Prevention and the elderly: appropriate policies

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Prologue: National demographic statistics show that the elderly population of this country has increased rapidly and will continue to grow into the twenty-first century as the postwar baby-boom generation ages. Experts have debated whether health promotion activities can be effective among older people, since one of the goals of health promotion is to prevent premature death and illness. In response to this debate, the University of Washington’s Center for Health Promotion in Older Adults, the first of its kind in this nation, studied an older population of 25,000 patients being treated for coronary artery disease. Its findings dispel the notion that health promotion “is not worth it” for older people: older men and women benefited just as much from smoking cessation programs as did their middle-aged counterparts. In this article, Gilbert Omenn concludes, “As people live longer, there are more years for older people to benefit from health promotion/disease prevention activities.” He advocates the concept of “successful aging,” arguing that older people no longer have to be “willing to accept declines as the inevitable consequences of age.” Omenn received his medical degree from Harvard Medical School and a doctorate in genetics from the University of Washington in Seattle. He is professor of medicine and of environmental health, director of the Center for Health Promotion in Older Adults, and dean of the School of Public Health and Community Medicine at the University of Washington in Seattle. He served as deputy science advisor and later as associate director of the Office of Management and Budget in the Carter administration. He is a member of the U.S. Congress Office of Technology Assessment Panel on Preventive Services under Medicare, the Institute of Medicine (IOM) Board on Health Promotion/Disease Prevention, and the Charles A. Dana Foundation Health Advisory Board.
Health care in the United States is notorious for all-out diagnostic and treatment efforts once serious illnesses and injuries have occurred, while neglecting any significant investment in prevention. This paradox is particularly striking in our approach to caring for older men and women. Until recently, most research on the effectiveness of health promotion and disease prevention initiatives excluded people over age sixty. For example, the Multiple Risk Factor Intervention Trial (MRFIT) to reduce heart disease was restricted to men ages thirty-five to fifty-seven. The Lipid Research Centers Coronary Primary Prevention Trial recruited only men ages thirty-five to fifty-nine. The same was true for studies aimed at preventing heart disease organized in Finland, in Norway, and by the World Health Organization (WHO).

Belatedly, new concepts about our aging society are taking hold. The phrases “successful aging,” “productive aging,” “active life expectancy,” “preventive gerontology,” and “compression of morbidity” connote enhanced social function, improved physical and mental expectations, prolonged independent living, and greater autonomy. At the center of these notions is the positive message of health promotion and social value. Health promotion activities and successful postponement of the onset of chronic illnesses can provide much-needed balance against the pervasive gloomy images of older people facing the risks of dementia and of inevitable admission to nursing homes, with attendant social and financial consequences.

The aging of our society is the dominant demographic phenomenon of our time. Most of the growth in our elderly population has been fueled by increases in life expectancy from birth, immigration since 1900, and dramatic reductions during the past twenty years in deaths from heart attacks and strokes. A child born in 1987 could expect to live to age seventy-five, about twenty-eight years longer than a child born in 1900. The number of persons age sixty-five and over in the United States has grown from 3.1 million in 1900 (4 percent of the population) to over thirty million today (12 percent). Projections indicate thirty-five million in the year 2000, thirty-nine million in 2010, fifty-two million in 2020, and sixty-six million in 2030 (22 percent), with the aging of the “baby boom” population.

Defining the elderly. For health policy purposes, it is currently adequate to define the elderly as men and women age sixty-five and older, since they become eligible for Medicare on the first day of the month of their sixty-fifth birthday. However, it is critical to address the marked heterogeneity among older people and to grapple with the rapidly increasing numbers of “old old” people. Between 1960 and 1980, there was a 65 percent increase in the seventy-five to eighty-four age group and a
174 percent increase among those age eighty-five and older.\textsuperscript{5} Scientifically, it is important to recognize that many chronic health impairments of older adults arise from modifiable risky health behaviors during their younger years. Thus, some studies and symposia begin earlier than age sixty-five (for example, a symposium sponsored by the American Association for the Advancement of Science (AAAS) in May 1986 was called “Health Promotion for the Second Half of Life—After 50”), and many pediatricians emphasize that we should start health promotion at the beginning of life.

