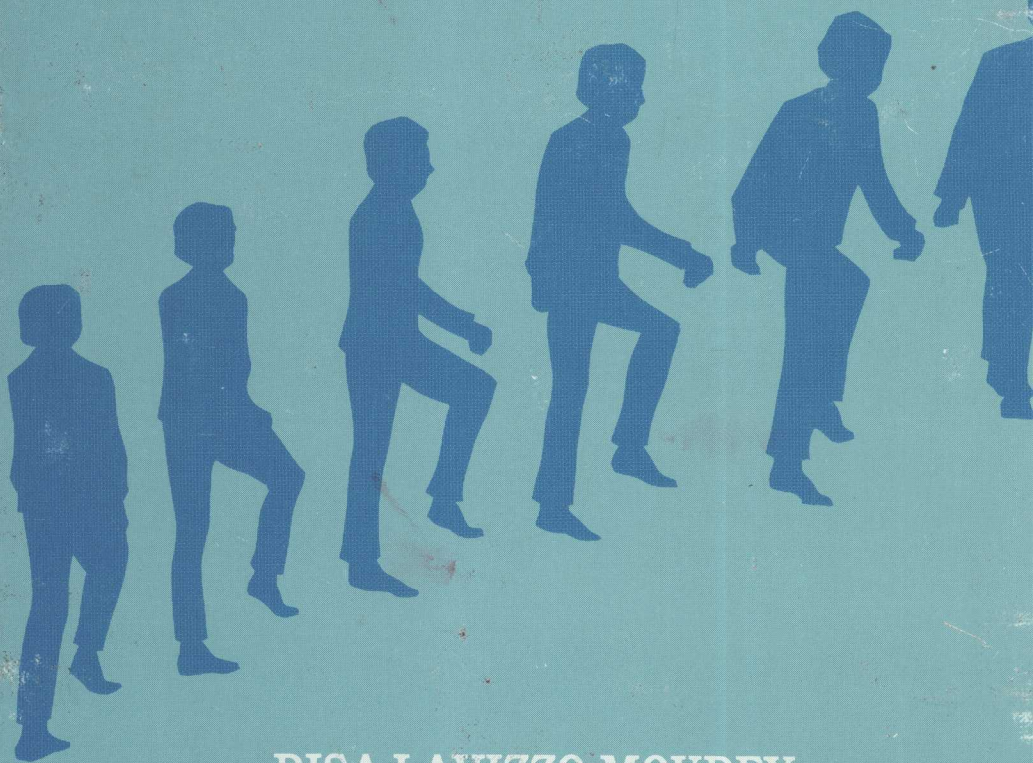


PRACTICING PREVENTION FOR THE ELDERLY



RISA LAVIZZO-MOUREY
SUSAN C. DAY
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NOT FOR RESALE

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DEDICATION

For our families,
Bob, Rel, Max, Wigs, William, Morgan,
Mark, Jesse, Seth and Jim,
who keep us healthy.



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Preface

It is now a well-known fact that the elderly population is growing and that as much as 50 or 60 percent of a clinician's practice in the next 20 years will be 65 or older. Many of these patients can expect to live another 10 to 20 years. What is not as well-known is how clinicians can make important contributions to maintaining a high-quality, independent lifestyle for their older patients.

The importance of preventive care for the elderly is just beginning to be recognized. However, the heterogeneity of the elderly population and diversity of possible preventive measures, combined with the time and fiscal constraints on today's practitioners, make providing effective preventive care a challenge. To date there has been very little information available describing practical clinical interventions that will help clinicians meet this challenge within the context of a busy practice. This book is a unique resource, for both students and practitioners, that combines summaries of available research with specific recommendations and pragmatic strategies for *practicing* prevention for the elderly.

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Acknowledgments

Creating a book is a process that brings into sharp focus the interdependence of human activities. We are grateful to those on whom we have depended.

We would like to thank the ARCO Foundation for recognizing the need to provide clinicians with information about preventive care for the elderly and for providing us with the financial support to do so.

We are also indebted to our colleagues both here at the University of Pennsylvania and across the country. This book would probably not have gotten beyond the stage of a good idea had we not been working in a Section of General Medicine where there is a climate of commitment to addressing the needs of the elderly and a belief in the promise of prevention. The book would not have even been an idea without the direction and research provided by those who have pioneered the effort to bring together the fields of Geriatrics and Prevention, one of whom, Anne Somers, we would like to thank in particular for her willing support and contribution of the Foreword.

