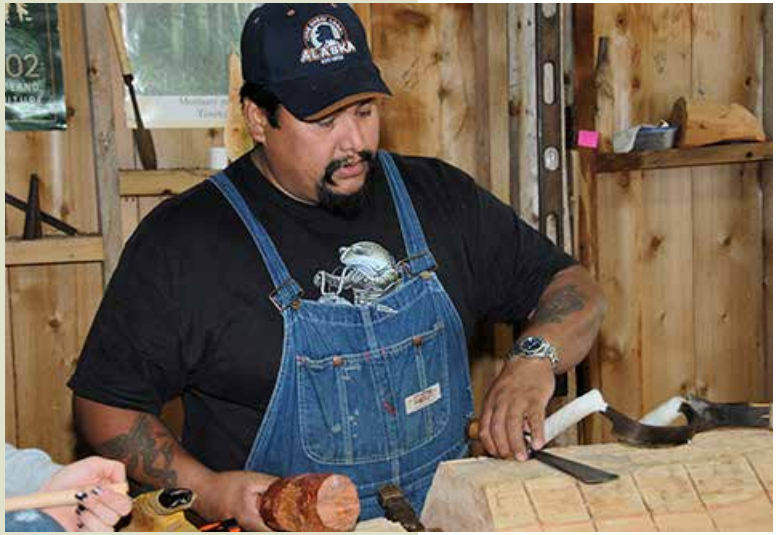
Transforming Health Care in Alaska Strategic Plan, Alaska Health Care Commission:

https://go.dhss.ak.local/pub/home/ahcc/Pages/default.aspx

Alaska Commission on Aging State Plan for Senior Services:

http://dhss.alaska.gov/acoa/Pages/stateplan.aspx

RECOMMENDATIONS



EXCERPTED FROM THE BURDEN OF HEART DISEASE AND STROKE IN ALASKA: MORTALITY, HOSPITALIZATION AND RISK FACTORS, DECEMBER 2009

The gaps in our knowledge about heart disease and stroke in Alaska are unsettling. Despite these gaps, the following recommendations for action seem clear:

1. Given Alaska's low rates of heart disease mortality and morbidity, and moderate to high levels of key risk factors, we have an enormous opportunity and public health responsibility to keep those disease rates low by tackling risk factors head on. Alaska needs to turn its obesity, diabetes, hypertension, and high cholesterol rates around; begin to make an impact on rates of inadequate nutrition; and continue to gain ground with physical activity, smoking, and cholesterol screening.

2. Hospital discharge and Medicaid claims data indicate that treatment and long term care for Alaskans who have had a stroke create a tremendous economic burden. With the projected demographic shift for Alaska over the subsequent decades, in addition to the reality that a majority of hospital discharges and Medicaid payments for stroke occur among those 65 and older, it is imperative that we take an evidence-based, comprehensive approach to stroke treatment and care, in order to reduce these substantial health and economic stroke-related costs. We recommend the development of standardized stroke diagnostic guidelines for pre-hospital transport and a comprehensive stroke treatment plan that addresses acute and sub-acute care.

3. The data indicate a significant gender gap in the treatment of female hospital patients with ischemic heart disease. They are consistently less likely to receive angiography or arteriography, cardiac catheterization, PCI, or bypass surgery. More data is needed to understand the reasons for these disparities, and to develop strategies to correct them.

4. Forty percent of hospital discharges for heart disease and stroke are for Alaskans between the ages of 18 and 64. Since a large percentage of individuals in this age group are active in the workforce, worksite-based prevention strategies may be an effective way to reach this wide-ranging population. There is a need for additional work to establish best practices for primary and secondary prevention of heart disease and stroke within Alaskan worksites, the majority of which are small businesses.

Recommendations from The Burden of Heart Disease and Stroke in Alaska (cont'd)

5. Phase II cardiac rehabilitation (CR) — that is, 12-week outpatient CR — is an effective but highly underutilized method of reducing morbidity and mortality from heart disease. There are several coverage-related challenges until there is a more standard widespread adoption of care. Currently Medicare coverage guidelines for Phase II CR are: (a) ambiguous regarding requirements for physician supervision of CR, and, (b) too restrictive regarding requirements for physician referral to CR.

Alaska's unique size, population density, and limited road system create an additional challenge to achieving higher levels of CR participation — particularly in more rural parts of the state. More than 40 percent of Alaskans live in communities with less than 10,000 residents; 61 communities have populations under 1,000. Traditional hospital-based CR facilities are not sustainable in such communities. Public health and health care professionals in Alaska are encouraged to champion the appropriate changes to Medicare guidelines and support the utilization of existing CR programs, as well as the development of alternative safe and reimbursable delivery models of CR in rural Alaska.

6. The prevalence of several key heart disease and stroke risk factors is high in Alaska, particularly in subgroups with relatively low income and education. Clinicians and public health professionals need to pay close attention to these social class-based inequities, also referred to as "disparities". Addressing disparities in health often equates to reducing the gaps in health outcomes between racial or ethnic groups. While such gaps exist in Alaska, there are even stronger disparities for heart disease and stroke along lines of income and education. These disparities are especially challenging to address, as they require interventions aimed at marginalized and poorly organized populations. Clearly, renewed efforts targeting poor and undereducated Alaskans are required, including those aimed at tobacco prevention and cessation, improved availability of low-cost healthy foods, increased opportunities for physical activity, and greater access to clinical preventive services.

TAKE HEART ALASKA COMMITTEE STRUCTURE

HEALTHY LIFESTYLES COMMITTEE

Take Heart Alaska cardiovascular health coalition home page:

www.Takeheart.Alaska.gov

A healthy lifestyle is simple: eat a balanced diet, move, and do not use tobacco. Most of us know a healthy lifestyle prevents heart disease and stroke. Yet, many Alaskans have difficulty following these simple guidelines.

Healthy lifestyle habits can be promoted in many different settings including communities, worksites, schools, and health care. The Healthy Lifestyles Committee works through its subcommittees to promote physical activity and healthy eating in these settings.

HEALTHY LIFESTYLES SUBCOMMITTEES

ALASKANS PROMOTING PHYSICAL ACTIVITY (APPA)

Alaskans Promoting Physical Activity (APPA) is a coalition representing a wide variety of organizations interested in promoting the benefits of regular physical activity. APPA's mission is to increase physical activity among Alaskans by influencing policies, physical and social environments, and personal behaviors through health promotion, education, and advocacy efforts. APPA's goal is to improve health, fitness, and quality of life for all Alaskans.

