tory monitoring. Patients with a low function capacity (<4 METS) on treadmill testing or who cannot increase heart rate >120 beats/min off medications or demonstrate a sustained decrease in systolic blood pressure during exercise probably have poor left ventricular function. These patients respond poorly to sustained static exercise and may need special evaluations before returning to any job requiring lifting or carrying >10 to 15 lb. (3.5 to 5 kg) or pushing and pulling moderate to heavy objects.

Role of ambulatory ECG monitoring. If the job contains a major psychologic stress component and there is some question regarding the patient's capacity to handle this stress, 2-channel ambulatory electrocardiographic monitoring can be performed to detect arrhythmias or silent ischemia. Also, recent developments now allow ambulatory blood pressure to be recorded under a variety of conditions, but still not during activity more vigorous than walking.

Role of patient counseling. Once an appropriate evaluation is completed, the next step is to effectively transmit the results to the patient and spouse. Very specific guidelines should be given to the patient and an opportunity provided to have questions answered. In low risk patients, an occupational evaluation and counseling 3 weeks after infarction decreased the interval from infarction to return to work from an average of 75 to 51 days (11). Patients who returned to work early experienced no increase in late medical complications, had lower medical costs and earned a higher salary during the first year of recovery than patients not receiving the evaluation and counseling.

References


Perspectives, Epilogue and Caveat

HENRY D. MCINTOSH, MD, FACC
Lakeland, Florida

Those monitoring the declining incidence of premature death from coronary heart disease in the United States and other selected affluent societies throughout the world cannot escape the conclusion that a large part, if not a major part, of the decline is due to modification of individual behavior and control of identifiable risk factors (1). Only recently has it become accepted that adverse, modifiable life styles contribute to the initiation and progression of coronary heart disease in large segments of society. Such influences were labeled as "disturbances of human culture" (2).

Stamler and others (3) reported in 1958 the long-term progressive increase, beginning in the early decades of this century, of the mortality from the disease, particularly in middle-aged white men. It had been generally considered that atherosclerotic heart disease was an inevitable aging phenomenon. However, by 1962, Stamler was able to report that "the overwhelming evidence indicates that the disease is multifactorial in causation, with diet as a key essential etiologic factor," accounting for the occurrence of coronary heart disease in the middle-aged populations of the econom-
ically more developed countries, particularly the United States. This is a far cry from the intellectual atmosphere of only a few years ago when these diseases (coronary heart disease, hypertension, cardiovascular disease, and cerebrovascular disease) were regarded by many as inevitable consequences of aging (emphasis supplied by Stamler) (4). Other careful epidemiologic studies at Framingham demonstrated that the proportion of deaths due to coronary heart disease was substantially greater in persons without clinically proven overt coronary heart disease (70 to 75%) than in those with clinically recognizable coronary heart disease (25 to 30%) (5). Therefore, treatment of the disease is not enough, for how can sudden and unexpected death be treated successfully and consistently? The major goal must of necessity be prevention.

Such is true despite the development of halfway technologies such as aortocoronary bypass surgery (6,7). Contrary to the opinion of many, the long-term benefits of bypass surgery are compromised by progression of the disease, not only in the native circulation but also in the bypass grafts. Bourassa et al. (8) at Montreal Heart Institute reported that rather extensive progression of atherosclerosis leading to occlusion of the aortocoronary saphenous vein grafts was not uncommon. Only approximately 60% of the grafts remained patent as long as 10 to 12 years after implantation, and of the patent grafts at that time, 45% showed angio
graphic evidence of atherosclerosis and 70% of the lesions that reduced the luminal diameter by $\pm 50\%$.

For these and other reasons, the American College of Cardiology on September 27 and 28, 1980 convened the 11th Bethesda Conference on Prevention of Coronary Heart Disease (9). In the introductory remarks opening that conference, Robert I. Levy, the Director of the National Heart, Lung, and Blood Institute (10) stated, "We learned, from the National High Blood Pressure Educational Program, that 'The public feels strongly that medical advice about changes in lifestyle habits would be most positively responded to if it came from the physician.' We also learned from the public that they feel that less than half of their physicians spend any considerable time providing them with information dealing with prevention. If I had a challenge to this conference,' Dr. Levy continued, "it would be to promote the concept that prevention is an integral and beneficial part of the practice of medicine . . . and to provide guidance and motivation for those not actively engaged in prevention and reinvigoration and reinforcement for those who are so engaged.'"

