

Chapter 9

Heart Disease and Stroke

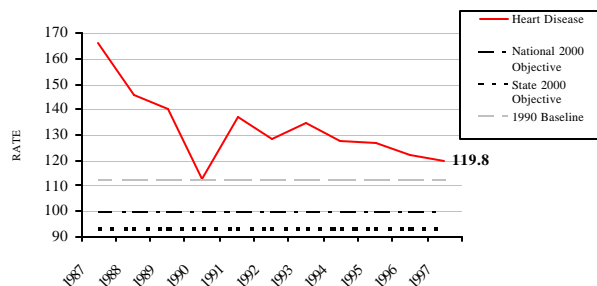
Introduction

Diseases of the heart and blood vessels are the number one killer of American men and women today. Coronary heart disease (CHD) is the most prevalent of cardiovascular diseases (CVD). CHD has been the leading cause of death in America since the 1920s, and is a common cause of disease. Approximately 14 million Americans have CHD.

The death rate from CHD peaked in the mid-1960s, then fell steadily until the early 1990s. Potential reasons for the decline in CHD mortality include improvements in detection, diagnosis, and treatment. Attention to risk factors (particularly high blood pressure and high blood cholesterol), and major changes in lifestyle behaviors (particularly decreased tobacco use and reduced intake of saturated fat and dietary cholesterol) also contributed to the decline. Yet despite this progress, CHD remains the leading cause of death in the U.S. with nearly 1.1 million Americans suffering heart attacks and nearly 500,000 dying from coronary heart disease annually. Almost half of these deaths occurred within an hour of the onset of symptoms.

In the early 1990s, the downward trend in heart disease deaths began to slow nationally. Iowa's heart disease death rate had nearly leveled by 1995. At least part of this trend can be explained in terms of risk factors.

Health Status Indicator
Heart Disease Rates
Rate Per 100,000



Note: Scale Adjusted To Highlight Value Range

Source: Iowa Department of Public Health

Overweight and obesity in Iowa increased rapidly (from 25.3% in 1990 to 32.7% in 1997). Improvements in blood pressure and blood cholesterol control began to level off. The majority of Iowans are physically active less than one hour per week. Fat intake has decreased, but it has, for the most part, been replaced with sugars rather with fruits and vegetables. Of the estimated 146,000 Iowans with

diabetes, approximately 34% are undiagnosed. While tobacco use in adults has remained constant, youth are smoking more.

Stroke afflicts approximately 600,000 Americans each year, and kills about 158,000, making it the nation's third leading cause of death. More Americans are disabled by stroke than by any other single disease. It is estimated that by the year 2050, more than one million individuals will suffer strokes each year. The stroke mortality rate is highest in the Southeastern United States. Like the CHD mortality rate, stroke death rates declined from the 1960s to the early 1990s, at least in part because of the national emphasis on control of high blood pressure. Since 1992, the age-adjusted decline in stroke mortality has flattened, and age-specific death rates have begun to climb.

Stroke shares several risk factors with coronary heart disease, including high blood pressure, high blood cholesterol, smoking, and obesity. Preventing or controlling risk factors and receiving the most effective treatment in a timely manner can reduce stroke deaths or delay them.

While the statistics cited above apply to the general American population, certain at-risk populations are notable for increased risk. Coronary heart disease disproportionately affects African-Americans. In 1995, African-Americans had a 39% higher CHD mortality rate than whites. Age-adjusted mortality rates were 42% higher for African-American males and 65% higher for African-American females. Age-specific heart disease death rates are higher in both African-American males and females than in whites until age 85.

The age-adjusted stroke mortality rate is 80% higher in African-Americans than in whites. African-American females born before 1950, and African-American males born after 1950, are most likely to die of stroke.

Women are much more likely than men to die following a heart attack. Twenty-seven percent of men die within one year after a heart attack. The figure is 42% for women. At older ages, women are twice as likely as men to die within a few weeks after suffering a heart attack. This is true even when co-existing conditions and other unfavorable prognostic factors are considered.

Women also suffer more procedure-related complications than men when treated with new devices, though more study is needed to determine why these complications occur and whether gender-specific interventions reduce this risk. White females have the lowest stroke death rate.

The United States population is rapidly aging. Currently, more than 25% of the population is aged 50 years or older. By the year 2032, it is expected that about 33% of Americans will be aged 50 years or older. The population over age 65 is increasing even more rapidly, and the population over age 85 has increased as well. Heart disease and stroke account for 40% of all deaths among people aged 65-74, and nearly 60% of all deaths of people aged 85 years and over. Iowa's population is aging more quickly than populations in most other states.

