

TESTIMONY

Joint Economic Committee

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Postponement of Illness
and the Future of Medicare Costs

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POSTPONEMENT OF ILLNESS AND THE FUTURE OF MEDICARE COSTS

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SYNOPSIS

The Objectives:

- (1) Improving the national health**
- (2) Decreasing medical care expenditures**

The Facts:

- (1) We already know how to improve health and save money, it requires postponement of the onset of illness in the individual.**
- (2) Barriers to implementing sound preventive approaches are based in old belief structures which are false, diverting and ultimately unsubstantial.**
- (3) The Compression of Morbidity paradigm provides an underlying structure.**
- (4) Morbidity compression is already occurring, with an annual 2 % reduction in disability rates and only a 1 % reduction in mortality rates.**
- (5) Epidemiologic studies show potential disability postponement of 12 years by lifestyle changes.**
- (6) Multiple, large, randomized scientific trials prove the ability to reduce health risks and medical care costs even in the first year of a program, even in seniors.**

- (7) Effective health enhancement and cost saving programs include components of risk reduction, self-efficacy, self management, high risk, chronic disease, and end-of-life components.**
- (8) Policy must be informed by evidence.**

The Policies:

- (1) Focus on the big targets; Three risk factors, Four diseases, Fifty percent of illness.**
- (2) Craft careful, prudent, yet urgent approaches.**
- (3) Use multiple approaches (legislative, community, worksite, public education, incentives, and others).**
- (4) Keep these approaches strictly bipartisan; they are.**
- (5) Use this Committee in a major role to reconcile health and economic goals.**
- (6) Immediately support the Senior Risk Reduction Project (SRRP) Demonstration, the HeLP bill (S2558), the Health Promotion FIRST Act, reimbursement initiatives for qualified prevention coverage, worksite initiatives for both small and large business, and rigorous external evaluation of these efforts.**

Discussion

Health care costs have resumed double-digit annual increases and are in crisis. Existing “control” mechanisms principally based upon rationing of supply have failed to be effective. Current medical care costs currently approximate 16 % of GDP and have yearly increases which markedly exceed increases in GDP. These costs threaten budgets in other areas, and put the

Medicare program at risk. The illness burden of the nation, driven by the health problems of increasing numbers of seniors, is of mammoth amount. The ironic reality is that we already know how to improve health and at the same time reduce medial care costs. Healthier people need less medical care; they place less burden on the demand side of the equation. We know how to postpone illness; it is done by prevention. [1-14]

Three major beliefs lie behind our failure to systematically approach postponement of illness.

(1) “The data are soft.” False. There is far more evidence for the effectiveness of well-designed and applied preventive approaches than for most of “evidence-based medicine.” (2) “There is a lag of 20 years or more before a change in a health risk behavior is likely to prevent a disease event, such as a heart attack, and we have a crisis now.” “I will just be making my employees healthier for their next employer.” False. For some events and some illnesses in some populations there is indeed a substantial lag, but for most populations, measurable reductions in cost and improvement of health and productivity, on the order of 10-20 %, are achievable in the first 12 months of a sound program, and continue to build thereafter. (3) ”People with good health habits live longer and will have greater medical care costs.” False. Healthier and longer-lived persons do not have increased cumulative lifetime or Medicare costs, as described by James Lubitz. [14]

I will make four points and explore their policy implications. First, the underlying theory behind health enhancement initiatives is the Compression of Morbidity. Second, disability rates in the United States can decline by at least 2 % per year, while mortality rates will decline more slowly, at about 1 % per year, as described by Kenneth Manton. Third, the onset age of chronic infirmity

potentially may be postponed by up to 12 years. Fourth, multiple large randomized, controlled scientific trials have proved the effectiveness and cost-effectiveness of sound preventive approaches to the postponement of illness.

