

Resources Needed for National Diabetes Prevention and Control Program**(\$40 million)**

In order to fully fund a diabetes prevention and control program, an additional \$40 million is needed. These resources would enable CDC to:

- Establish **comprehensive diabetes prevention and control programs** in all 50 states, with an emphasis on improving access to, and availability and affordability of quality diabetes care throughout the nation. (\$25 million)
- Implement the **public health components of the National Diabetes Education Program**, which is a CDC-NIH collaborative effort, to improve the treatment and outcomes for persons with diabetes, promote early diagnosis, and ultimately, to prevent the onset of this disease. (\$5 million in year 1; an additional \$5 million would be needed in year 2)
- Develop and implement **public health surveillance systems**, nationally and at the state level, for identifying the diabetes burden and for monitoring trends. (\$5 million)
- Conduct **applied research** in order to understand how to more effectively apply scientific findings in today's health care system. (\$5 million)

Kennedy Disability Reduction/
Medicare Trust Fund
File

MATERIALS

1. Poll on children's health and tobacco
2. Duke study -- Medicare
3. Jerry Avorn (Harvard Medical School) paper on success of program to educate physicians about appropriate therapies
4. Mark Chassin testimony on scope of inappropriate medical treatments
5. Statements on promise of Biomedical Research and economic impact (Charles Vest-Nobel Laureate, MIT; Herbert Partis-Dean, Columbia Medical School; James Howell-Economist)
6. Quality Care Survey

NATIONAL POLLS

The American Cancer Society commissioned Penn & Schoen Associates to do 2 polls, the first poll was conducted on November 20th, among 1996 Presidential election voters throughout the U.S. The second was one month later, as a follow-up to the first poll, asking more specific questions about how the public would spend the increased revenue, if the tobacco tax was raised.

The key points to make from the polls are:

From the first poll:

- Seventy-three percent (73%) of the public supports raising revenue from federal tobacco excise taxes to pay for health care for all children who need it.
- Fifty-nine percent (59%) of the public said they are not likely to support a political candidate in future elections who accepts money from the tobacco industry.

From the second poll:

- Two-thirds of Americans want Congress to do something about health care coverage for the uninsured.
- If the tobacco tax were to be raised, eighty-seven percent (87%) of the American public would support using the revenue to expand health care services for children.
- Eighty-four percent (84%) of the American public supports the use of the excise tax revenue to pay for vouchers to purchase health insurance for children who are not insured.
- Eighty-five percent (85%) of the American public indicated that they want to make health care more affordable.
- When forced to choose between various options for spending the additional excise tax revenue, 55% of the American public supported using tobacco excise taxes for children's health initiatives -- the highest percentage of any option. After children's health, public education was supported by 20% of the public, and biomedical research was supported by 17%.

NEWS SERVICES



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AMERICAN CANCER SOCIETY RELEASES POLL RESULTS SHOWING PUBLIC CONCERN FOR HEALTH CARE AND SUPPORTING INCREASE IN FEDERAL TOBACCO TAX

Washington, DC , January 28, 1997 -- Two thirds of Americans want Congress to do something about health care coverage for the uninsured and favor raising the federal excise tax on tobacco to fund improved, more accessible health care and biomedical research, according to a poll released today by the American Cancer Society. The poll also reveals an across-the-board public concern over the quality of today's managed health care.

The results are from two recent polls conducted by Penn & Schoen Associates, Inc. for the American Cancer Society that show the depth of public support for federal funding of cancer control, research and prevention programs.

"There is great concern among the American public, that with the rapid change to health maintenance organizations and other types of managed care, quality of care is being compromised," said Harmon Eyre, M.D., executive vice president of Research and Cancer Control for the American Cancer Society. "We fear this might put cancer patients at risk of not being able to access the specialty care they need in a timely manner."

Fifty-four percent (54%) were very concerned about the rapid changes in the health care system caused by managed care organizations. Even more, 74% were concerned about the quality of care provided by managed care organizations if they or a family member were diagnosed with a serious illness.

"This is clearly an issue Congress needs to think about," stressed Dr. Eyre. "The federal government must play a key role if we are going to reduce cancer death rates and maintain quality care."

(more)

There is overwhelming support (73%) for raising revenue to pay for health care for all children who need it by increasing the federal tobacco excise tax -- which at 24 cents per pack, has not been raised since 1993.