African-Americans, women and the elderly are generally less apt to know the early symptoms of heart attack and stroke, or to seek care early in response to the symptoms. These groups should, therefore, be targeted with interventions encouraging early detection and treatment of disease, as well as prevention interventions.

While much has been learned in the last 30 years about heart disease and stroke prevention, diagnosis and treatment, new strategies and protocols have not been implemented everywhere. Geographically, basic or enhanced 911 service is available to about 80% of Iowa's population. Often, small local hospitals do not have funding to purchase the latest and best technology. These factors increase heart disease and stroke risk for rural and low-income populations.

The total cost of cardiovascular diseases (CVD) and stroke in the United States in 1999 is projected to be \$286.5 billion. This figure includes 1) direct costs (physician and other health professional visits, hospital and nursing home services, medications, home health and other medical durable equipment); 2) indirect costs including lost earnings based on work-loss days, days lost due to illness by homemakers, and lost earnings by those unable to work or in long-term institutions; and 3) indirect costs representing lost income from future earnings.

Changing lifestyle behaviors can significantly reduce cardiovascular morbidity and mortality. Tobacco use, physical inactivity, high blood pressure, high blood cholesterol, and obesity are CVD risk factors that can be modified through lifestyle behavior change.

Using population and individualized approaches can prevent, reduce, or delay modifiable CVD and stroke risk factors by promoting lifestyle behavior change. Programs that emphasize the need for lifestyle behavior change and provide the skills necessary to make those changes, and efforts that improve policy and environmental supports for lifestyle behavior change are "musts."

This chapter emphasizes prevention, early diagnosis, and treatment strategies that reduce heart disease and stroke risk. Specific action steps deal with cardiovascular

screening to reduce high blood pressure and high blood cholesterol risk. Other cardiovascular disease risk factors, including physical inactivity, tobacco use, obesity, and diabetes, are addressed in other chapters of this document. Every effort will be made to coordinate and cooperate with others who are seeking to lower risk factors in a coherent program of CVD and stroke risk reduction.

Goal Statements and Action Steps

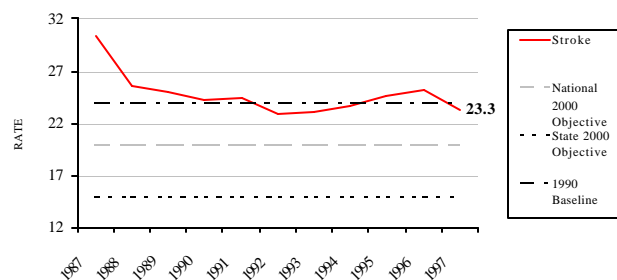
9-1 Goal Statement

Reduce premature death and disability from cardiovascular disease by reducing coronary heart disease deaths to no more than 92.4 per 100,000 and stroke deaths to no more than 21 per 100,000 by 2010. (Baseline: The 1997 Iowa age-adjusted coronary heart disease death rate was 102.7 per 100,000; the Iowa age-adjusted stroke death rate was 23.3 per 100,000.)

Rationale

Death rates for both coronary heart disease and stroke declined steadily from the mid-1960s to the early 1990s. The trend since that time, while still downward, has begun to flatten. The slowing of the trend toward lower death rates is even more evident in Iowa. The trend in stroke death rates has been flat during the entire past decade.

Health Status Indicator
Stroke Rates
Rate Per 100,000



Note: Scale Adjusted To Highlight Value Range

Source: Iowa Department of Public Health

Data from the Iowa Center for Health Statistics indicate that in 1997, a total of 146,199 individuals were discharged from hospitals with a primary diagnosis of cardiovascular disease. This figure represents a 512.5 per 10,000 disease rate. The average length of hospital stay was 5.5 days. In 1997, 10,275 individuals were discharged from hospitals with a primary diagnosis of stroke. This figure represents a

35.4 per 10,000 disease rate. The average length of hospital stay for stroke patients was 4.9 days.

Years of potential life lost are defined as the number of years of life lost when an individual dies earlier than expected. According to the Iowa Center for Health Statistics, in 1997 there were 12,714 years of potential life lost due to heart disease, and 1,889 years of potential life lost due to stroke.