Compression of Morbidity

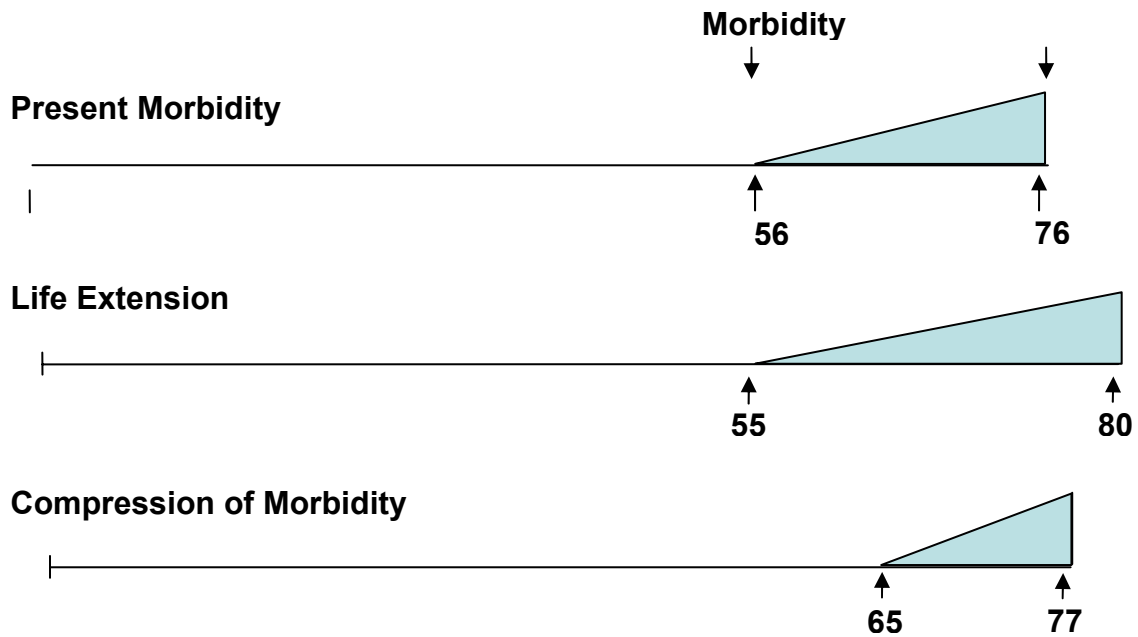
The Compression of Morbidity Paradigm Provides a Theoretical Structure for

Improvement of Health and Reduction of Medical Care Costs. Compression of Morbidity occurs when the onset age of chronic illness rises more rapidly than the age at death, shortening the period of ill health toward the end of life. Morbidity compression occurs when disability rates decline more rapidly than mortality rates.

The Compression of Morbidity paradigm envisions reduction of lifetime infirmity, shown on the figure as the shaded area, and of medical care costs, by squeezing the period of morbidity between an increasing age at disability onset and the age at death. The healthy life is seen as a life vigorous and vital until shortly before its natural close. This becomes achievable by postponing the onset of disability and high medical costs through reduction of chronic illness and the pursuit of vigorous and healthy lifestyles.[6]

In the Figure below, current average disability is represented by the shaded areas on the top line and is concentrated between an onset at age 56 and the age at death, now averaging 76 years. Extension of morbidity, on the second line, occurs if longevity is increased but disability is not postponed; this is the worst-case scenario. Compression of morbidity, on the third line, occurs when disability is postponed more than longevity is extended, as with reduction in health risks. This scenario reduces costs and improves life quality.[3,6]