After the conclusion of the Bethesda Conference, the Preventive Cardiovascular Disease Committee of the American College of Cardiology was assigned the responsibility to direct the implementation of the recommendations of the Conference and to make specific recommendations to the Board of Trustees at its meeting in October 1981. The Board approved, among others, the recommendation that the report of the Bethesda Conference on Prevention of Coronary Artery Disease be referred to the College's Learning Center Committee, Extramural Programs Committee and ACCEL Committee with the request that continuing medical education programs and educational materials based on the report be considered.

This recent conference at Heart House, October 7 to 9, 1987 on "Preventive Cardiology: How to Integrate Cost-Effective Strategies Into Your Practice" is at last initiating efforts to accomplish the directive of the Board of Trustees of the American College of Cardiology that was made in October 1981. But why the delay? Has there been no activity? Is there not reason to believe that the public is ahead of physicians in realizing that efforts for the prevention of diseases are important . . . that the public believes that "It is what you do, hour by hour, day by day, that determines the state of your health, whether you get sick, what you get sick with, and perhaps when you will die" (11)? Is the patient waiting patiently for the doctor to tell him or her what they should do? Or has the medical profession waited too long to take the initiative to show how to prevent disease?

It would appear that the public is gradually abandoning the physician as a source of information regarding prevention and not anticipating the doctor will be of assistance to them in their search for health and wellness. These concerns were supported by another Heart House conference, June 24 to 26, 1985. That conference dealt with the education of the patient regarding matters of health. Despite the possible lack of leadership and enthusiasm by physicians, the public appears to have increasing concerns about attaining and maintaining wellness. A report of this conference concluded that "The physician's office should be synonymous with a learning center. This is not presently the case, and there is fear that it might not become such in the future because of physician inertia and fear of change. Indeed, time may be running out for the physician to remain the prime educator of the patient about illness and about health and hygiene matters in general. There is concern that the principal educator in the 21st century may not be physician.'"

But preventive efforts, whether individually initiated or physician-stimulated, have contributed to an aging of the population in the United States. In 1985, the 65 to 74 age group (17 million) was nearly 8 times larger than in 1977, the 75 to 84 group (8.8 million) was 11 times larger and the 85+ group (2.7 million) was 22 times larger. In 1985, persons attaining the age of 65 years had an average life expectancy of an additional 16.8 years (18.6 years for women and 14.6 years for men). The older population is expected to continue to increase in the future. The growth will slow somewhat.

*Conference On The Education of the Patient With Cardiac Disease in the 21st Century. This was sponsored by the International Society and Federation in Cardiology, June 24 to 26, 1985, Heart House, American College of Cardiology, Bethesda, Maryland.*
during the 1990s because of the relatively small number of babies born during the Great Depression of the 1930s. The most rapid increase is expected between the years 2010 and 2030 when the "baby boom" generation gradually reaches 65 years of age (12).

There is little doubt that efforts to prevent disease contributed to and will continue to contribute to these changes and that the expanding aged population can cause striking socioeconomic problems. If campaigns to eliminate smoking are successful, the cost to the Social Security system will escalate by billions of dollars to pay the benefits of people living longer. Shover, an economist at Stanford University, and his associates recently reported (working paper 2234, Stanford University Economics Department, Palo Alto, California) that every man born in 1921 who smokes saves Social Security approximately $20,000 by dying earlier than someone who does not smoke. For women born in 1923, the typical smoker saves Social Security $10,000. If none of these people had smoked, these investigators estimate that Social Security would have to pay out $14.5 billion in extra benefits. But, this is a small figure compared with that paid for the halfway technology of aortocoronary bypass grafting.

Such considerations should not and cannot deter the individual physician from striving with vigor to encourage the individual and groups of society to prevent disease. But as leaders of society, physicians cannot ignore sounding a caveat that we must reexamine attitudes toward retirement and aging in the country and the cost of caring for the elderly and related socioeconomic problems. Who will pay the bill required to support an ever increasing array of healthy individuals?

I thank Susan Butterfield, the Watson Clinic, Lakeland, Florida for untiring assistance in the preparation of this manuscript.

References