To accomplish their mission and goal, APPA works to implement recommendations in the Take Heart Alaska Heart Disease and Stroke Prevention Plan that involve physical activity.

EAT SMART ALASKA!

Eat Smart Alaska! is a group of volunteers working toward a healthier Alaska. Members are consumers, foodservice representatives, educators, health professionals, government agencies, and private businesses. Eat Smart Alaska!'s mission is to help shape food consumption in a positive way and to promote health and reduce disease among all Alaskans. Eat Smart Alaska! advocates for the increased availability of healthful foods, increased education about the economic benefits of healthful eating, and the increased use of media to promote healthful eating messages, including how healthful eating promotes a better quality of life and prevents disease.

Eat Smart Alaska! supports activities across Alaska such as health fairs, promoting local and native foods, in-store food demonstrations and grocery store tours, all in collaboration with teachers, schools, businesses and health care educators.

PUBLIC EDUCATION COMMITTEE

Developing a sense of urgency around risk reduction for heart disease and stroke prevention, the number two and five killers of Alaskans respectively, is critical to making changes. Educating the public is one way to help to develop this sense of urgency and work toward making those changes.

The Public Education Committee focuses on the goals and objectives within the Take Heart Alaska Heart Disease and Stroke Prevention Plan that target producing and disseminating educational materials to the general public and providing community education. This education will be carried out in a systematic, culturally appropriate manner, then evaluated for effectiveness. Some of the subjects the Public Education Committee focuses on are improving public knowledge and awareness of the signs and symptoms of heart disease and stroke, their risk factors, and ways to reduce those risks.

CARDIAC SYSTEMS OF CARE COMMITTEE

The Cardiac Systems of Care Committee works to improve cardiac care in Alaska and reduce death and disability from cardiac diseases. This committee also targets efforts to ensure optimal secondary prevention for those people who have had a heart attack. To have the greatest impact on improving outcomes for patients with cardiac diseases, it is crucial to look at systems of care that include health equity and the consistency of the quality of care patients receive as they move from acute care to primary care to rehabilitation services.

The science of preventing and treating heart disease continues to improve and evolve. The Take Heart Alaska Heart Disease and Stroke Prevention Plan objectives support practitioners' efforts to be up-to-date on and promote evidence-based practices relating to heart diseases.

The Cardiac Systems of Care Committee will:

- target efforts to ensure optimal treatment and secondary prevention for heart disease patients.
- target efforts to reduce cardiovascular disease risk factors.
- support practitioners' efforts to be up-to-date on and promote evidence-based practices relating to cardiovascular diseases and their risk factors by providing and supporting professional education opportunities.

The Cardiac Systems of Care Committee work will focus on at least one of the following topics:

- Acute Coronary Syndrome (ACS)
- Acute Myocardial Infarction (AMI)
- ST segment Elevation MI (STEMI)
- Non ST segment Elevation MI (NSTEMI)
- Heart Failure
- Hypertension
- Cardiac Rehabilitation

STROKE SYSTEMS OF CARE COMMITTEE

The Stroke Systems of Care Committee works to improve stroke care in Alaska and reduce death and disability from stroke. This committee also targets efforts to ensure optimal secondary prevention for those people who have had a stroke. To have the greatest impact on improving outcomes for patients with heart disease and stroke, it is crucial to look at systems of care that include health equity and the consistency of the quality of care patients receive as they move from acute care to primary care to rehabilitation services.

The science of preventing and treating stroke continues to improve and evolve. The Take Heart Alaska Heart Disease and Stroke Prevention Plan objectives support practitioners' efforts to be up-to-date on and promote evidence-based practices relating to heart disease and stroke.

The Stroke Systems of Care Committee will:

- target efforts to ensure optimal treatment and secondary prevention for stroke patients.
- target efforts to reduce cardiovascular disease risk factors.
- support practitioners' efforts to be up to date on and promote evidence-based practices relating to cardiovascular diseases and their risk factors by providing and supporting professional education opportunities.

The Committee work will focus on least one of the following topics:

- Stroke
- Transient Ischemic Attacks (TIAs)
- Telestroke
- Atrial Fibrillation
- Stroke Rehabilitation

EVALUATION FRAMEWORK

Prepared by: Clint J. Farr, Evaluator

State of Alaska Heart Disease and Stroke Prevention Program

EVALUATION GOAL

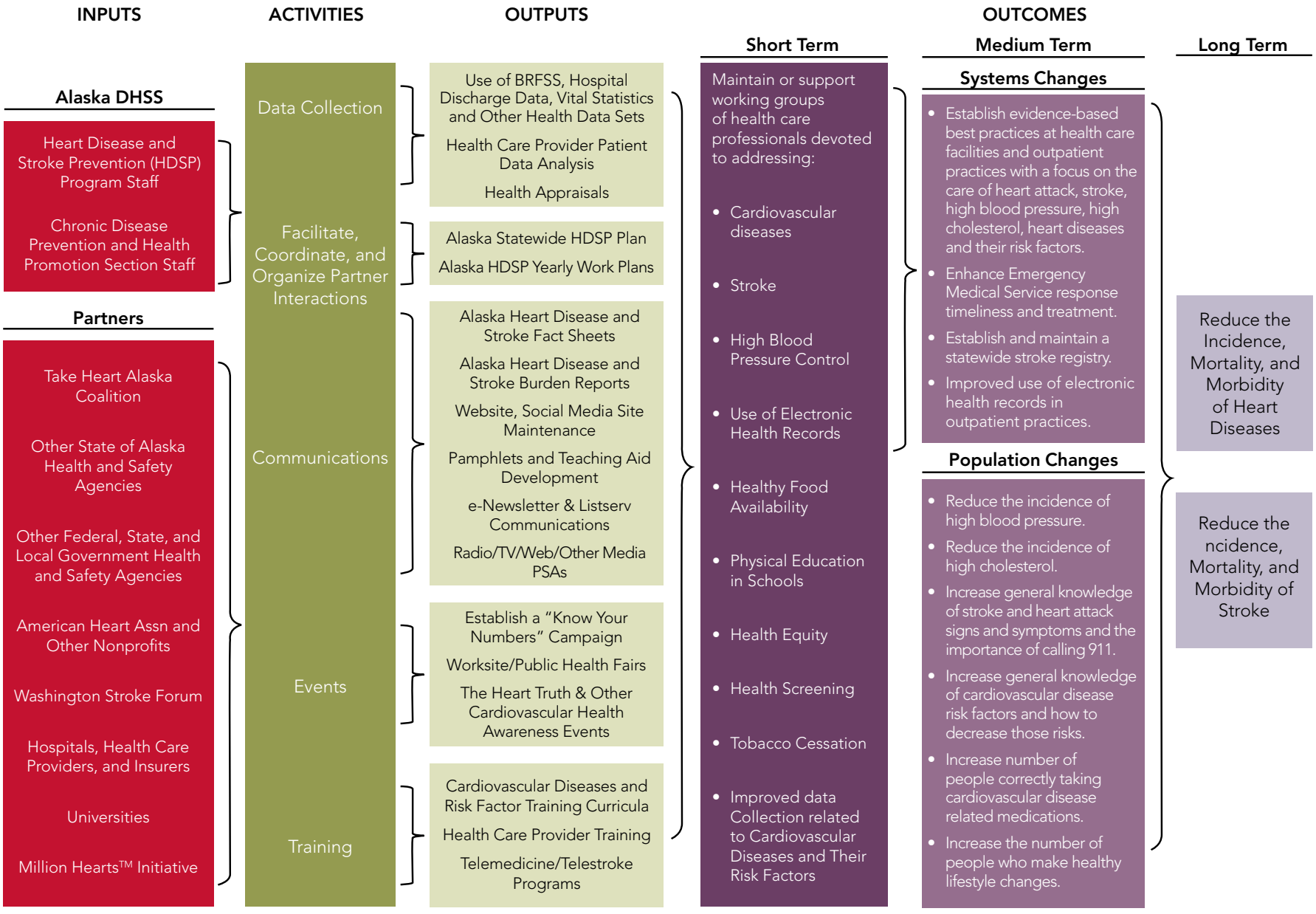
The Take Heart Alaska (THA) cardiovascular health coalition and the Alaska Heart Disease and Stroke Prevention (HDSP) Program are tasked with improving cardiovascular health for Alaskan individuals and communities by encouraging healthy lifestyles and better access to proven preventive and treatment services.