We are especially grateful to those who have directly contributed to bringing words to the page. To those who have written individual chapters, we would like to express our appreciation for their willingness to contribute their expertise and for their patience with our requests for more. To those who have decoded handwriting and weathered with good nature what probably seemed like an interminable process of typing and retyping we offer heartfelt thanks, especially to Marie Kaufmann and Joanne Walter for initially handling the whole job, to Dianne Greer for her counsel in guiding us through the incompatibility of different word processing systems, to Ginnie Crouthamel for her sense of humor about the number of revisions, to Jacki Brown for the late hours and that special touch she has with the computer, and to Mary Ann Thrasher particularly for her assistance in designing the layout of the Prevention Flowsheet. Jody Goodrich's innumerable trips to the library and encouraging words kept the process moving.

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FOREWORD

Anne R. Somers, ScD (hon.)

The very concept of “health promotion and preventive care for the elderly” may appear to some as incongruent, even contradictory. Once an individual is 65 and has a suspicious cough or elevated blood pressure, isn’t it “too late to lock the barn door?”

Far from accepting this pessimistic view, many leading gerontologists and geriatricians now believe that prevention is actually the key to effective health care for the elderly. The phrase “preventive gerontology” is increasingly used to encapsulate this new approach. Support comes from both public and professional sources.

On the public side, recent surveys have shown that elders are more prevention-minded than younger people. It is also well known that the elderly spend a disproportionate amount of their generally small incomes on health care and health-related products—frequently not wisely, but often the best they can do, given inadequate information and inadequate professional assistance.

Meanwhile, scientists have been documenting the fact that advancing age does not automatically bring disease and disability. On the contrary, it is increasingly asserted that chronological age is only one factor—and not the most important—in determination of health and functional status. For most of the major chronic diseases associated with advancing years—most cardiovascular disease, many cancers, osteoporosis, emphysema, cirrhosis of the liver, and others—it is now known that lifestyle, environmental factors, and genetic risk factors play a far more decisive role than age alone. Lifestyle and behavioral factors are particularly important. The U.S. Surgeon-General has said they may account for as much as half of all U.S. mortality today (U.S. Dept. of HEW, 1979). They are also generally subject to professional intervention and individual control. Even in the case of environmental and genetic factors, professional assistance and individual knowledge can often lead to corrective or at least ameliorative action.

The extent to which this new marriage of prevention and gerontology has progressed is indicated in the following statement by Drs. E.L. Bierman and William Hazzard (author of the concept of “preventive gerontology”), associate editors of one of the major new textbooks of geriatric medicine:

Prevention or attenuation of the chronic diseases of aging should be the ultimate goal of geriatric practice. (Bierman and Hazzard, 1985)

Examples of this new professional interest abound:

- “Productive aging” is the phrase coined by Dr. Robert Butler, former Director, National Institute on Aging, and now Chairman, Department of

Geriatrics and Adult Development, Mount Sinai School of Medicine, New York City, to address "mobilization of the productive potential of the elders of society" (Butler and Gleason, 1985).

- "Successful aging" is the name given to a multi-million dollar research project funded by the MacArthur Foundation and directed by Dr. John Rowe. The study involves a long-term effort to identify the causes and "predictors" of "successful aging" and the investigators hope to produce a "risk profile" to facilitate early positive intervention in the aging process (MacArthur, 1985).

- The "extension of the adult prime" is a concept and goal articulated by the Aging Society Project of the Carnegie Corporation of New York (Pifer and Bronte, 1986).

- "Old Age Is Not What It Used To Be" is the title of a popular *New York Times* article summarizing recent neurological and psychological studies showing the malleability of the aging human brain and psyche and the continued opportunity for positive professional assistance (Tavris, 1987).

There are, of course, major distinctions between these and related concepts, programs, and statements. (One is a basic science research project; one is addressed primarily to practicing physicians; one to older people themselves; another addresses public policy.) What they have in common is a conviction based on accumulating evidence, albeit still incomplete, that the mechanisms of disease can be understood and, within certain limits, controlled, resulting in a positive, rather than a negative, approach to aging.