Establishment of coalitions at the state and local levels can be effective in preventing or delaying the onset of cardiovascular disease and stroke. The coalitions can assess the need for, implement, and evaluate cardiovascular programming that creates public awareness of CVD and the burden of stroke. The coalitions can provide Iowans with the necessary skills to reduce the risk of developing CVD and stroke and stimulate an environment and public health policies that encourage necessary lifestyle behavior changes. Such programming has been effective in trials in the state of Iowa and throughout the nation.



Cardiovascular screening and education programs that identify individuals at risk of developing hypertension and high blood cholesterol and that also teach the skills necessary to reduce that risk have been demonstrated effective over the past two to three decades. Because of these community-wide efforts, most Americans now have their blood pressure checked at least every two years, know their blood pressure and cholesterol numbers, and understand the significance of these numbers.

It is important, because of rapidly advancing technology and pharmaceutical therapies, that health care providers receive the most up-to-date and accurate education, both initially and on a continuing basis for prevention and treatment. This will enable professionals to appropriately detect and treat heart disease and stroke, and to help patients/clients prevent or reduce risk where possible. Education guidelines need to be set to ensure that all Iowa health professionals receive appropriate education about heart disease and stroke, including prevention and risk-

reduction strategies, methods of diagnosis, at-risk populations, and treatment pathways to ensure rapid entry into the health care system when needed.

Schools, worksites, places of worship, and other community settings are effective channels for cardiovascular screening and education programs. During the next decade, efforts to establish and maintain comprehensive cardiovascular wellness programs through these channels need to be expanded.

Messages and programming targeted to high-risk Iowa populations, including African-Americans, women, the elderly, and low-income and rural families, need to be developed and tested before being used. While Iowa's race and/or ethnic minority populations are small, they have an increased risk for heart disease and stroke that must be addressed. Also, since Iowa's population is aging rapidly, the needs and desires of the aging population must be considered. And because low-income and rural families often have less access to health care and public health programming than urban and higher-income populations, efforts must be made to reach these at-risk populations.

The following action plan, achieved in conjunction with the action plans in other Healthy Iowans 2010 chapters relating to cardiovascular risk factors, forms a coherent, comprehensive plan to reduce death and disability from cardiovascular disease and stroke.

9-1.1 Action Step

Establish a statewide cardiovascular health council in the year 2000 to 1) coordinate and facilitate statewide cardiovascular disease and stroke risk-reduction activities; 2) identify and promote appropriate messages for at-risk populations (women, older adults, minority, rural, and low-income groups) and the general public; 3) develop a state-based action plan to guide state and community organizations in planning and conducting comprehensive cardiovascular risk-reduction programs; and 4) seek additional funding to support personnel, member time and expenses, and goal and action steps (An Iowa Department of Public Health action step.)

9-1.2 Action Step

Establish community-based cardiovascular disease and stroke risk-reduction programs for general and identified at-risk populations by 2005 in 20 Iowa counties by:

- a. surveying Iowa's county and community health agencies and organizations to identify existing cardiovascular programs and to evaluate their degree of success, and create and distribute a statewide cardiovascular program directory by 2002;

- b. identifying successful cardiovascular programming strategies used in Iowa and the nation, and by establishing and maintaining a clearinghouse of information on successful programming strategies by 2002;
- c. developing a competitive grant process to provide funding to communities, worksites, and schools to conduct cardiovascular programs which use the latest information on successful behavior change, as well as policy and environmental strategies.

(An Iowa Department of Public Health action step.)

9-1.3 Action Step

Update, distribute, and promote uniform cardiovascular screening and education guidelines for use by local public health agencies, local affiliates of the American Heart Association, and school and worksite wellness programs by 2003. (An Iowa Department of Public Health and American Heart Association, Iowa Affiliate action step.)

9-1.4 Action Step

Establish a Cardiovascular Health Communication Committee as part of the Iowa Cardiovascular Health Council by 2001 with members of the committee to include health care professional representatives of the health insurance industry, Medicare, and local and statewide broadcast and print media which will handle the following tasks: 1) develop a health communications program that targets the needs of high-risk populations (women, the elderly, minorities, and rural and low-income families) by 2002; 2) develop and pretest education materials to support implementation of the statewide health communication program by 2003; and 3) promote and distribute the health communication program statewide by 2003. (An Iowa Cardiovascular Health Council, American Heart Association, Iowa Department of Public Health action step.)