If forced to choose, almost two in three Americans would spend higher excise taxes to expand health care coverage for children (58%). Sixty-eight percent (68%) would support using the funds to educate children and adolescents about the dangers of tobacco use. Conservatives (61%) support this idea almost as much as moderates (72%) and liberals (69%).

"Every five-cent increase in the federal tobacco tax would yield about \$3.5 billion in new revenue over seven years and save the lives of about 60,000 children and adults alive today," said Dr. Eyre. "A \$1.00 increase would raise \$84 billion, save 1.15 million lives and reduce the number of smokers by 4.5 million."

For many years, Americans have strongly favored an increase in the excise tax on tobacco. For instance, 66% of American voters favored a \$2 increase according to a Marttila & Kiley poll completed in April 1993.

An overwhelming 69% of Americans polled would use tobacco tax revenue to fund biomedical research, such as research to prevent and cure cancer. Last November, the American Cancer Society released new data showing for the first time in history, overall death rates have begun a sustained decline, and predicts, with a renewed commitment to education and research, this downturn could be accelerated significantly.

"This decline in cancer death rates has come about by our steady, but uncoordinated efforts to apply the knowledge that basic research has brought us in three main areas: cancer prevention, early detection and improved treatments," said Helene Brown, chair of the American Cancer Society's Futuring Initiative and director of Community Research at UCLA's Jonsson Comprehensive Cancer Center.

(more)

The new data, authored by Philip Cole, M.D., professor of Epidemiology at the University of Alabama at Birmingham, shows that from 1990 to 1995, the overall age-adjusted cancer mortality rate declined about 3.1% in the United States. The downturn in cancer death rates was also confirmed by similar trend-tracking by the National Cancer Institute.

"However, we are not accelerating this conquest of cancer to the degree we could," said Ms. Brown. "We can, within the next 20 years, accelerate this trend significantly -- perhaps cutting the rate of lives lost to cancer to half the current rate -- but this will take a higher level of urgency, and coordination of efforts by the government, private sector, volunteer and advocacy health groups to achieve this goal. It is clear from these poll results that the public supports this rededication of our resources and our resolve."

The American Cancer Society has identified eight key steps that are necessary to achieve an accelerated reduction in cancer mortality by the year 2015: 1) improved access to cancer information, screening and treatment; 2) improved health and cost savings offered by managed care's promotion of preventive care, early detection and risk counseling; 3) education through communications programs on cancer prevention, risk reduction and early detection; 4) increased financial support of biomedical research; 5) behavioral research to develop more effective cancer information delivery; 6) consensus on standards of cancer information, screening, treatment and care in all health care settings; 7) collaboration and coordination of effort and resources by government, the private sector and volunteers; 8) tobacco control, especially protection of children through increased regulation of tobacco.

"The public is telling us that health care is a big problem, and there is a way to provide protection for children and others who are in need of coverage, and to accelerate biomedical research efforts by raising the tobacco tax," Dr. Eyre stressed.

(more)

“Twenty-five years ago, the passage of the National Cancer Act mobilized the country’s resources to fight cancer. Since that time, we have found the answers to many questions about this serious public health issue,” said Dr. Eyre. “Our public officials and government agencies play an enormous role in the fight against cancer by supporting research that will help us learn more about how to prevent, detect, and treat this disease; and how to enhance the quality of life of those living with cancer all across this nation.”

The American Cancer Society is the nationwide community-based voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer, through research, education, advocacy and service.

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pollrel.lwp

National Exit Analysis

Nov 20, 1996

Health Care

Now I am going to ask you some health care related questions.

1. Are you very likely, somewhat likely, not very likely, or not at all likely to support political candidates in future elections who accept money from tobacco companies?

1) very likely	13%
2) somewhat likely	16
3) not very likely	24
4) not at all likely	35
5) don't know	13

2. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose an increase in the cigarette excise tax if it were used to expand health care services for children?

1) strongly support	58%
2) somewhat support	15
3) somewhat oppose	7
4) strongly oppose	15
5) don't know	4

3. Are you very concerned, somewhat concerned, not very concerned, or not at all concerned about the rapid changes in the health care system caused by the changes to managed care organizations such as HMOs and PPOs?