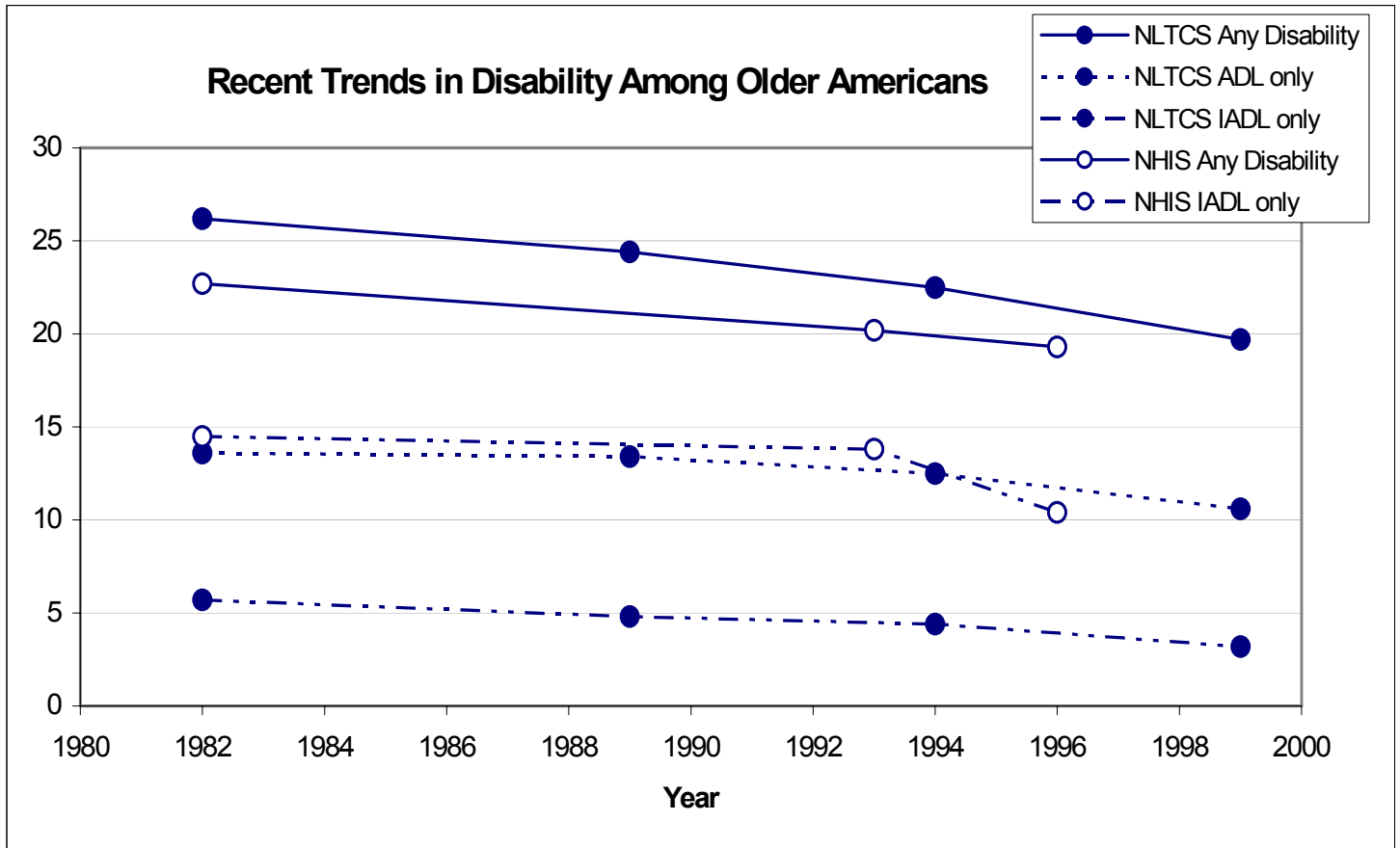
Compression of Morbidity



Declining Disability in the United States

Disability in the United States is declining by more than 2% per year; mortality rates by only 1% per year. Declines in disability have been associated with reduction in smoking and saturated fat intake, improved control of hypertension, functional restoration procedures such as