The challenge now facing those of us who share this conviction is threefold: (1) to strengthen the science base linking specific risk factors to specific disease outcomes, and linking specific modifications in these risk factors to modified outcomes; (2) to translate these basic scientific findings into practical guidelines that can be used by the public, physicians, and other caregivers to prevent or postpone individual disease and disability; and (3) to devise organizational, financial, and other socioeconomic modalities and policies to permit the incorporation of the new science base and prevention technologies into routine health care for the American people.

While this volume addresses all three of these challenges, the emphasis is clearly on the second, especially the development of preventive strategies for physicians, nurses, and other clinicians to use in their regular patient care, and modifications in medical education to better prepare future practitioners for this responsibility.

The need for such emphasis on implementation is tremendous. Despite the progress just noted at the conceptual and research levels, there is a serious lag in implementation, especially the integration of scientific findings into regular clinical practices. There is even some evidence of retrogression in this respect. For example, a 1986 Harris public opinion poll found that only 30 percent of adults had received "unsolicited advice about health habits" from a doctor, down from 36 percent in 1983 (Prevention Index, 1987). The 30 percent contrasted with 50 percent who said that some "health book or magazine caused reconsideration of habits."

There is no question but that physicians are still far from fulfilling their potential in terms of prevention for the elderly. Too few women are being screened for breast cancer. Even in such traditional medical areas as vaccination, performance is disappointing. To the frustration of flu experts, only about 20 percent of Americans in high-risk groups, including the elderly, are vaccinated each fall (LaForce, 1987) despite the evidence from controlled studies that flu vaccine is 70 to 80 percent effective. In the words of one influenza authority,

"Physicians have not been trained to think of the routine immunization needs of their adult patients; it's not part of their everyday sphere of thinking."

This is probably the key to the problem. Despite all the new developments, prevention still plays an insignificant role in the education of most physicians. For example, a survey of 90 medical schools found little attention to hypertension at either undergraduate or residency levels (Moser et al., 1985). Students received an average of only 18 hours of instruction in hypertension management over the course of four years despite the fact that high blood pressure is the most common chronic disease in America. A 1983-84 survey by the Association of American Medical Colleges reports that the proportion of medical schools with a clearly-defined nutrition course was only 17 percent, even less than in 1958 (National Academy of Sciences, 1985). Reviewing the obstacles to greater acceptance of prevention in regular medical practice, Dr. Robert Levy, former Director, National Heart Institute and now Professor of Medicine, Columbia University, said, "The key to acceptance of prevention/health promotion lies with the gatekeepers to the practice of medicine, the medical schools" (American Council on Life Insurance, 1985).

The best response to all such shortcomings—inadequate attention to prevention by clinicians and professional schools and overreliance by patients on non-professional sources of information—is not "to curse the darkness but to light a few candles." That is exactly what this handbook for practitioners attempts to do.

The authors, a talented group of young physician-educators at the University of Pennsylvania School of Medicine, have made a major contribution both to medical education and to patient care for the growing legions of America's elderly, so many of whom are seeking professional guidance on these issues. I commend it to all who are seriously interested in furthering the goal of a healthy, active and productive life for older Americans and an affordable health care system for the nation as a whole.

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1

PREVENTIVE CARE FOR THE ELDERLY

Risa Lavizzo-Mourey, MD, MBA
Deborah Diserens, MPhil



A CONCEPT WHOSE AGE HAS COME

Almost 400 years ago, in "As You Like It," Shakespeare described the world as a stage on which we, the actors, start out "mewling and puking," crest in activity in the middle of life and, thereafter, physically and mentally decline to a second childhood "sans eyes, sans teeth, sans everything." In recent years a shift has been occurring in this long-accepted script for aging. To borrow from Gershwin, "It ain't necessarily so."

The change in the conceptualization of aging is represented by those, such as Fries,¹ who contend that, while the length of the human life span is fixed, chronic disease can be postponed by changes in lifestyle, modifying the common physiological indicators of aging so that the average period of disability may be reduced and postponed until shortly before death. This "compression of morbidity" theory suggests that, although chronic disease may not be eliminated, its onset may be delayed, thereby changing notions of aging from a process of gradual decline in function to a sustained period of activity until a rapid onset of disease and curtailed period of disability before death. The preventive efforts of clinicians in encouraging strategies for modifying the aging process are of obvious importance.