The THA coalition and the HDSP program identified a number of goals, objectives, and strategies to improve Alaskans' cardiovascular and cerebrovascular health. The THA coalition and the HDSP program will focus their activities and outputs under five areas: data collection, training and education, policy support and promotion, enhanced screening, and strengthening partnerships. The purpose of this evaluation framework is to outline a process that the committees and HDSP staff will use to determine whether coalition and program activities and outputs will meet short, medium, and long term outcomes.

THA coalition members, HDSP staff, and the public can use the evaluation framework and ongoing evaluation activities to determine if the THA coalition and the HDSP program are effectively meeting desired heart disease and stroke outcomes. The evaluation framework follows a suggested template from the Centers for Disease Control and Prevention (CDC), easing CDC's review and approval of the plan. Further, the evaluation framework identifies indicators, defined, measurable, and meaningful attributes of a desired outcome. How these indicators are tracked and measured over time, and what these indicators mean to the success of the THA coalition and the HDSP program, is the primary purpose of the evaluation framework. See the CDC website below for the details of how to use the CDC evaluation framework. For working copies of the complete framework, see the online version of this section available at:
http://dhss.alaska.gov/dph/Chronic/Documents/Cardiovascular/pubs/AKHeartDiseaseStrokePlan2012.pdf

Source: Department of Health and Human Services Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. CDC Division for Heart Disease and Stroke Prevention State Heart Disease and Stroke Prevention Program. Evaluation Guide: Developing an Evaluation Plan. http://www.cdc.gov/dhdsp/programs/nhdsp_program/evaluation_guides/docs/evaluation_plan.pdf

LOGIC MODEL
State of Alaska, Department of Health and Social Services, Division of Public Health, Chronic Disease Prevention and Health Promotion Section, Heart Disease and Stroke Prevention Program



APPENDIX A

TAKE HEART ALASKA COALITION ORGANIZATION MEMBERS

(as of December 2012)

American Alliance for Health, Physical Education, Recreation, and Dance

Alaska Health Fairs, Inc.

Alaska Heart Institute

Alaska Injury Prevention Center

Alaska Native Health Board

Alaska Native Medical Center

Alaska Premier Health

Alaska Regional Hospital

Alaska Seafood Marketing Institute

Aleutian Pribilof Island Association

All Alaska Pediatric Partnership

Alliance for a Healthier Generation

American Diabetes Association

American Heart Association

American Heart Institute

American Lung Association of Alaska

Anchorage Historic Properties

Anchorage Neighborhood Health Center

Anchorage Parks and Recreation

Anchorage School District

Bartlett Regional Hospital

BP Exploration

Bristol Bay Area Health Corporation

Callisto Pediatric Clinic, Ketchikan

CDC Division of Nutrition, Physical Activity and Obesity

CDC Division for Heart Disease and Stroke Prevention

Centers for Disease Control and Prevention

Central Peninsula General Hospital

Chugachmiut

Delta School District

East Anchorage High School

EDN Nutrition Consulting

Fairbanks Memorial Hospital

Fairbanks School District

Juneau Parks and Recreation Dept.

Ketchikan General Hospital

Kodiak Fire Department

Kodiak Providence Alaska Medical Center

Mat-Su Regional Medical Center

North Slope Borough Health Department

Norton Sound Health Corporation

Premera Blue Cross/Blue Shield

Qualis Health

Sacred Heart Parish Nurse Ministry

Take Heart Alaska Coalition Organization. Members (cont'd)

SEARHC (Southeast Regional Health Consortium)

SEARHC Angoon Clinic

SEARHC Community Transformation Grants

SEARHC Haines Clinic

Seldovia Village Tribe

Sport Alaska

State of Alaska

Dept. of Administration, Alaska Commission on Aging

Dept. of Corrections, Anvil Mountain Correctional Center (Nome)

Dept. of Fish and Game

Alaska Dept. of Health and Social Services (DHSS)

DHSS, Chronic Disease and Health Promotion

DHSS, Emergency Medical Services

DHSS, Epidemiology

DHSS, Health Care Services

DHSS, Public Health Nursing, Anchorage Itinerant

DHSS, Public Health Nursing, Bethel Public Health Center

DHSS, Public Health Nursing, Fairbanks Regional Public Health Center

DHSS, Public Health Nursing, Homer Public Health Center

DHSS, Public Health Nursing, Juneau Public Health Center

DHSS, Public Health Nursing, Kenai Public Health Center

DHSS, Public Health Nursing, Ketchikan Public Health Center

DHSS, Public Health Nursing, Mat-Su Public Health Center

DHSS, School Health

Dept. of Natural Resources

Dept. of Natural Resources, Parks and Outdoor Recreation

Dept. of Transportation and Public Facilities, Statewide Planning

Sunshine Community Health Center

Tanana Chiefs Conference, Inc.