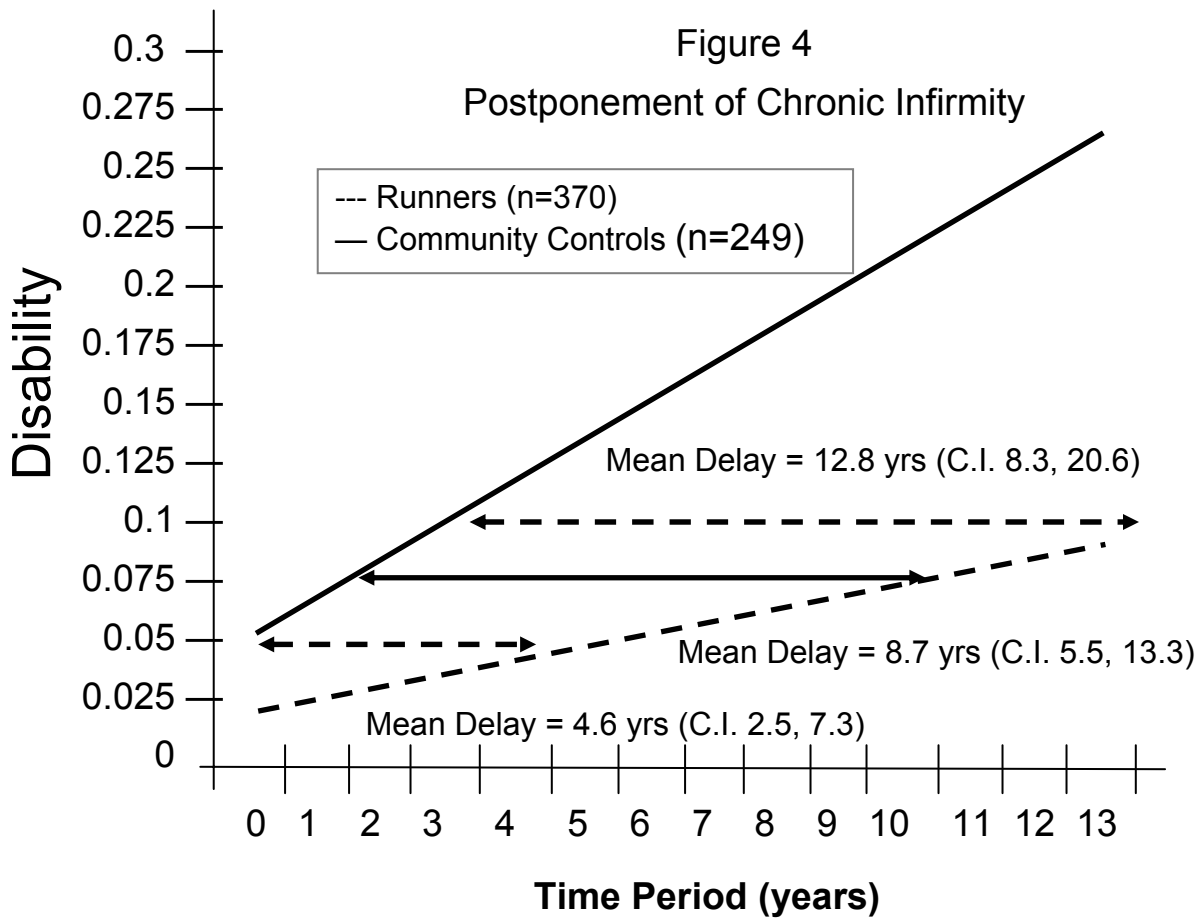
knee and hip replacement, and wider use of cholesterol-lowering drugs. The declines have been impeded by the epidemic of obesity.



Disability, as documented by the National Health Interview Surveys and the National Long Term Care Surveys shown in the Figure above, has been declining at about 2 % per year since 1982 and even more rapidly in the most recent five year period, while mortality rates are declining at about 1 % per year. These data directly document compression of morbidity. These trends have many contributing causes, from declines in cigarette smoking to advances in medical science. It is important to note that these improvements in the national health to date have occurred despite

the absence of a systematic approach to reduction of health risks; our increasingly obese and sedentary population offers major opportunities for continued reduction in chronic illness.

Manton and Singer have estimated that a decline of 1.6 % per year would be sufficient to keep Medicare solvent [7-10].



Postponement of Onset of Disability

The onset of chronic illness may be potentially postponed by up to 12 years by lifestyle changes. Cumulative lifetime disability may be reduced by a factor of four. Recent data from major longitudinal studies document the association between reduced health risks and postponement of disability. For eighteen years our research group at Stanford has studied the effects of long-distance running and other vigorous exercise, after age 58, on health outcomes. Results were remarkable, as shown in the Figure above. Those exercising regularly postponed disability by more than 12 years compared with controls, and health care costs were reduced.. Those who took up vigorous exercise later in life nearly achieved the same health benefits as lifetime exercisers. For those who died, the exercisers had far less disability in the year prior to death, as well as in all other prior years. In the University of Pennsylvania Alumni study we have reported similar results in those exercising, of moderate weight, and not smoking. Daviglius and colleagues showed substantial decreases in Medicare costs for those with few health risk factors in mid-life. Reed and colleagues prospectively determined the effects of health risks, with results similar to ours. These results from the major studies are consistent with the broader literature [4,5,12-16].