While prevention has received a great deal of attention in the medical community in the last 15 to 20 years, little of this research or clinical activity has been addressed directly to the elderly population. Today, with the increasing emphasis on geriatric care, there is a rising awareness that clinicians' preventive efforts on behalf of the elderly can yield important benefits not only for individuals, by improving their quality of life, but also for society through potential cost savings. In addition, there is evidence that the elderly population may be more receptive to health-promoting information and activities than has been previously believed. Preventive care for the elderly is a concept whose age has come. The issue facing clinicians is that this awareness has not yet been fully realized in medical practice

EFFICACY OF PREVENTION FOR THE ELDERLY

Despite, or possibly because of, the fact that very little is yet known about the efficacy of many treatments in the elderly population, studies suggest that the elderly receive less screening than younger persons. Some controlled trial studies

have found no difference in mortality between those in the population who were screened and unscreened elderly control groups; however, as sensitivity to the particular needs of the elderly improves, it is likely that mortality will increasingly be considered only one measure of outcome in a group where prevention of disability, maintenance of function, and quality of life may be more important considerations. It is worthy of note that in the 1979 Department of Health and Human Services publication *Healthy People*,² the goal for older people is phrased in terms of reduction of days of restricted activity rather than death rates, as had previously been the case. (The stated goal is to reduce the average number of days of restricted activity to fewer than 30 days per year for people 65 and over by 1990. The average was 38.4 days in 1975 and 39.2 days in 1980.^{3,4})

If primary prevention, the identification and reversal or elimination of risk factors, was universally implemented and effective, most of us would live disease- and accident-free into old age, with death occurring according to the schedule of our genetic limits. This would result in a rectangular survival curve for the population and sustained physical and mental function from birth to death for each person. While this ideal may describe our potential, a large percentage of the elderly population has already experienced some degree of decline in function. If a reduction in early mortality is the goal of preventive efforts, then most would agree that the elderly are an inappropriate target for encouraging the lifestyle changes implied by primary prevention. The pervasiveness of this attitude and of using mortality rates as the criterion of success for preventive efforts is reflected in what, up until recently, has been a virtual void of discussion of preventive care for the elderly. If the goal is shifted, however, from reduced mortality rates to sustained independence, avoidance of unnecessary disability, and restoration or maintenance of function, then secondary prevention, the detection of asymptomatic disease, and most especially tertiary prevention, the detection of symptomatic but unreported disease or impairment, are as important for the elderly as for younger populations. Perhaps more so. From this broader view of the aims of prevention, encouraging lifestyle changes in elderly patients is still important, not only for the purpose of avoiding disease but also as a way to reverse the effects of disease and restore function, where possible, or to minimize further decline. The underlying purpose of this book is to reinforce clinicians' efforts to strive for "preventive success" that includes outcomes measured not only by length of life but also by its sustained breadth.

Unfortunately, scientific research on the efficacy of various prevention strategies and interventions for the elderly is little past its infancy. Relatively few studies have been done, and those that have been done often yield conflicting results due to, among other factors, variability of the samples studied, the methods used, and the definition of outcomes. However, amidst what may initially appear a discouraging array of quasi-scientific opinions about "what to do," there has evolved fairly widespread agreement in the identification of those health problems of the elderly where preventive efforts of clinicians have the greatest potential to make a difference.

Mobility and Function. Mobility and function are the major factors used by older people to assess whether they are in relative good or poor health, and fully 50% of the elderly have some limitation in function that prevents them from being fully independent.^{5,6} Yet, few clinicians systematically assess the functional status of their elderly patients, and even fewer have developed a network of other

professionals who can assist in restoring function or developing compensatory strategies that may prevent further decline.

Sensory Loss. Five percent of persons over 65 have severe visual impairments, with the percentage who have some trouble seeing reaching as high as 50% in nursing homes, yet it is estimated that only a few percent receive adequate attention for their problems.⁷ The prevalence of hearing impairment is 25% of those over 65, rising to 50% of those over 85.^{8,9,10} Studies suggest that physicians may underestimate the prevalence of hearing impairment by 50% or more.¹¹ Detection of sensory loss and subsequent restoration of sensory function may eradicate, among other things, many psychiatric symptoms, including confusion, anxiety, fearfulness and depression, without the need for psychiatric intervention.¹¹

Injuries. Injuries are the fifth leading cause of death in persons older than 65,¹² and each year almost 5 million elderly persons sustain non-fatal injuries, about 75% of them in the home.¹³ The estimated costs per year due to hip fractures alone in those over 65 is 6.1 billion dollars.¹⁴ Physician intervention, such as early detection of sensory loss and counseling patients in a timely fashion to make appropriate adjustments in the home environment, may prevent many injuries.