University of Alaska - Anchorage

UAA – Health, Physical Education and Recreation

UAA - School of Education

University of Alaska – Fairbanks

University of Alaska – Southeast

Valdez City Schools

Valley Medical Clinic (Juneau)

Vivacity

Washington State Department of Health

WIN for Alaska

WISEWOMAN Women's Health SEARHC

Yukon Kuskokwim Health Corporation

APPENDIX B

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION FOUR KEY DOMAINS

Chronic disease public health practitioners must make measurable contributions to the prevention and control of chronic disease – and by doing so, improve quality of life, increase life expectancy, improve the health of future generations, increase productivity and help control health care spending.

It is increasingly recognized that individual health depends on societal health and healthy communities. In addition to having strong medical care systems, healthy communities promote and protect health across the lifespan, across a variety of sectors, and through a range of policies, systems and environmental supports that put health in the people's hands and give Americans even greater opportunity to take charge of their health.

Transforming the nation's health and providing Americans with equitable opportunities to take charge of their health requires work within four key domains.

CDC DOMAIN 1

Epidemiology and Surveillance: Gather, analyze, and disseminate data and information; conduct evaluation to inform, prioritize, deliver, and monitor programs and population health.

Making the investment in epidemiology and surveillance provides states with the necessary expertise to collect data and information and to develop and deploy effective interventions, identify and address gaps in program delivery, and monitor and evaluate progress in achieving program goals. Data and information come with the responsibility to use it routinely to inform decision makers and the public regarding the effectiveness of preventive interventions and the burden of chronic diseases and their associated risk factors, public health impact, and program effectiveness. The need to publicize widely the results of states' work in public health and demonstrate to the American people the return on their investment in prevention has never been greater.

EXAMPLES OF ACTIVITIES

- Collect appropriate data to monitor risk factors and chronic conditions of interest through surveillance systems (such as the BRFSS, NPCR and other cancer screening data systems, Vital Statistics, and Medicare data sets), rapidly develop and disseminate data reports in easy-to-use and understand formats, describe multiple chronic conditions, and use data to drive state and local public health action.
- Conduct surveillance of behavioral risk factors, social determinants of health, and monitor environmental change policies related to healthful nutrition, physical activity, tobacco, community water fluoridation, and other areas.
- Collect cancer surveillance data to assess cancer burden and trends, identify high risk populations, and guide the planning and evaluation of cancer control programs (e.g., prevention, screening and treatment efforts).
- Conduct youth and adult surveillance of tobacco-related knowledge, attitudes and behaviors (ATS/NATS, YTS/NYTS); translate and disseminate data and information for action.
- Collect, use, and disseminate data on oral diseases, their risk factors and the use of preventive oral health services.
- Examine administrative datasets for factors associated with risk for all-cause and cardiovascular disease mortality.
- Conduct surveillance of health behaviors and policies for women before, during, and after pregnancy using the Pregnancy Risk Assessment Monitoring System (PRAMS) to translate and disseminate data for action; collaborate with state PRAMS coordinators in using findings for program strategies and policies as appropriate.
- Link administrative, vital records, and hospital discharge data to conduct surveillance on the prevention of preterm births and pregnancy complications.

CDC DOMAIN 2

Environmental approaches that promote health and that support and reinforce healthful behaviors (statewide in schools, worksites, and communities).

Improvements in social and physical environments make healthy behaviors easier and more convenient for Americans. A healthier society delivers healthier students to our schools, healthier workers to our businesses and employers, and a healthier population to the health care system. These types of interventions support and reinforce healthy choices and healthy behaviors, and make it easier for Americans to take charge of their health. They have broad reach, sustained health impact, and are best buys for public health.

EXAMPLES OF ACTIVITIES

Expand access to and availability of healthy foods and beverages through a variety of strategies, including:

- Nutrition standards for food and beverages offered in settings including state, local and tribal governments, private sector businesses, schools, child care and education facilities, senior centers and other facilities serving older adults, and other settings.
- Accessible, available, and affordable healthful foods in communities, including the provision of full service grocery stores, farmers markets, small store initiatives, mobile vending carts, and restaurant initiatives.
- Comprehensive school strategies to promote healthful nutrition, such as:
    - Implementing Institute of Medicine recommendations on competitive foods (e.g., vending or a la carte items); and
    - Increasing access to healthy foods and beverages in schools through a variety of strategies, such as offering drinking water free of charge throughout the day and implementing farm-to-school initiatives.

CDC Four Key Domains: Domain 2 Environmental Approaches (cont'd)

Promote increased physical activity through a variety of strategies, including:

- Increasing the amount of daily, quality physical education in schools;
- Increasing the amount of daily physical activity through standards in early care/after school settings;
- Increasing access to physical activity for employees through worksite wellness initiatives;
- Facilitating joint use agreements to increase the number of safe, accessible places for physical activity in communities; and
- Implementing strategies for the built environment that promote active transportation (e.g., complete street designs, safe routes to school programs, promoting bicycling as a mode of transportation, health impact assessments).

Reduce tobacco use, prevent youth initiation, and eliminate exposure to secondhand smoke through a variety of evidence-based strategies, including:

- Comprehensive smoke-free air policies in workplaces and public places; smoke-free policies in multi-unit housing and outdoor areas; and tobacco-free campus policies for colleges, workplaces, and health care settings, among others;
- Strategies to reduce youth access to tobacco products (e.g., reducing the affordability, availability, and visibility of tobacco products).

Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water.

CDC DOMAIN 3

Health system interventions to improve the effective delivery and use of clinical and other preventive services in order to prevent disease, detect diseases early, and reduce or eliminate risk factors and mitigate or manage complications.

Health systems interventions improve the clinical environment to more effectively deliver quality preventive services and help Americans more effectively use and benefit from those services. The result: some chronic diseases and conditions will be avoided completely, and others will be detected early, or managed better to avert complications and progression and to improve health outcomes. Health system and quality improvement changes such as electronic health records, systems to prompt clinicians and deliver feedback on performance, and requirements for reporting on outcomes such as the control of high blood pressure and the proportion of the population up-to-date on chronic disease screenings can encourage providers and health plans to focus on preventive services. Effective outreach to consumers and reducing barriers to accessing these services is also key, as coverage alone will not ensure the use of preventive services.