Randomized Controlled Trials Prove Effectiveness at Health Risk and Cost Reduction

Randomized controlled trials represent the highest standard of scientific proof. Such trials prove our ability to achieve healthier and less costly lives, both in mid-life and in seniors, through relatively inexpensive health improvement programs costing less than \$100 per year per person annually. The most consistently effective approach has been “tailored print interventions,”

where each set of feedback materials to the participant is exquisitely configured for the precise characteristics and previous behaviors of that individual.

The Bank of America Retiree Study, the California Public Employee Retirement System trial, disease-specific trials in arthritis and other chronic illnesses, and trials of self-management materials have documented our ability to both reduce health risks and to achieve a substantial return on investment, ranging from 3 to 1 to 6 to 1, as shown in the Table below. These results indicate that investing about \$100 per year per person annually, less than 2 % of the \$5500 paid out to the average beneficiary, should be expected to reduce Medicare claims by about \$400 per beneficiary per year, even in the first year [1,3,17,18].

	n	time	health risk score	cost per person	savings per person	ROI
Bank of America	4,712	12 months	-12%	\$29	\$179	6.1
CALPers	57,268	12 months	-10%	\$59	\$300	5.1
Arthritis	809	6 months	-7%	\$50	\$260	5.2
Parkinson's	290	6 months	-10%	\$100	\$570	5.7
Take Care of Yourself	2,833	12 months	-17%	\$6	\$20	3.5

Major Policy Axioms Follow:

The health of seniors is our greatest national health problem and improving senior health is a social imperative. There is an increasing national illness burden, driven by the increasing numbers of seniors.[19,20]

There is a medical care cost crisis today. Medicare is threatened, as is discretionary spending in other areas.

Crises require direct, aggressive, immediate action to avert future consequences; benign neglect is not an option.

All approaches to compression of morbidity (medical, social, and personal) have in common a valuation of the quality of life (morbidity) which is at least as high as the valuation of the quantity of life (mortality).

Effective approaches to the twin goals of health improvement and cost reduction must substantially postpone the onset of morbidity.

By definition, postponement can only occur through prevention, usually primary prevention (smoking cessation, exercise, weight control, baby aspirin), sometimes secondary prevention (hypertension treatment, cholesterol lowering), and occasionally tertiary prevention (joint replacement, pacemaker, heart transplant). Primary prevention is usually by far the most efficient, and tertiary prevention the least efficient [19].

Current medical practices reverse this order of valuation, with tertiary prevention (and even no prevention at all) valued more highly than secondary prevention, which in turn is valued more highly than primary prevention.

We have done well with public health measures, and we have done well in the personal medical care system. The need today is for a “population health” system which identifies risks and intervenes prior to a medical event. This will not be a job for doctors, nurses, and hospitals, which are over-worked and over-stressed doing their necessary tasks of care. Rather, driven by the need for population health systems which are efficient, inexpensive, and even cost-saving, they will be computer-aided and use the mail, telephone, and web to deliver complex but simple personalized interventions and health risk monitoring.

Interventions must include at least six components, directed at the largest prevention and cost targets: (1) health risk reduction, (2) personal self-efficacy (health confidence) improvement, (3) self-management skill training, (4) emphasis on high-risk persons, (5) use of chronic disease self-management techniques, and (6) encouragement of humane end-of-life care. Together, these components are directed at achieving initial health and cost goals in the first year [1]. They go beyond “health promotion” in the traditional sense to embrace a broader view of the exercise of personal autonomy.

Focus on the Big Targets: Three Risk Factors, Four Diseases, Fifty Percent of Illness. 3; 4; 50. Risk Factors - Smoking Cessation, Obesity and Diet, Lack of Exercise. Diseases - Heart disease, Diabetes, Cancer, Lung Disease. We of course need to broaden this model, which is increasingly discussed at the World Health Organization, but it must remain the focus.