Exercise. The elderly tend to become unnecessarily sedentary. For example, in 1975 only 36% of adults over 65 reported taking regular walks,¹⁵ yet there is increasing evidence that through exercise programs fitness can be regained,^{16,17,18} with improvements in aerobic capacity, muscle strength, flexibility, range of motion and coordination. To the degree that elderly individuals' loss of function may be related to deconditioning, even small improvements in fitness may increase their independence and ability to care for themselves.

Adverse Drug Reactions. Nearly one-third of elderly patients report adverse reactions to medications,^{19,20} with as many as 65% of these being avoidable. Adverse drug reactions account for as many as 10% of hospitalizations among the elderly.^{19,21} Improved understanding of physiologic changes related to aging, increased awareness of potential drug interactions, and more frequent and careful review of medications are all important for the physician who wishes to minimize patients' adverse reactions to drugs.

Depression. It is estimated that 13–18% of persons over 65 have clinically significant depression.^{22,23} Yet as many as 75% of elderly suffering from depression are unknown to the primary care physician,²⁴ which is unfortunate since studies suggest that from 55–80% of depressed elderly patients will respond to treatment.^{25,26,27} The importance of detection and an increased awareness of the subtlety of presentations and causes of depression in the elderly is underscored by the fact that a large percentage of older patients show a preference for using medical providers to care for psychiatric problems.²⁸

Immunizations. While influenza vaccine is probably 60–70% effective in reducing mortality and admission to the hospital in elderly patients when it is adequately matched to the epidemic virus of a season, physicians are currently

providing immunizations for only half of their elderly patients who have chronic disease and only a third of their otherwise healthy elderly patients.¹¹ The situation is similar with pneumococcal vaccination. Assuming vaccination rates of only 22%, the U.S. Office of Technology Assessment estimated that immunization of elderly patients saved about 6.6 million dollars in medical costs associated with epidemic influenza in 1971.²⁹

Nutrition. It is estimated that 30% of community-dwelling elderly individuals have diets deficient in at least one major nutrient,³⁰ and at the same time one study suggests that physicians may fail to recognize up to 50% of cases of malnutrition.³¹ Dietary therapies, currently popular among the elderly, may lead to toxicity syndromes or interact with other medications. Improved awareness of proper nutritional guidelines is needed on the part of both clinicians and their elderly patients.

Alcoholism. The average estimate of the prevalence of alcoholism in the elderly is about 10%, yet “a disproportionately small number of the elderly with alcoholism receive therapy for it despite the fact that treatment may be as much as twice as effective as in younger persons.”¹¹ All elderly should be educated about the accentuation of alcohol’s immediate effects with aging and warned of potential alcohol-drug interactions.

Smoking. Smoking is still prevalent among those over 65: 17% for men and 12% for women.³² Elderly smokers who stop can still expect moderate increases in life expectancy, and just 60–120 seconds of verbal advice from the physician has been associated with a significant increase in the quit rate.³³

Cardiovascular Disease. For the last 20 years, mortality from ischemic heart disease in the U.S. has been steadily declining. Coronary artery disease nevertheless remains the leading cause of death among individuals over 65.³⁴ It has been projected that if risk factors and the efficacy of medical care remain constant, there will be a 40% increase in the incidence, mortality, and costs associated with coronary artery disease by the year 2010.³⁵ Making informed management decisions for elderly patients involves a careful weighing of the limited data available on risk factor control in the elderly and an individualized plan for diet, exercise and smoking cessation.

Hypertension. About 15% of whites and 30% of blacks 65 and older have diastolic hypertension, and 10 to 15% of all elderly have isolated systolic hypertension.¹¹ Among those over 75, the prevalence of systolic hypertension is 25% and is even higher for diastolic hypertension. This results in an increased risk for cardiovascular complications of approximately 30% for every 10 mmHg increment in systolic blood pressure.³⁶ One study suggested that among the hypertensive elderly, treatment results in a reduction in cardiovascular mortality by 27% and in cerebrovascular events by 52%.³⁷ Clearly, early detection and treatment of hypertension is very important in the elderly.

Cancer. The risk of developing cancer between 65 and 85 is 20%, with 50% of all cancers and 60% of all cancer deaths occurring in the 11% of the population that is over 65.¹¹ Recommended screening frequencies for the elderly have varied considerably in various published recommendations. Consideration of several