EXAMPLES OF ACTIVITIES

- Delivery of high-quality screening for breast, cervical, and colorectal cancers that promotes high rates of appropriate use, including timely referral and follow-up.
- Organized systems of care to deliver high-quality clinical and other preventive services (as recommended by the U.S. Preventive Services Task Force and the Community Guide):
    - Electronic health records with registry function, decision support, and electronic reminders;
    - Team-based care;
    - Population care across a panel of patients;
    - Systems to ensure adequate follow-up of abnormal screening tests and timely treatment;
    - Patient-centered medical and dental homes.
- Health care information systems with automated physician prompts or patient reminder letters for screening and follow-up clinical counseling or referral.

- Quality improvement of clinical care for cancer screening and control of A1C, blood pressure, BMI, and cholesterol.
- Birthing hospitals using Baby Friendly Hospital Initiative policy recommendations and implementing "Ten Steps for Successful Breastfeeding in Hospitals."
- Delivery of smoking cessation services and treatments, including providing quitline coaching and cessation treatments as covered benefits.
- Increase access to and use of clinical and preventive oral health services.
- Provision of quality, accessible, and confidential family planning services, including contraceptive methods and services.

CDC DOMAIN 4

Strategies to improve community-clinical linkages, ensuring that communities support and clinics refer patients to programs that improve the management of chronic conditions. Such interventions ensure those with or at high risk for chronic diseases have access to quality community resources to best manage their conditions or disease risk.

Community-clinical linkages help ensure that people with or at high risk of chronic diseases have access to community resources and support to prevent, delay or manage chronic conditions once they occur. These supports include interventions such as clinician referral, community delivery and third-party payment for effective programs that increase the likelihood that people with heart disease, diabetes or prediabetes, and arthritis will be able to "follow the doctor's orders" and take charge of their health – improving their quality of life, averting or delaying the onset or progression of disease, avoiding complications (including during pregnancy), and reducing the need for additional health care.

EXAMPLES OF ACTIVITIES

- Available, accessible arthritis, diabetes, chronic disease self-management education programs, including physical activity programs, to reach at-risk populations in community settings, such as worksites, YMCA/YWCAs, schools, senior centers, and other local organizations.

CDC Four Key Domains: Domain 4 Strategies to Improve Community-Clinical Linkages (cont'd)

- Increase use of the CDC-approved evidence-based lifestyle change program to prevent or delay the onset of type 2 diabetes among people at high risk.
- Implement systems to increase provider referrals of people with prediabetes or multiple diabetes risk factors to sites offering the CDC-approved lifestyle change program.
- Use of allied health professionals to enhance management of high blood pressure/ cholesterol, A1C (e.g., pharmacist and/or dental provider model).
- Use of allied health providers (nurses, dentists, etc.), community health workers, and/ or patient navigators in supporting control of high blood pressure, high cholesterol, and A1C.
- Develop guidelines and systems within clinical care and community settings to address cancer survivorship by ensuring appropriate follow up care and promoting lifestyle interventions to reduce risk of recurrence.
- Effective outreach to the population to increase the use of clinical and other preventive services.
- Delivery of school-based dental sealant programs.
- Safe and effective use of contraception appropriate for women and men with chronic medical conditions.
- Coverage/reimbursement for diabetes self-management education and chronic disease self-management support programs.

APPENDIX C

HEALTHY PEOPLE 2020 HEART DISEASE AND STROKE OBJECTIVES

Objective Number	Objective Text	Target Measurement	Baseline Measurement	Baseline Data Type Description	Base-line Year	Target Setting Methodology	Data Source
HDS-1	(Developmental) Increase overall cardiovascular health in the U.S. population.						National Health and Nutrition Examination Survey (NHANES), CDC, NCHS
HDS-2	Reduce coronary heart disease deaths.	100.8	126	Coronary heart disease deaths per 100,000 population that occurred in 2007 (age adjusted to the year 2000 standard population).	2007	20% improvement	National Vital Statistics System–Mortality (NVSS–M), CDC, NCHS
HDS-3	Reduce stroke deaths.	33.8	42.2	Stroke deaths per 100,000 population that occurred in 2007 (age adjusted to the year 2000 standard population).	2007	20% improvement	NVSS–M, CDC, NCHS
HDS-4	Increase the proportion of adults who have had their blood pressure (BP) measured within the preceding 2 yrs and can state whether their BP was normal or high.	92.6%	90.6%	Percentage of adults aged 18 years or older who had their blood pressure measured within the preceding two years and could state whether it was normal or high in 2008.	2008	two percentage point improvement	National Health Interview Survey (NHIS), CDC, NCHS
HDS-5	Reduce the proportion of persons in the population with hypertension.						
HDS-5.1	Reduce the proportion of adults with hypertension.	26.9%	29.9%	Percentage of adults aged 18 years and older who had high blood pressure in 2005–08.	2005-2008	10% improvement	NHANES, CDC, NCHS
HDS-5.2	Reduce the proportion of children and adolescents with hypertension.	3.2%	3.5%	Percentage of children and adolescents aged 8 to 17 years who had high blood pressure in 2005–08.	2005-2008	10% improvement	NHANES, CDC, NCHS
HDS-6	Increase the proportion of adults who had their blood cholesterol checked within the preceding five yrs.	82.1%	74.6%	Percentage of adults aged 18 years and older who had their blood cholesterol checked within the preceding five years in 2008.	2008	10% improvement	NHIS, CDC, NCHS
HDS-7	Reduce the proportion of adults with high total blood cholesterol levels.	13.5%	15%	Percentage of adults aged 20 years or older who had total blood cholesterol levels of 240 mg/dL in 2005–08.	2005-2008	10% improvement	NHANES, CDC, NCHS

