Prevention: The Key to Progress

President’s Address to the 65th Scientific Sessions of the American Heart Association
November 16, 1992
New Orleans Convention Center

Edward S. Cooper, MD

The American Heart Association is well and thriving because of the farsighted vision and progressive planning of its officers, volunteers, and staff, secured by the support of 3.6 million AHA volunteers throughout the United States and abroad. With this leadership and support, the AHA is positioned to achieve even greater success in cardiovascular research, education, and service.

The central theme of my term as AHA president is the prevention of cardiovascular diseases and stroke. This theme will be paramount as we work to achieve the primary purpose of the AHA: the reduction of human suffering and death from diseases of the heart and circulation. We face an enormous challenge in fulfilling our mission.

The Challenge

Prevention is the key to progress in the control of cardiovascular diseases and stroke. This means not only the prevention of disability and death but also the avoidance of the need for expensive treatments for risk factors and tertiary complications. Although prevention is our most important goal, we are also aware that its close ally is early detection. Recognition of pathological processes early in their evolution makes possible prompt intervention to slow or arrest the processes or even reverse them.

To achieve the goal of preventing cardiovascular diseases and stroke, it is important to avoid the occurrence of the major risk factors themselves. This is not an unrealistic task, but success will require much more research in addition to greater efforts at ensuring that the public knows and appreciates the magnitude of the problems of cardiovascular diseases and stroke. Although cardiovascular diseases and stroke have greatly declined over the past several decades, they are still the number one killer of people in the United States. Because of this, all adults should be aware of the warning signs of heart disease and stroke, should know their blood pressure and blood cholesterol levels, should not smoke, should monitor their salt and fat intake, and should, if possible, engage in at least moderate exercise. Medical professionals should take advantage of the clinical guidelines and professional education programs sponsored by the AHA and associated groups, thereby incorporating into clinical practice the advances achieved by research for the care of patients with cardiovascular diseases.

Minorities, low socioeconomic groups, and the uninsured and underinsured require special attention, again with emphasis on prevention and early detection. The AHA is dedicated to addressing the special needs of these communities as well as the needs of the more affluent of our society.

Background

The AHA will soon be raising $300 million annually to fund its many programs. Since 1949, the year the AHA became a voluntary health organization, it has raised more than $1 billion for basic biomedical research through this partnership of scientists and laypeople. We hope to reach a cumulative total of $2 billion for research by the end of this decade.

Our public education and community programs reach 30 million Americans annually. These are one-on-one interactions with Americans from all walks of life—situations in which we promote the idea of living a healthy life and dealing with the risk factors for cardiovascular diseases and stroke. These interactions occur in doctors’ offices, schools, businesses, and hospital clinics. We have developed a network for public education that is second to none in the United States.

Health care issues were vigorously debated in the United States during the November general election. Because cardiovascular diseases and stroke are responsible for 43% of all deaths in the United States today (Figure 1), the AHA has a vested interest in the continuing debates on health care. I believe that attempts to find concrete solutions to the problems of health care access are on the horizon. We can only hope that humanism and goodwill for all people will be the driving forces in political deliberations and actions.

All of these national developments come at a time when great potential exists for world peace, prosperity, brotherhood, and unity. Planet Earth is growing smaller, but it remains diverse. The recent momentous political developments in the Eurasian region accentuate that this is a time of enormous change in a world of remarkable diversity. The AHA is taking measured steps to develop relationships with other countries. As I see it, the United States is in some ways a microcosm of the world, and the AHA is a microcosm of the United
States. We must be grateful for our blessings and assets of diversity and take advantage of our opportunities.

**Science Promotion and Integration**

Although facing these worldly challenges and opportunities may be rewarding, the highest priorities must remain those on the home front. For the AHA, this will mean confronting domestic concerns that we have never encountered before. This is indeed a time of change. A Stroke Council volunteer recently asked me what I consider to be the major issues facing the AHA today. I identified two.