Policy must be informed by evidence. The plan currently in process at the Centers for Medicare and Medicaid Services is a fine example. CMS (then HCFA) contracted with RAND to review the evidence behind the notion of population-based approaches to improvement of senior health driven by health risk appraisals. RAND found the evidence compelling but not certain and recommended a demonstration project among Medicare beneficiaries.[21] A large randomized controlled trial was designed, approved by CMS, announced by HHS Secretary Tommy Thompson, and should begin soon. If the demonstration project is successful, changes to sections 1861 and 1862 of the Medicare enabling legislation will need to be made, allowing for population-based preventive programs meeting appropriate quality standards to be reimbursed under Medicare. The anticipated benefit? For a cost of approximately \$100 per Medicare beneficiary, about 2 % of average expenditures, approximately a \$400 decrease in Medicare claims per person would be realized. The real dividend? A substantial improvement in senior health, a reduction of the national illness burden, and compression of morbidity.

This careful, prudent, yet urgent approach should also employ other venues. There is a need for similar approaches from the private sector, including “pre-Medicare” age 55-64 population health programs sponsored by health plans, and worksite health promotion programs sponsored by the employer [healthproject.Stanford.edu]. Many such needs are identified in the HeLP legislation recently introduced into the Senate by Senator Harkin and the HealthPromotionFIRST legislation soon to be introduced [Appendix A, healthpromotionadvocates.org].

Multiple approaches to health risk reduction are required. For example, legislative measures to reduce passive exposure to cigarette smoke have been helpful. Public education has helped to drive down the intake of saturated fats and to reduce active cigarette smoking. Incentives for

positive health risk changes, of a variety of types, may be effective. Medical treatment of high blood pressure and of high cholesterol is an effective means of prevention.

This Committee must play a major role. The barriers to health enhancement and cost reduction programs, unexpectedly, are disbelief and misbelief, and authoritative economic endorsements are sorely needed.

There are seven immediate policy imperatives. First, support **the Medicare Senior Risk Reduction (SRRP) Demonstration Project** by CMS and encourage its early completion. It is critically important that this demonstration is initiated, completed, and implemented. Second, **support proven senior risk reduction programs as a Medicare benefit**; changes will be required in Sections 1861 and 1862 of the enabling legislation; these will improve the health of Medicare beneficiaries through population health measures. Third, **support (HeLP), the Healthy Lifestyle and Prevention Act (S2558)**, recently introduced by Senator Harkin. Fourth, support the **Health Promotion FIRST (Funding Integrated Research Synthesis and Training) Act** which will be introduced by Senator Lugar this month and provides a strategic planning and research framework to support building a strong research base for health promotion. (See healthpromotionadvocates.org). Fifth, **encourage reimbursement by Federal, State, and private medical insurance for qualified health education and health promotion programs provided as population health initiatives.** We must develop a culture of health rather than of disease. Sixth, **encourage work-site health promotion activities to encourage health and productivity and to reduce costs.** Details may be found at healthproject.stanford.edu. Finally, **monitor and evaluate these initiatives rigorously.** We must only encourage and fund programs that are known to be effective.

We can improve health and reduce medical care costs substantially with currently proven health enhancement approaches. These approaches, in turn, can be refined and improved. Demand side health improvement initiatives benefit the individual, the payer, and the society. They do not encourage rationing or adversarial stances. They are entirely bipartisan. They are not inconsistent with other cost-containment initiatives and, indeed, will make such initiatives more effective. The need for a healthier society has never been more obvious or more important.

Appendix A

HeLP (Healthy Lifestyles and Prevention) America Act (S2558) [Introduced June 2004 by Senator Harkin]

- I. Healthier Kids and Schools**
- II. Healthier Communities and Workplaces**
- III. Responsible Marketing and Consumer Awareness**
- IV. Reimbursement for Prevention services**
- V. National Health Promotion Trust Fund**
- VI. Research**

[Title 2, content example] Provides 50 % tax credit for up to \$200/employee for employers who provide a comprehensive health promotion program consisting of awareness programs, behavior change programs and supportive environments; funds to universities to provide program evaluation services for employers; grants to health promotion providers to deliver health promotion programs to small businesses, best practice guidance from CDC, and a national campaign to business decision makers on the financial returns of health promotion programs. This is important because workplace health promotion programs have been shown to be effective in improving employee health and reducing medical costs, yet small and medium employers are not aware of the benefits and have challenges in implementing programs. Estimated cost: \$2.07 billion over five years. By the end of five years, all costs to the federal government will have been recovered and the government will receive a net gain of \$42 million in federal tax receipts if the ROI from medical cost reductions is 1.0 in year 1,

1.5 in year 2, and 2.0 in years three, four, and five. This does not include savings related to reduction in absenteeism and increases in productivity.