Objective Number	Objective Text	Target Measurement	Baseline Measurement	Baseline Data Type Description	Base-line Year	Target Setting Methodology	Data Source
HDS-8	Reduce the mean total blood cholesterol levels among adults.	177.9 mg/dl (mean)	197.7 mg/dl	The mean total blood cholesterol level for adults aged 20 years or older in 2005–08.	2005-2008	10% improvement	NHANES, CDC, NCHS
HDS-9	(Developmental) Increase the proportion of adults with prehypertension who meet the recommended guidelines.						NHANES, CDC, NCHS
HDS-9.1	(Developmental) Body mass index (BMI)						NHANES, CDC, NCHS
HDS-9.2	(Developmental) Saturated fat consumption						NHANES, CDC, NCHS
HDS-9.3	(Developmental) Sodium intake						NHANES, CDC, NCHS
HDS-9.4	(Developmental) Physical activity						NHANES, CDC, NCHS
HDS-9.5	(Developmental) Moderate alcohol consumption						NHANES, CDC, NCHS
HDS-10	(Developmental) Increase the proportion of adults with hypertension who meet the recommended guidelines.						
HDS-10.1	(Developmental) BMI						NHANES, CDC, NCHS
HDS-10.2	(Developmental) Saturated fat consumption						NHANES, CDC, NCHS
HDS-10.3	(Developmental) Sodium intake						NHANES, CDC, NCHS
HDS-10.4	(Developmental) Physical activity						NHANES, CDC, NCHS
HDS-10.5	(Developmental) Moderate alcohol consumption						NHANES, CDC, NCHS
HDS-11	Increase the proportion of adults with high blood pressure who are taking the prescribed medications to lower their blood pressure.	77.4%	70.4%	Percentage of adults aged 18 years or older with high blood pressure who were taking the prescribed medications to lower their blood pressure in 2005–08.	2005-2008	10% improvement	NHANES, CDC, NCHS
HDS-12	Increase the proportion of adults with hypertension whose blood pressure is under control.	61.2%	43.7%	Percentage of adults aged 18 years or older with high blood pressure who had it under control in 2005–08.	2005-2008	40% improvement	NHANES, CDC, NCHS
HDS-13	(Developmental) Increase the proportion of adults with elevated LDL cholesterol who have been advised by a health care provider regarding cholesterol-lowering management including lifestyle changes and, if indicated, medication.						
HDS-13.1	(Developmental) Cholesterol-lowering diet						NHANES, CDC, NCHS
HDS-13.2	(Developmental) Physical activity						NHANES, CDC, NCHS
HDS-13.3	(Developmental) Weight control						NHANES, CDC, NCHS
HDS-13.4	(Developmental) Prescribed drug therapy						NHANES, CDC, NCHS
HDS-14	(Developmental) Increase the proportion of adults with elevated LDL-cholesterol who adhere to prescribed LDL-cholesterol lowering management lifestyle changes and, if indicated, medication.						
HDS-14.1	(Developmental) Cholesterol-lowering diet						NHANES, CDC, NCHS

Objective Number	Objective Text	Target Measurement	Baseline Measurement	Baseline Data Type Description	Base-line Year	Target Setting Methodology	Data Source
HDS-14.2	(Developmental) Physical activity						NHANES, CDC, NCHS
HDS-14.3	(Developmental) Weight control						NHANES, CDC, NCHS
HDS-14.4	(Developmental) Prescribed drug therapy						NHANES, CDC, NCHS
HDS-15	(Developmental) Increase aspirin use as recommended among adults with no history of cardiovascular disease.						
HDS-15.1	(Developmental) Women aged 55 to 79 years						NAMCS/NHAMCS, CDC, NCHS
HDS-15.2	(Developmental) Men aged 45 to 79 years						NAMCS/NHAMCS, CDC, NCHS
HDS-16	Increase the proportion of adults aged 20 years or older who are aware of, and respond to, early warning symptoms and signs of heart attack.						
HDS-16.1	Increase the proportion of adults aged 20 years or older who are aware of the early warning symptoms and signs of heart attack and the importance of calling 911.	43.1%	39.2%	Percentage of adults aged 20 years or older who were aware of the early warning symptoms and signs of a heart attack and the importance of calling 911 in 2008.	2008	10% improvement	NHIS, CDC, NCHS
HDS-16.2	Increase the proportion of adults aged 20 years or older who are aware of early warning symptoms and signs of heart attack.	46.2%	42%	Percentage of adults aged 20 years or older who were aware of the early warning symptoms and signs of a heart attack in 2008.	2008	10% improvement	NHIS, CDC, NCHS
HDS-16.3	Increase the proportion of adults aged 20 years or older who are aware of the importance of calling 911.	94.9%	92.9%	Percentage of adults aged 20 years or older who were aware of the importance of accessing rapid emergency care by calling 911 in 2008.	2008	two percentage point improvement	NHIS, CDC, NCHS
HDS-17	(Developmental) Increase the proportion of adults aged 20 yrs or older who are aware of and respond to the early warning symptoms and signs of a stroke.						
HDS-17.1	(Developmental) Increase the proportion of adults who are aware of the early warning symptoms and signs of a stroke and the importance of calling 911.						NHIS, CDC, NCHS
HDS-17.2	(Developmental) Increase the proportion of adults aged 20 years or older who are aware of the early warning symptoms and signs of stroke.						NHIS, CDC, NCHS
HDS-17.3	(Developmental) Increase the proportion of adults aged 20 years or older who are aware of the importance of calling 911.						NHIS, CDC, NCHS
HDS-18	(Developmental) Increase the proportion of out-of-hospital cardiac arrests in which appropriate bystander and emergency medical services (EMS) were administered.						National EMS Information System (NEMSIS), National Highway Traffic Safety Admin (NHTSA), Dept of Transportation (DOT)

Objective Number	Objective Text	Target Measurement	Baseline Measurement	Baseline Data Type Description	Base-line Year	Target Setting Methodology	Data Source
HDS-19	Increase the proportion of eligible patients with heart attacks or strokes who receive timely artery-opening therapy as specified by current guidelines.						
HDS-19.1	Fibrinolytic therapy within 30 minutes of hospital arrival for patients with heart attacks.	75.1%	68.3%	Percentage of eligible heart attack patients who received fibrinolytics within 30 minutes of hospital arrival in 2009.	2009	10% improvement	ACTION Registry-GWTG, ACC Foundation and AHA
HDS-19.2	Percutaneous intervention (PCI) within 90 minutes of hospital arrival for patients with heart attacks.	97.5%	88.6%	Percentage of eligible heart attack patients who received percutaneous intervention within 90 minutes of hospital arrival in 2009.	2009	10% improvement	ACTION Registry-GWTG, American College of Cardiology (ACC) Foundation and AHA
HDS-19.3	(Developmental) Acute reperfusion therapy within three hours from symptom onset for patients with strokes.						GWTG–Stroke, AHA/ASA
HDS-20	(Developmental) Increase the proportion of adults with coronary heart disease or stroke who have their low-density lipoprotein (LDL) cholesterol level at or below recommended levels.						
HDS-21	(Developmental) Increase the proportion of adults with a history of cardiovascular disease who are using aspirin or antiplatelet therapy to prevent recurrent cardiovascular events.						NAMCS/NHAMCS, CDC, NCHS
HDS-22	(Developmental) Increase the proportion of adult heart attack survivors who are referred to a cardiac rehabilitation program at discharge.						ACTION Registry–GWTG, ACC Foundation and AHA
HDS-23	(Developmental) Increase the proportion of adult stroke survivors who are referred to a stroke rehabilitation program at discharge.						GWTG– Stroke Module, AHA/ASA
HDS-24	Reduce hospitalizations of older adults with heart failure as the principal diagnosis.						
HDS-24.1	Adults aged 65 to 74 years	8.8	9.8	Hospitalizations for heart failure per 1,000 population aged 65 to 74 years that occurred in 2007.	2007	10% improvement	Chronic Conditions Warehouse (CCW), CMS
HDS-24.2	Adults aged 75 to 84 years	20.2	22.4	Hospitalizations for heart failure per 1,000 population aged 75 to 84 years that occurred in 2007.	2007	10% improvement	Chronic Conditions Warehouse (CCW), CMS
HDS-24.3	Adults aged 85 years and older	38.6	42.9	Hospitalizations for heart failure per 1,000 population aged 85 years and older that occurred in 2007.	2007	10% improvement	Chronic Conditions Warehouse (CCW), CMS