Goals Of Prevention For Older Adults

The landmark U.S. health policy document, \textit{Healthy People: The Surgeon General’s Report on Health Promotion and Disease Prevention} (1979), established major goals by age group. In all other cases, the goals were expressed as rather easily measured decreases in mortality rates, but for older adults (age sixty-five and older), the primary goal was to improve the quality of life and functional independence—“adding life to years, rather than years to life.” The measure chosen was a decrease in the number of days with limitations on activities of ordinary living. Available data indicated that nearly half the people over age sixty-five limited their activities primarily because of preventable chronic health conditions; overall estimates are thirty-one to thirty-eight days of limitation per person per year.\textsuperscript{6}

\textit{Healthy People} recommended the following eight actions: (1) maintain an active social life, including work; (2) engage in regular physical activity (appropriate exercise); (3) maintain a nutritious, well-balanced diet; (4) undergo periodic health check-ups for specific preventable and diagnosable conditions; (5) review and minimize medications; (6) consult physicians about immunization against pneumococcal pneumonia and influenza; (7) improve home safety to prevent falls and other injuries; and (8) have access to needed community services to maintain independent living. Only recommendations four, six, and seven have been tested.

The continuing series of policy documents from the U.S. Public Health Service (PHS) Office of Disease Prevention and Health Promotion, led during the past three administrations by J. Michael McGinnis, has generated growing public and congressional interest.\textsuperscript{7} Older adults were notably omitted from the graphical display of progress in \textit{The 1990 Health Objectives for the Nation: A Midcourse Review}, published in 1986. However, two years later, a special workshop on Health Promotion/Disease Prevention for Older Adults was held by PHS and the Administration on Aging, and older adults are addressed prominently in the forthcoming \textit{Healthy
When Is It Too Late To Begin Health Promotion Activities?

Ironically, one of the indirect results of a comprehensive life-cycle view of the origins of chronic diseases and injury-prone lifestyles is the conclusion that prevention must begin early and that once a person is sixty or seventy years old, it may be too late. For example, in the list of activities specified in Healthy People, smoking cessation is conspicuously missing, despite the recognition that smoking is a dominant risk factor in coronary artery disease, many cancers, and chronic lung disease—the big killers and cripplers of older people. Similarly, most medical textbooks and many physicians, even now, consider smoking cessation to have limited value among older people. The logic is that any longtime smoker who is still alive at age sixty-five or so may somehow be “resistant” and is unlikely to benefit from breaking the habit.

A study from the University of Washington’s first-of-its-kind Center for Health Promotion in Older Adults demonstrated that, among older men and women (drawn from the Coronary Artery Surgery Study of 25,000 patients evaluated for symptoms of coronary artery disease), such presumptions are wrong. Survival for six years of follow-up was just as poor for smokers, compared with former smokers and never-smokers, among participants age sixty-five and older as among those ages thirty-five to sixty-four. More importantly, comparisons of those who continued to smoke during the follow-up with those who quit in the year preceding enrollment in the study found 60 percent higher survival among the “quitters,” with the same differential in all three age groups.

Thus, on an individual basis, the older men and women benefited just as much from smoking cessation as did their middle-aged counterparts, adjusted for various coronary risk factors. On an aggregate basis, the older age group benefited far more, since the incidence of heart attacks and deaths rises markedly with age.