9-1.5 Action Step

Collaborate with state and local professional associations, health educators, local hospitals, and pharmaceutical companies to develop cardiovascular disease and stroke guidelines for initial and continuing education curricula for health care providers including primary care physicians, physician assistants, nurse practitioners, pharmacists, dietitians and nurses. The curricula will include prevention, diagnosis, and treatment strategies for at-risk populations by 2008. (An Iowa Cardiovascular Health Council action step.)

9-1.6 Action Step

Survey Iowa employers with more than 50 employees to identify existing employee wellness programs that address

cardiovascular health, and expand implementation of cardiovascular screening and education programs to employees at 30% of Iowa's worksites by 2006. (An Iowa Cardiovascular Health Council, American Heart Association, Central Iowa Wellness Council, Iowa State University Extension action step.)

9-1.7 Action Step

Strengthen community support by collaborating with local businesses, health care providers, local points of contact, such as public health nurses, American Heart Association volunteers, and elementary school curriculum directors to establish cardiovascular health programs in all Iowa elementary schools by 2007. (An Iowa Cardiovascular Health Council, American Heart Association action step.)

9-1.8 Action Step

Support and promote enhanced 911 services along with the development and implementation of public access defibrillation programs in all Iowa counties to promote rapid entrance into the health care system for all Iowans following the onset of signs and/or symptoms of a stroke or heart attack by 2010. (An Iowa Cardiovascular Health Council, Iowa Department of Public Health action step.)

9-1.9 Action Step

Develop and facilitate implementation of procedures for acute management of chest pain, acute myocardial infarction (heart attacks), and stroke (for example, thrombolytic therapy) by emergency medical personnel and community hospitals by 2010. (An American Heart Association, Iowa Cardiovascular Health Council action step.)

9-2 Goal Statement

Establish and maintain a surveillance system in 20 Iowa counties to provide agencies conducting community cardiovascular screening and education programs with the ability to monitor cardiovascular disease risk factors by 2007. (Baseline: A cardiovascular disease risk-factor tracking database [HEARTPC] has been developed and distributed to 40 Iowa agencies on request, but the number of agencies conducting screenings is unknown, and agencies are not required to share; also, data on cardiovascular disease are scattered.)

Rationale

Much data on cardiovascular disease and stroke is available through various sources. The Behavioral Risk Factor Surveillance System provides annual data on lifestyle behaviors and risk factors. Additionally, hospital discharge data are kept and can provide insight into the

disability caused by cardiovascular disease and stroke. Also, death data are available, and may be useful in determining progress toward meeting CVD risk-reduction and prevention goals. A computer database that is able to track clients of community cardiovascular screening programs from initial screening through follow-up and referral, when necessary, is available now.

Gathering these data and making health professionals and the public aware of their significance, is an important step in reducing CVD and stroke risk, and in evaluating such efforts.

An important step in eliminating health disparities is to collect data relevant to at-risk populations. Currently, some Iowa-specific data are available by gender, but such data need to be organized into a coherent report that can be distributed to appropriate agencies and organizations, as well as to the media, policymakers, and the public.

There are almost no Iowa-specific data on cardiovascular disease and stroke for racial and/or ethnic minorities, rural and low-income populations, and the elderly. The computer database mentioned above would provide this information, and could become the basis for an Iowa Cardiovascular Risk Surveillance System. Throughout the 1990s, attempts have been made to institute this surveillance system with little success. Because of the potential for increased funding in the year 2000 and beyond, it is appropriate to continue attempts to collect meaningful data on at-risk populations to provide a baseline for more appropriate, targeted programming.

The action plan below will establish a comprehensive data system to measure CVD and stroke risk and to evaluate efforts to reduce that risk.

9-2.1 Action Step

Revise and update a uniform, computerized data collection system to gather cardiovascular risk factor data on at-risk populations and on the community at large for use by community agencies and organizations currently conducting cardiovascular screening and education programs by 2004. (An Iowa Department of Public Health, American Heart Association action step.)

9-2.2 Action Step

Develop a protocol for the evaluation of community cardiovascular screening and education programs for the general population and for identified at-risk populations by 2003. (An Iowa Cardiovascular Health Council, Iowa Department of Public Health, American Heart Association action step.)

9-2.3 Action Step

Develop a mechanism for sharing the most current, accurate cardiovascular disease data with community agencies and organizations conducting cardiovascular screening and education programs by 2003. (An Iowa Cardiovascular Health Council action step.)

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