First, our most urgent need is to learn how to enhance Americans' awareness, knowledge, and appreciation of the value of biomedical research. Second, the AHA must establish specific mechanisms to ensure that all of its scientific volunteers and councils can easily exchange ideas, information, and programs to ensure good communication and rational programs. This horizontal integration is especially pertinent in areas that encompass several scientific disciplines: for example, vascular biology and molecular biology, two areas of basic science that have enormous and challenging implications for clinicians and patient-oriented investigators. It is difficult for clinicians to stay abreast in such fields, to understand the relevant clinical implications of research and to give appropriate clues and guidance to basic scientists. Research is the cornerstone of enduring programs in prevention as well as in diagnosis and treatment. Increased biomedical research funding is the highest priority of the AHA, and this is implicit in the first of the two major issues mentioned above. The American people must understand the value of biomedical research in order to designate adequate funding for research.

Though cardiovascular diseases kill more people, federal research funding has long been much higher for cancer and, in recent years, for AIDS. According to the fiscal 1993 budget for the Department of Health and Human Services, the amount spent per death for AIDS research is about six times more than for cancer research and about 23 times more than for heart disease and stroke research combined (Figure 2).

Increased funding of biomedical research would make it possible to develop the needed advances in the prevention and treatment of cardiovascular diseases and stroke. One of our most important goals is to explain how medical advances resulting from research will lead to improved health.

It is essential that the public understand why increased research funding is critical for continued progress in promoting good health. For example, research identified the primary risk factors for cardiovascular diseases and stroke. An increased effort in research is essential if we are to monitor and quantify the prevalence of risk factors in various communities, such as the high salt intake (30 grams per day) in northern China, a probable cause of China's having the world's highest stroke death rate, and the high rate of hypertension among African-Americans in the United States. With research data, appropriate preventive measures could then be identified and instituted.

The AHA has recently appointed the Science Promotion Task Force. The title of the task force's initiative is "Science...Research...and Tomorrow." The agenda of the task force includes strategies to 1) enhance Americans' knowledge, awareness, and appreciation of the value of biomedical research, 2) increase the involvement of AHA volunteer scientists in public cardiovascular education programs, and 3) determine how to best promote future biomedical careers as an option for children and young adults.

Early last spring I addressed a statewide conference representing more than 2,000 high school science teachers in Columbia, S.C., and took the opportunity to launch our science promotion initiative and promote biomedical careers. My personal advice for young people has always been "Stay in school, study hard, strive for excellence." We must do a better job of teaching science to our young people and inspiring them to choose careers in science and medicine. Increased numbers and quality of research workers and science teachers will no doubt result someday if opportunities for science promotion among the young, such as my visit to South Carolina, are expanded throughout the United States. As an additional benefit, the families of our young people may develop a better appreciation of biomedical research.

**Stroke Programs**

Despite a 59% decrease in stroke mortality rates over the past two decades (Figures 3 and 4), stroke remains the third highest cause of death and a leading cause of disability and suffering in the United States. Increased attention and adherence to preventive measures are likely
to decrease mortality rates even further. However, there are ominous signs that our dramatic progress in the control of stroke may be ending: stroke mortality rates are no longer falling 5% per year as in the 1970s but now by only 1–2% per year. There are even indications, documented in longitudinal studies in Framingham, Mass., and Rochester, Minn., and in the Minnesota Heart Study, that stroke incidence and prevalence are actually increasing. These disturbing developments call for immediate investigation and increased research funding to determine the exact cause of this reversal in progress.

The AHA’s advances in stroke programs are impressive. For example, as an outgrowth of the recommendations of the AHA Conference on New Stroke Initiatives, volunteers will leave brief public health messages containing information about the warning signs of stroke at 24 million homes during fund-raising next year. A second initiative was a meeting of AHA affiliate staff from across the country to determine how to invigorate the AHA’s stroke programs. There are other signs of progress in spreading the word about stroke. Not only does the AHA now have a national stroke office, but the AHA’s newest journal, aimed at primary care practitioners, is titled Heart Disease and Stroke. Furthermore, the AHA mission statement now contains the word “stroke.”