Increased longevity. As people live longer, there are more years for older people to benefit from health promotion/disease prevention activities. At age sixty-five, on average, men can be expected to live almost another fifteen years and women, another nineteen years. Preventive efforts should be focused on modifiable risky health behavior and early diagnosis, matched to the leading problems by age and functional status. The notion of a generalized annual check-up is no longer favored at any age. In fact, we have demonstrated that age becomes a nonsignificant
variable when falls and several specific chronic conditions are accounted for in a detailed analysis of restricted activity days among older adults.\textsuperscript{9} The University of Washington Center for Health Promotion in Older Adults, supported by the federal Centers for Disease Control (CDC) Prevention Centers program, is dedicated to the notion that it is not too late to attempt major health promotion/disease prevention initiatives among older people.\textsuperscript{10} As with younger age groups, the biggest challenge is to entice those who most need to participate—sedentary, smoking, older, low-income, socially isolated, sensory-impaired, multiply medicated, or depressed individuals. The center consists of (1) a methodology core, to develop and validate instruments for measurement of health status in older adults, beginning with overall status, physical activity, and depression; (2) case-control studies of the preventable factors that predispose individuals to falls and hip fractures; (3) a major demonstration at Group Health Cooperative of Puget Sound with 1,800 older adults randomized into two groups, one receiving usual care and the other receiving special preventive services that address physical activity, rationalization and reduction of medications, assessment and improvement of vision and hearing, moderation of excessive alcohol intake, and assessment of home safety (which few accept); (4) developmental projects, such as the smoking/quitting analysis above, linkage of pharmacy and health care utilization records at Group Health, validation of noninvasive bone density measurements, and investigations of factors associated with motor vehicle accidents; and (5) dissemination of methods and results, and interaction with community advisers.

### Prevention Recommendations For Older Adults

There are three major sources of recommendations for older adults’ prevention activities: the Lifetime Health-Monitoring Program by Lester Breslow and Anne Somers, the Canadian Task Force on the Periodic Health Examination, and the Guide to Clinical Preventive Services from the U.S. Preventive Services Task Force.\textsuperscript{11} In addition, communitywide health protection and health education efforts complement the preventive services potentially provided by various health professionals.

Breslow and Somers introduced the concept of packages of selected services for various age groups, with age-group-related periodicity. For the elderly (ages sixty to seventy-four) and those in old age (age seventy-five and over), the goals are to prolong the period of optimal physical, mental, and social activity; minimize disability, discomfort, and inactivity from chronic conditions; prepare in advance for retirement; and be supportive in the face of terminal illness. They recommend professional
counseling about changing lifestyle and testing for specified chronic conditions every two years between ages sixty and seventy-four and annually thereafter. Also, they recommend flu vaccination and dental and podiatric care but recommend against routine chest x-ray and glaucoma screening.

After a systematic literature review, the U.S. Preventive Services Task Force graded the strength of recommendations for or against specific interventions and characterized the quality of the evidence, using categories similar to those reported by the Canadian task force. In all, there are specific recommendations about screening for forty-two clinical conditions, counseling for eight health-related behaviors, and five forms of immunization or chemoprophylaxis. Many services are reserved for individuals identified as “high-risk” on clinical grounds, from family history, or from social factors. Some people find these recommendations a bit cautious, but the U.S. task force deliberately chose that position and urged periodic updates as research and demonstrations improve the scientific underpinnings for health promotion.

Current Status Of Preventive Services For Older Adults

Before posing complex public policy questions about federal endorsement of specific services and federal payment for services, we must explore the extent to which older adults (or others) receive highly recommended preventive services from physicians. Physicians are extremely influential providers, whether payment is available from insurers or Medicare or must be made by the patient.

The congressional Office of Technology Assessment (OTA) is engaged in a multistage assessment of health promotion/disease prevention strategies for the elderly, in response to requests from the House Committee on Ways and Means and the Senate Labor and Human Resources Committee to examine the effectiveness and costs of providing selected services to the elderly under Medicare. OTA is publishing a series of papers addressing screening for glaucoma, cholesterol, cervical cancer, and colorectal cancer; the current use of preventive services by the elderly; and broader issues relating to Medicare financing of preventive services.12