APPENDIX D

U.S. PREVENTIVE SERVICES TASK FORCE (USPSTF) SCREENING GUIDELINES (2012)

ASPIRIN FOR THE PREVENTION OF CARDIOVASCULAR DISEASE

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	Men age 45-79 years	Women age 55-79 years	Men age under 45 yrs	Women age under 55 yrs	Men & Women age 80 yrs or older
Recommendation	Encourage aspirin use when potential CVD benefit (MIs prevented) outweighs potential harm of GI hemorrhage.	Encourage aspirin use when potential CVD benefit (strokes prevented) outweighs potential harm of GI hemorrhage.	Do not encourage aspirin use for MI prevention.	Do not encourage aspirin use for stroke prevention.	No Recommendation
	Grade: A		Grade: D		Grade: I (Insufficient Evidence)

HOW TO USE THIS RECOMMENDATION

Shared decision making is strongly encouraged with individuals whose risk is close to (either above or below) the estimates of 10-year risk levels indicated below. As the potential CVD benefit increases above harms, the recommendation to take aspirin should become stronger.

To determine whether the potential benefit of MIs prevented (men) and strokes prevented (women) outweighs the potential harm of increased GI hemorrhage, both 10-year CVD risk and age must be considered.

Risk Level at which CVD Events Prevented (Benefit) Exceeds GI Harms

Men		Women	
10-year CHD risk		10-year stroke risk	
Age 45-59 years	≥ 4%	Age 55-59 years	≥ 3%
Age 60-69 years	≥ 9%	Age 60-69 years	≥ 8%
Age 70-79 years	≥ 12%	Age 70-79 years	≥ 11%

The table above applies to adults who are not taking NSAIDs and who do not have upper GI pain or a history of GI ulcers.

NSAID use and history of GI ulcers raise the risk of serious GI bleeding considerably and should be considered in determining the balance of benefits and harms. NSAID use combined with aspirin use approximately quadruples the risk of serious GI bleeding compared to the risk with aspirin use alone. The rate of serious bleeding in aspirin users is approximately two- to three- times higher in patients with a history of GI ulcers.

Abbreviations: CHD = coronary heart disease, CVD = cardiovascular disease, GI = gastrointestinal, HDL = high-density lipoprotein, MI = myocardial infarction, NSAIDs = nonsteroidal anti-inflammatory drugs..

SCREENING GUIDELINES FOR HIGH BLOOD PRESSURE IN ADULTS

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	Adult general population[1]
Recommendation	Screen for high blood pressure Grade: A
Screening Tests	High blood pressure (hypertension) is usually defined in adults as: systolic blood pressure (SBP) of 140 mm Hg or higher, or diastolic blood pressure (DBP) of 90 mm Hg or higher. Due to variability in individual blood pressure measurements, it is recommended that hypertension be diagnosed only after two or more elevated readings are obtained on at least two visits over a period of one to several weeks.
Screening Intervals	The optimal interval for screening adults for hypertension is not known. The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommends: Screening every two years with BP less than120/80. Screening every year with SBP of 120-139 mmHg or DBP of 80-90 mmHg.
Treatment	A variety of pharmacological agents are available to treat hypertension. JNC 7 guidelines for treatment of hypertension can be accessed at http://www.nhlbi.nih.gov/guidelines/hypertension/jncintro.htm. The following non-pharmacological therapies are associated with reductions in blood pressure: Reduction of dietary sodium intake. Potassium supplementation. Increased physical activity, weight loss. Stress management. Reduction of alcohol intake.
Other Relevant USPSTF Recommendations	Adults with hypertension should be screened for diabetes. Adults should be screened for hyperlipidemia (depending on age, sex, risk factors) and smoking. Clinicians should discuss aspirin chemoprevention with patients at increased risk for cardiovascular disease. These recommendations and related evidence are available at http://www.uspreventiveservicestaskforce.org.

[1] This recommendation applies to adults without known hypertension.

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.

SCREENING GUIDELINES FOR LIPID DISORDERS IN ADULTS

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	**Men age 35 years and older** **Women age 45 years and older who are at increased risk for coronary heart disease (CHD)**	**Men ages 20 to 35 years who are at increased risk for CHD** **Women ages 20 to 45 years who are at increased risk for CHD**	**Men ages 20 to 35 years** **Women age 20 years and older who are not at increased risk for CHD**
Recommendation	Screen for lipid disorders. Grade: A	Screen for lipid disorders. Grade: B	No recommendation for or against screening Grade: C
Risk Assessment	Consideration of lipid levels along with other risk factors allows for an accurate estimation of CHD risk. Risk factors for CHD include diabetes, history of previous CHD or atherosclerosis, family history of cardiovascular disease, tobacco use, hypertension, and obesity (body mass index greater than or equal to 30 kg/m2).		
Screening Tests	The preferred screening tests for dyslipidemia are measuring serum lipid (total cholesterol, high-density and low-density lipoprotein cholesterol) levels in non-fasting or fasting samples. Abnormal screening results should be confirmed by a repeated sample on a separate occasion, and the average of both results should be used for risk assessment.		
Timing of Screening	The optimal interval for screening is uncertain. Reasonable options include every five years, shorter intervals for people who have lipid levels close to those warranting therapy, and longer intervals for those not at increased risk who have had repeatedly normal lipid levels. An age at which to stop screening has not been established. Screening may be appropriate in older people who have never been screened; repeated screening is less important in older people because lipid levels are less likely to increase after age 65 years.		
Interventions	Drug therapy is usually more effective than diet alone in improving lipid profiles, but choice of treatment should consider overall risk, costs of treatment, and patient preferences. Guidelines for treating lipid disorders are available from the National Cholesterol Education Program of the National Institutes of Health (http://www.nhlbi.nih.gov/about/ncep/).		
Balance of Benefits and Harms The benefits of screening for and treating lipid disorders in men age 35 and older and women age 45 and older at increased risk for CHD substantially outweigh the potential harms		The benefits of screening for and treating lipid disorders in young adults at increased risk for CHD moderately outweigh the potential harms.	The net benefits of screening for lipid disorders in young adults not at increased risk for CHD are not sufficient to make a general recommendation.
Other Relevant USPSTF Recommendations	The USPSTF has made recommendations on screening for lipid disorders in children and screening for carotid artery stenosis, coronary heart disease, high blood pressure, and peripheral arterial disease. These recommendations are available at http://www.uspreventiveservicestaskforce.org/.		
For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.			