Minorities and Low Socioeconomic Groups

Diversity in the AHA is a source of pride to AHA volunteers, staff, and programs. This diversity facilitates understanding and realistic approaches to the plight of underserved minorities and low socioeconomic groups who are particularly in need. Because these groups are especially vulnerable to stroke and other cardiovascular diseases, increasing attention must be paid to their welfare if we are to offer better cardiovascular disease control.

Minorities suffer disproportionately from cardiovascular morbidity and mortality. They also have limited access to and use of quality health care, medications, and health education. Furthermore, they have the most dramatic disparity in cardiovascular disease incidence; for example, African-Americans have a threefold greater incidence of serious hypertensive heart disease than Caucasians, and similarly higher stroke mortality rates from ages 35–55, the most productive years. Even more alarming is the 10- to 18-fold relative excess of end-stage hypertension kidney disease in African-Americans. The same can be said about a threefold or even greater disproportion in the incidence of end-stage diabetic renovascular disease in Hispanics and Native Americans. Hypertension is the nemesis of African-Americans, and diabetes combined with obesity is the nemesis of Hispanics and Native Americans.

The AHA is making rapid strides in minority programming to close the gaps in morbidity and mortality. The association recently sponsored two conferences on cardiovascular diseases and stroke, one focusing on Hispanics and the other on African-Americans. Both conferences addressed the importance of controlling the risk factors involved in the etiology of these diseases. We were very fortunate to have Dr. Louis Sullivan, Secretary of Health and Human Services, as our keynote speaker for the latter conference.

Dr. Sullivan warned that prevention of diseases is not just a problem of health professionals but of employees, schools, and community leaders. Perhaps most important, the health behaviors of our citizens must change in order that prevention programs might have a chance of success.

In addition to Dr. Sullivan, 10 speakers discussed subjects such as hypertension in African-Americans, obesity, coronary artery diseases, renovascular diseases, and hypercholesterolemia. Abstracts from each of these presentations have been made “reader-ready” by AHA staff and are being distributed for publication to 211 African-American newspapers, as well as to the general media through the Los Angeles Times syndicate newspapers. We are happy that our message of prevention will reach many people. Several of these articles have already appeared in African-American newspapers with good results. In addition, transcripts of the conference have been made available for use by AHA affiliates, the news media, and other organizations as tools for health education and minority volunteer recruitment. Furthermore, all of our mainstream education and community programs reach many minorities among the 30 million people whose lives are touched by the AHA each year.

Supplementing efforts like these conferences are postdoctoral minority research awards, fellowships for minority medical students to pursue cardiovascular research, pilot community projects designed to learn how to address certain hard-to-reach minority groups, and other minority initiatives.


FIGURE 4. Cumulative percent decline in age-adjusted death rates for major cardiovascular diseases. Data from the National Center for Health Statistics, the US Public Health Service, the Department of Health and Human Services, and the American Heart Association.
One of the most important ways to begin to close the gap in health status between minority and low socioeconomic groups and the other, more fortunate segments of our society is to improve access to quality health care, including medications. Many Americans are hurting because access to quality health care is inadequate. The matter of access is not predominantly a racial issue because 78% of the medically uninsured are Caucasian. However, racial factors are involved, because 30% of Hispanics and 20% of African-Americans are uninsured, compared with only 10% of Caucasians. Universal access to quality health care, combined with improved personal health habits and continued progress in biomedical research, will greatly benefit the general health of all Americans. It should be emphasized again that focus on preventive measures must be an integral component of any universal health care program. Stimulated in part by its affiliates, the AHA appointed the Task Force on Access to Quality Health Care. The association also appointed the Task Force on the Availability of Cardiovascular Drugs to the Medically Indigent. Many pharmaceutical companies are making remarkable progress in providing cardiovascular medications to indigent patients who are without insurance coverage. The AHA is very appreciative of this trend and other initiatives of pharmaceutical companies, including generous support of AHA research.