For data, OTA drew upon self-reports in the 1982 National Health Interview Survey, Gallup polls carried out for the American Cancer Society (ACS), annual CDC immunization surveys (until 1985), and results from an unnamed large health maintenance organization (HMO). In general, highly recommended preventive services are provided infrequently. The only exception is blood pressure examination, which is a
routine part of essentially every physical examination, and even blood pressure is omitted by many specialists. Increasingly, older adults are taking their own blood pressures in drug stores and shopping centers. Less than 15 percent reported an annual rectal exam, pneumococcal vaccination, or mammography (women), but 50–70 percent of women had Pap smears within one to four years, and 74 percent reported eye exams within two years. Between 1973 and 1982, National Health Interview Surveys found increases in the proportions of elderly who had ever had breast self-examinations, Pap smears, eye examinations, electrocardiograms, or glaucoma testing.

Several studies have examined the preventive services provided by various types of physicians. Primary care physicians seem to recommend more preventive services than do specialists. In both categories, physicians seem to prefer tests not requiring their personal involvement or their time for counseling. Many physicians reported that they recommend more services than do the published guidelines, because various guidelines are too cautious or inconsistent.

However, despite extensive educational efforts directed at both physicians and patients by the ACS, use of mammography, as a key example, is still discouragingly low. The 1987 National Health Interview Survey found that only 20 percent of all women age fifty and over had had a mammogram in the previous year; a CDC Behavioral Risk Factor Surveillance System survey in thirty-three states in the same year found that, even among women in this age group who had seen a physician for routine preventive care, only 29 percent had had a mammogram. The reasons? Many women are not aware of the frequency of breast cancer and the proved efficacy of mammography in dramatically reducing breast cancer deaths. Physicians seem unduly skeptical. And, charges for mammography are a highly variable barrier, often more than $100. Few public health departments provide mammography for low-income clients, either. Nevertheless, even these figures do represent some progress. In the RAND Health Insurance Experiment, only 2 percent of women ages forty-five to sixty-five had had a mammogram in the three-year period 1974–1977, and free care alone was an insufficient incentive to yield adequate levels of preventive services.

**Can Prevention Be Cost-Effective?**

Preventive actions, in both the clinical and community arenas, seem to face far more scrutiny of their likely efficacy and costs than do diagnostic tests and treatments. Perhaps much of this public attitude reflects Americans’ predisposition to face up to crises (medical, in this case) and to
prefer dramatic responses (surgery). Yet there must be a more generalized psychological basis for the deep discounting of future benefits related to reduction of current risks from unhealthy behavior, since preventive services are also underused in Britain, where there is, in principle, quite a good system for linking health maintenance with medical care.16

Total costs of population-based health promotion programs can become rather substantial if screening tests and counseling are provided to large numbers of people, with confirming diagnostic workups for those at "high risk," to prevent relatively few adverse events per year. The benefit-to-cost ratio drops further if high-risk individuals disproportionately are missed in the program (as is usual), if individuals fail to follow through with recommended behavior changes or medicines, or if the target population is heterogeneous for conditions screened and for responses to preventive services. Thus, Louise B. Russell, for example, criticized early detection and preventive treatment with drugs to control high blood pressure, and the resource costs and likely benefits of exercise programs.17

Assessing prevention programs. Generalized analyses of health promotion and disease prevention programs can be misleading. It is essential to specify the target populations by age, sex, racial and ethnic group, underlying incidence of predisposing preventable risk factors, portion of the risk attributable to each of those factors and their combinations, willingness to participate, and compliance with recommendations. It is also essential to distinguish what classically have been termed primary, secondary, and tertiary approaches to disease prevention. Primary prevention aims to avert the initiation of the disease process. Secondary prevention aims to detect early signs of disease before the person is clinically affected. Tertiary prevention aims to prevent serious and often costly complications of already-diagnosed disease.