COUNSELING AND INTERVENTIONS TO PREVENT TOBACCO USE AND TOBACCO-CAUSED DISEASE IN ADULTS AND PREGNANT WOMEN

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	Adults age 18 years or older	Pregnant women of any age
Recommendation	Ask about tobacco use. Provide tobacco cessation interventions to those who use tobacco products. Grade: A	Ask about tobacco use. Provide augmented pregnancy-tailored counseling for women who smoke. Grade: A
Counseling	The "5-A" framework provides a useful counseling strategy: Ask about tobacco use. Advise to quit through clear personalized messages. Assess willingness to quit. Assist to quit. Arrange follow-up and support. Intensity of counseling matters: brief one-time counseling works; however, longer sessions or multiple sessions are more effective. Telephone counseling "quit lines" also improve cessation rates.	
Pharmacotherapy	Combination therapy with counseling and medications is more effective than either component alone. FDA-approved pharmacotherapy includes nicotine replacement therapy, sustained-release bupropion, and varenicline.	The USPSTF found inadequate evidence to evaluate the safety or efficacy of pharmacotherapy during pregnancy
Implementation	Successful implementation strategies for primary care practice include: Instituting a tobacco user identification system. Promoting clinician intervention through education, resources, and feedback. Dedicating staff to provide treatment, and assessing the delivery of treatment in staff performance evaluations.	
Other Relevant USPSTF Recommendations	Recommendations on other behavioral counseling topics are available at http://www.uspreventiveservicestaskforce.org/	

Abbreviations: FDA = U.S. Food and Drug Administration; USPSTF = U.S. Preventive Services Task Force

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.

SCREENING GUIDELINES FOR TYPE 2 DIABETES MELLITUS IN ADULTS

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	Asymptomatic adults with sustained blood pressure higher than 135/80 mm Hg	Asymptomatic adults with sustained blood pressure 135/80 mm Hg or lower
Recommendation	Screen for type 2 diabetes mellitus Grade: B	No recommendation Grade: I (Insufficient Evidence)
Risk Assessment	These recommendations apply to adults with no symptoms of type 2 diabetes mellitus or evidence of possible complications of diabetes. Blood pressure measurement is an important predictor of cardiovascular complications in people with type 2 diabetes mellitus. The first step in applying this recommendation should be measurement of blood pressure (BP). Adults with treated or untreated blood pressure higher than 135/80 mm Hg should be screened for diabetes.	
Screening Tests	Three tests have been used to screen for diabetes: Fasting plasma glucose (FPG). two-hour postload plasma. Hemoglobin A1c. The American Diabetes Association (ADA) recommends screening with FPG, defines diabetes as FPG 126 mg/dL or greater, and recommends confirmation with a repeated screening test on a separate day.	
Screening Intervals	The optimal screening interval is not known. The ADA, on the basis of expert opinion, recommends an interval of every three years.	
Suggestions for practice regarding insufficient evidence	When blood pressure is 135/80 mm Hg or lower, screening may be considered on an individual basis when knowledge of diabetes status would help inform decisions about coronary heart disease (CHD) preventive strategies, including consideration of lipid-lowering agents or aspirin. To determine whether screening would be helpful on an individual basis, information about 10-year CHD risk must be considered. For example, if CHD risk without diabetes was 17 percent and risk with diabetes was greater than 20 percent, screening for diabetes would be helpful because diabetes status would determine lipid treatment. In contrast, if risk without diabetes was 10 percent and risk with diabetes was 15 percent, screening would not affect the decision to use lipid-lowering treatment.	
Other relevant information from the USPSTF and the Community Preventive Services Task Force	Evidence and USPSTF recommendations regarding blood pressure, diet, physical activity, and obesity are available at http://www.uspreventiveservicestaskforce.org. The reviews and recommendations of the Task Force on Community Preventive Services may be found at http://www.thecommunityguide.org.	
For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.		

SCREENING FOR DEPRESSION IN ADULTS

Clinical Summary of U.S. Preventive Services Task Force Recommendation (2012)

Population	Nonpregnant adults 18 years or older	
Recommendation	Screen when staff-assisted depression care supports are in place to assure accurate diagnosis, effective treatment, and follow-up. *(See the Suggestions for Practice row of this table for further explanation.)* Grade: B	Do not routinely screen when staff-assisted depression care supports are not in place. Grade: C
Risk Assessment	Persons at increased risk for depression are considered at risk throughout their lifetime. Groups at increased risk include persons with other psychiatric disorders, including substance misuse; persons with a family history of depression; persons with chronic medical diseases; and persons who are unemployed or of lower socioeconomic status. Also, women are at increased risk compared with men. However, the presence of risk factors alone cannot distinguish depressed patients from nondepressed patients.	
Screening Tests	Simple screening questions may perform as well as more complex instruments. Any positive screening test result should trigger a full diagnostic interview using standard diagnostic criteria.	
Timing of Screening	The optimal interval for screening is unknown. In older adults, significant depressive symptoms are associated with common life events, including medical illness, cognitive decline, bereavement, and institutional placement in residential or inpatient settings.	
Balance of Benefits and Harms		Limited evidence suggests that screening for depression in the absence of staff-assisted depression care does not improve depression outcomes.
Suggestions for Practice	"Staff-assisted depression care supports" refers to clinical staff that assists the primary care clinician by providing some direct depression care and/or coordination, case management, or mental health treatment.	
Relevant USPSTF Recommendations	Related USPSTF recommendations on screening for suicidality and screening children and adolescents for depression are available at http://www.uspreventiveservicestaskforce.org.	
For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/.		

OTHER RELEVANT USPSTF RECOMMENDATIONS

The USPSTF has made recommendations on screening for abdominal aortic aneurysm, carotid artery stenosis, coronary heart disease, alcohol use, peripheral arterial disease, and many other conditions. These recommendations are available at http://www.uspreventiveservicestaskforce.org.

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statements, and supporting documents, please go to http://www.uspreventiveservicestaskforce.org/

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Take Heart Alaska

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