Other Special Programs

Items that deserve additional attention include fundraising during an economic recession, establishment of clinical guidelines for cardiovascular physicians and surgeons, and emphasis on cardiovascular diseases in children, women, and the elderly. The National Heart Attack Alert Program of the National Institutes of Health is moving forward, and I anticipate that a stroke alert program will follow in 2—5 years with significant input from the AHA. The purpose of these programs will be to accelerate the entry of heart attack and stroke patients into the emergency care system to prevent massive damage and to salvage as much myocardium and brain tissue as possible. I also anticipate that many of the 1 million Americans who have nonvalvular atrial fibrillation will begin long-term anticoagulant therapy to prevent stroke. Additional cardiovascular initiatives will undoubtedly emerge from the AHA Prevention Conference III [held January 15—17, 1993, in Monterey, Calif.].

The Future: Progress Through Prevention

The results of several surveys serve symbolically as guides to certain future directions of the AHA and emphasize prevention as the key to progress.

Results of a Minnesota heart study revealed that only 5% of Minnesotans could name the three major risk factors for heart attack: cigarette smoking, high blood cholesterol, and high blood pressure. Almost certainly they would be unaware that the AHA has added physical inactivity to the list of major risk factors for heart attack. In my opinion, everyone should avoid smoking, exercise at least moderately if possible, and know his or her blood pressure and cholesterol levels. Everyone should have a blood pressure instrument as well as a thermometer at home.

Several AHA surveys have indicated that 42% or more of Americans are unaware of the major warning signs of stroke: transient sudden weakness or numbness on one side of the body, sudden dimness or loss of vision (especially in one eye), temporary inability to speak or understand speech, sudden severe headaches, or unexplained dizziness. People should know that if properly recognized and treated by a physician, massive strokes can be prevented in many patients with these transient symptoms.

In a USA Today survey conducted in 1991, a cross-section of the American people was asked what they considered the disease of highest priority for research funding. Approximately 40% said AIDS, about 40% said cancer, only 13% said heart disease, and stroke was not even mentioned, despite the fact that cardiovascular diseases and stroke are responsible for 43% of deaths in the United States, and stroke is the disease most dreaded by the elderly.

We face an enormous task in educating the public, physicians, and other health workers about the health benefits of improving personal health habits and practicing preventive medicine. There is a need for higher priority and funding of research that will lead to new, more effective, and inexpensive methods of cardiovascular disease and stroke prevention and treatment.

As I stated before, the central theme of my term is prevention of cardiovascular diseases and stroke. I refer not only to the accepted prevention of suffering and death by, for example, renal dialysis and transplantation for end-stage renal vascular disease, or repeated expensive hospitalizations for congestive heart failure; we should also look ahead to the day when hypertension and hypercholesterolemia do not require medical treatment because they do not occur. I am convinced that unless we concentrate more on finding ways to prevent the risk factors themselves—that is, to prevent hypercholesterolemia, hypertension, obesity, and diabetes—our medical care system will continue to tilt precariously toward expensive tertiary care, with its ominous prospect of health care rationing. The need to prevent cigarette smoking and sedentary lifestyle is obvious.

To achieve primary prevention of risk factors, a great deal of research, from molecular, vascular, and integrative biology to epidemiology and preventive cardiology, will be necessary to identify people prone to hypertension or hypercholesterolemia early in life, and much of our preventive efforts must focus on these at-risk people at an earlier stage. New diagnostic and therapeutic interventions will inevitably flow from such research. Furthermore, it is predicted that in the next decade new genetic engineering techniques (used under scientifically monitored and societally controlled circumstances) will enable the favorable alteration of genes that govern the expression of cardiovascular risk factors. Profound legal, psychological, and ethical concerns will arise, of course, and they must be addressed.

The biomedical advances referred to are breathtaking and progressing rapidly. The integrative functions of the AHA are needed now more than ever. For this and other reasons, the AHA is the preeminent voluntary health organization in the world, uniquely positioned and organized to successfully undertake the new, challenging tasks that confront us. We will make greater progress in the years to come by emphasizing prevention during this fascinating time of change. With your continued guidance and support, we cannot fail.
Prevention: the key to progress.
E S Cooper

Circulation. 1993;87:1430-1433
doi: 10.1161/01.CIR.87.4.1430
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1993 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/87/4/1430.citation

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org/subscriptions/