Some of these considerations make the benefit/cost ratio of preventive services potentially more favorable in older men and women than in their middle-aged counterparts—if the interventions are successful. Primary prevention may seem less useful in older people if it must precede the onset of the disease process by many years. Nevertheless, the reduction in coronary mortality from smoking cessation noted earlier has a much larger aggregate benefit from essentially the same intervention costs, because the mortality rate is so much higher in older adults. Similarly, because older people have a higher incidence of serious illnesses and death from influenza and pneumococcal pneumonia, immunization, if effective, will be more cost-effective in older age groups. Also, the mortality and morbidity rates of most cancers rise sharply with age, so any secondary prevention program that works in older adults should generate
more lives saved per 1,000 people screened. Tertiary prevention programs in any age group must be targeted on already-diagnosed patients; older adults, other factors being similar, have higher risks of life-threatening complications. On the other hand, if the key criteria are the number of years of life to be gained or, as tabulated by CDC, the number of “productive years before age sixty-five” to be saved, the benefits will be fewer among older people. I infer, therefore, that well-targeted health promotion/disease prevention programs for older adults can indeed be cost-effective.

Cost-effectiveness studies for Medicare. Two major efforts are under way to assess the cost-effectiveness of various preventive interventions for Medicare-eligible elderly persons. The first, as noted, is OTA’s series of literature reviews and analyses. The second, as mandated by Congress in 1986 and initiated by the Health Care Financing Administration (HCFA) in 1988, is a set of demonstrations in North Carolina, southern California, Baltimore, Pittsburgh, and Seattle. The Seattle project, for example, is assessing the cost savings and changes in health-related quality of life after introduction and reimbursement of an experimental preventive services package for Medicare beneficiaries enrolled at Group Health Cooperative of Puget Sound. The project, called A Healthy Future, identifies physical and mental conditions for which there are efficacious interventions to modify risk factors for disease, disability, and dependency. It also aims to assist in modifying enrollees’ social and physical environment, enhance their sense of autonomy to function independently in daily living, and enable them to make critical decisions about health behavior and health care. The annual capitation rate negotiated for the full package of fifteen preventive services, risk assessment, and administrative costs is $183.68 for fiscal year 1990.

The hypotheses under test are that (1) after twelve months, the use of preventive services will increase and the use of nonpreventive ambulatory services will decrease, with no net savings; and (2) after twenty-four months, the cost per year of healthy life gained will be significantly lower in the experimental intervention group, compared with usual care. These hypotheses may be overly optimistic, since stepped-up case finding and some increase in use of services are likely initially, partly reflecting previous deficiencies in preventive services.

Unfortunately, due to an overall squeeze on the HCFA research and development budget, HCFA’s decision to fund five instead of four new sites in 1988, and delays in approving the necessary Medicare waivers, the demonstrations are under intense pressure to produce results with minimally adequate sample sizes and brief periods of follow-up. As is so often the case, the responsible agency, interested congressional staff, and exter-
nal groups keen to obtain funding for preventive services are impatient for results and general implementation of a prevention program. The deliberate pace of new public program investments these days surely would justify more extensive demonstrations during this period and longer follow-up than is currently budgeted. Congress should mandate at least a five-year follow-up if cost-effectiveness is not apparent after three years.

Priority For Prevention

It is ridiculous to expect health promotion and disease prevention to accomplish grand-scale cost containment in the health care sector in the face of continuing escalation of expenditures for diagnosis, treatment, and long-term care. However, it is reasonable to expect well-selected health promotion and disease prevention initiatives to achieve improvements in health status, maintenance of functional independence, and moderation of increases in health care use and spending. We must reach agreement on measures of quality of life and social contribution, so benefits of cost-effectiveness from prevention programs can be compared with marginal benefits from continuing or additional specific treatments. Especially critical comparisons should be made with high (and often futile) expenditures in the last days or weeks of life and with expenditures for custodial care after severe mental and physical decline. Also, we need to design health maintenance and health promotion for spouses and other relatives with whom intense relationships may be formed during the decision-making process about terminal or long-term care for a primary patient.