Health Promotion FIRST (Funding Integrated Research Synthesis and Training) Act [To be Introduced July/August 2004 by Senator Lugar]

This Act develops an improved infrastructure for health promotion, a field which needs additional and more rigorously trained scientists. It provides a strategic planning and research backbone to support the growing area of health promotion, using a process that engages a broad range of scientific disciplines and experienced practitioners. In general, the NIH will fund basic structural research, and the CDC will complement these efforts with applied programs.

Coordination and planning will encompass efforts to attract the best and the brightest into the field. This field is crucially important to the nation's health, yet remains greatly underdeveloped. The Act was developed with input from over 300 scientists and practitioners. Estimated cost: \$141 million over 5 years.

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Websites:

Healthproject.stanford.edu

Proven effective need and demand reduction programs, exemplified by those 70 programs receiving the C. Everett Koop National Health Awards.

Healthpromotionadvocates.org

Grassroots health promotion advocacy group, summaries and texts of pending legislation.

JAMES F. FRIES, M.D.

Dr. Fries is a Professor of Medicine at Stanford University School of Medicine. He is nationally and internationally recognized as a leader in conceptualization of strategies to promote healthy aging, in behavioral approaches to decrease morbidity, in long-term outcome assessment, in self-management strategies, in design of efficacious and effective interventions, in evaluation of long-term behavioral interventions by randomized clinical trial, and in managing large scale patient data collection and analysis projects. He has published over 245 articles, 11 books, and numerous book chapters and invited papers, and is a frequent keynote speaker.

In 1980, he developed the Compression of Morbidity hypothesis, which has provided the conceptual foundation for health promotion and healthy aging programs. The Compression of Morbidity hypothesis holds that primary preventive factors have a greater effect upon morbidity than upon mortality and that chronic diseases with onset later in life will be present for a shorter length of time. Recent work by Dr. Fries on this hypothesis include addresses at both the Nobel Forum and The Institute of Medicine, an editorial in *The American Journal of Public Health*, a major policy paper focused on Need and Demand Reduction in *Health Affairs*, a recent Special Article in the *New England Journal of Medicine*, and a review of progress in measuring and monitoring compression of morbidity in the *Annals of Internal Medicine*.

Dr. Fries established ARAMIS (Arthritis, Rheumatism and Aging Medical Information System) in 1975 and has continued as Principal Investigator through its current 28th year, funded by the National Institutes of Health. ARAMIS pioneered the concept of the chronic disease databank

and remains the prime example of this investigative technique. Dr. Fries plays an important role in The Health Project, a private-public consortium of national leaders who seek solutions to health care crises through behavioral approaches in worksite, health plan, or community programs which are directed at reduction in the national illness burden and increases in patient autonomy. Dr. Fries established Healthtrac, Inc. in 1984 and he serves as consulting Medical Director, with particular interest in design and evaluation of tailored interventions. Healthtrac is the only four-time winner of the renowned C. Everett Koop National Health Award. Dr. Fries was the first individual recipient of this award.

Modern self-management techniques directed at empowering patients toward appropriate decision-making in their own best interest were pioneered by Dr. Fries and co-author Donald Vickery in 1976 with the book “Take Care of Yourself”, which has gone through 175 printings and 16 million copies through the present. Four separate randomized controlled trials established the efficacy of “Take Care of Yourself” in reducing physician visitation by from seven to seventeen percent. Dr. Fries wrote “Living Well”, based upon “Take Care of Yourself” concepts and directed at senior populations, “The Arthritis Help Book” (co-authored) and “Arthritis: A Comprehensive Guide.”

He lives with his wife, horses, and dogs, and a barn cat in Woodside, California. He has run the Boston Marathon, among others, and has climbed (6) or attempted to climb (1) the highest mountain on each continent.