As the U.S. labor market shrinks, we will need to reach out to retirees for additional periods of work. Then the capacity of older people to respond will take on greater economic value, as will effective health promotion/disease prevention programs. If physicians and families comprehend the concept of “successful aging”—maintaining bodily functions by avoiding specific causes of impairment—and the value of patient autonomy, we will be more aggressive about maintaining function and less willing to accept declines as the inevitable consequences of age.20

Health Promotion/Disease Prevention In Clinical Practice

The resistance of most physicians to counseling their patients about nutrition, smoking, physical activity, let alone living wills, sexual function, and social networking is well known.21 Furthermore, most patients are reluctant to initiate such discussions with their physicians. Yet, I
believe that those physicians who do engage their patients in such health promotion topics elicit productive responses and much appreciation from their patients. Several steps are required to alter behavior of physicians and patients.

**The roles of physicians and patients.** Research, demonstration, and consensus-building exercises such as those of the Canadian and U.S. prevention task forces must continue to generate understandable and persuasive messages to professionals and consumers alike about which health promotion/disease prevention activities are efficacious and for which populations they should be provided. Patients must request or demand attention to pressing, usually unasked questions, either from their physicians or other health professionals or from peer groups.22

**The role of the private sector.** Society must begin to pay professionals for the time involved in addressing these important concerns. Perhaps the initiative must come from the private sector, especially from companies with enormous liabilities for health insurance for their present and future retirees—some of whom they may wish to tap for further work, including training of others, and all of whose health care costs they would like to moderate. Company purchasers of health programs may be able to negotiate packages of preventive services, both counseling and screening services, taking their cues from the U.S. Preventive Services Task Force and from the HCFA demonstrations. Many payers understandably fear fee-for-service unbundling and gouging; they might respond more favorably to negotiated packages and capitated, total care rates. Costs must be reviewed and constrained based on target populations, not on an individual services basis, with substantial economies of scale.

**Government's role.** Federal and state governments, worried about consequences to society of unnecessarily dependent older adults and seeking to make rational choices about the full array of services to include in ambulatory and long-term care programs, must step up to the table and pay their share. Low-income, Medicaid-eligible elderly, veterans served by the Department of Veterans Affairs (VA), and military and civilian retirees are important target populations for which government has direct responsibility.

It would be unwise to perpetuate the inflationary incentives embedded in the acute care sector by extending reimbursement step-by-step from pneumococcal vaccine to hepatitis B vaccine to mammograms to, say, the taking of blood pressure. Better by far would be payment for a systematic health assessment of older persons, drawing upon a package of potential services available, with some services requiring payment by the individual and counted against deductibles. One productive suggestion considered in the 100th Congress's debates on the Medicare Catastrophic
Coverage Act was for an entry examination for all new Medicare eligibles specifically to identify modifiable risk factors and to direct these individuals to health-promoting alternatives and follow-up. Such an assessment need not be annual but might be repeated at five- or even ten-year intervals. Considering our current financial straits, I urge that several versions of such a scheme be tried on a demonstration basis. Patients, their families, physicians, provider organizations, and society at large could reap large benefits from emphasizing these positive approaches to our aging, active population.

Finally, since so many federal agencies have a stake in health promotion, social autonomy, and economic productivity among older people, these matters may deserve Domestic Policy Council coordination. There is an unmet need, in my opinion, to bring together the labor force and health care payer interests of the various economic agencies (labor, commerce, treasury, agriculture) with the social benefits and research functions of the departments of Health and Human Services, VA, Defense, Housing and Urban Development, and Agriculture. For useful starting positions, we should look to the leadership of the PHS Office of Disease Prevention and Health Promotion in generating good materials for the general public; the emerging infrastructure of Prevention Research Centers at schools of public health supported by CDC; several prospective population-based studies in older people initiated by the National Institutes of Health (NIH); community-based intervention programs undertaken by The Henry J. Kaiser Family Foundation; and the cost-effectiveness demonstrations funded by HCFA.

NOTES


5. Ibid.


13. Ibid.


15. Ibid.


23. The present annual funding for these activities is truly negligible—only $1.9 million nationally for the program of prevention centers and $1.75 million for the HCFA demonstrations.