1) very concerned	54%
2) somewhat concerned	27
3) not very concerned	6
4) not at all concerned	5
5) don't know	8

4. If you or a family member were diagnosed with a serious illness, such as cancer, would you be very concerned, somewhat concerned, not very concerned, or not at all concerned about the quality of care available through managed care organizations, such as HMOs?

1) very concerned	74%
2) somewhat concerned	14
3) not very concerned	4
4) not at all concerned	3
5) don't know	5

OMNIBUS SURVEY
December 21, 1996

Tobacco and kids

There is strong support for raising the excise tax on tobacco products. I am going to read several ways that the new revenue or moneys from increased tobacco taxes could be spent. Please tell me if you are extremely favorable, somewhat favorable, not very favorable, or not at all favorable toward using the new revenues from increased tobacco taxes for this reason.

1. provide health care coverage for all children who are not receiving health care -- are you extremely favorable, somewhat favorable, not very favorable, or not at all favorable to using new revenues from increased tobacco taxes for this purpose?

extremely favorable	65%
somewhat favorable	22
not very favorable	4
not at all favorable	37
don't know	2

2. biomedical research, such as research to prevent and cure cancer

extremely favorable	69%
somewhat favorable	22
not very favorable	3
not at all favorable	4
don't know	1

3. coverage for preventive health services such as mammograms or nutrition counseling

extremely favorable	56%
somewhat favorable	23
not very favorable	3
not at all favorable	7
don't know	2

4. Federal deficit reduction

extremely favorable	27*
somewhat favorable	<u>22</u>
not very favorable	11
not at all favorable	34
don't know	5

5. vouchers to purchase health insurance for children who are not insured

extremely favorable	59*
somewhat favorable	<u>25</u>
not very favorable	6
not at all favorable	3
don't know	2

6. public education efforts to inform children and adolescents about the dangers of tobacco use

extremely favorable	63*
somewhat favorable	<u>22</u>
not very favorable	3
not at all favorable	7
don't know	1

7. If you had to choose just one way to spend the new moneys from increased tobacco taxes -- which one of these options would you choose?

provide health care coverage for all children	(43*)	— provide health care coverage for all children
biomedical research, such as research to coverage for preventive health	17	- biomedical research
Federal deficit reduction	(4)	4 - coverage for preventive services
vouchers to purchase health insurance for children	2	2 - federal deficit reduction
public education efforts to inform other	(3)	3 - vouchers for health insurance
don't know	(20)	— public education
	2] - unknown / other
	3	

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Medical Sciences

Chronic disability trends in elderly United States populations: 1982-1994

(longitudinal surveys/oldest-old/population aging)

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ABSTRACT Statistically significant declines in chronic disability prevalence rates were observed in the elderly United States population between the 1982 and 1989 National Long Term Care Surveys (NLTCs). The 1994 NLTCs was used to investigate whether disability rate declines continued to 1994. The 1982, 1984, 1989, and 1994 NLTCs employ the same sample design and instrumentation so that trends in disability can be estimated with minimal sampling and measurement bias. Age (5-year categories from 65 to >95)-specific rates were calculated for the 1982 NLTCs and applied to United States Census Bureau estimates of the 1994 population to calculate chronic disability prevalence rates adjusted for aging in the United States population aged >65. The 1982 age standardized rates were compared with 1994 NLTCs estimates. The prevalence of disability estimated for 1994 (21.3%) was 3.6% lower than the 1982 age standardized rate (24.9%)—a highly significant reduction ($t = 8.5$; $P < 0.0001$). Of the 3.6 percentage point decline in prevalence, 1.7% occurred in the 5 years between 1989 and 1994—compared with the 1.9% decline in the 7 years between 1982 and 1989. Both declines are significant. Because of the shorter time period, the per year decline in disability prevalence from 1989 to 1994 was greater than that from 1982 to 1989. Given the higher acute and long-term care service needs of the disabled elderly population, Medicare, Medicaid, and private health expenditures may be dramatically lower than if declines had not occurred.

Changes in the prevalence of chronic disability in the United States elderly population are important for several reasons. First, many models of health changes in developed societies have suggested that industrialized, economically advanced countries would present social and public health problems that increase chronic disease and mortality risks (1, 2). When it was recognized in 1982 that United States chronic disease mortality rates above age 65 had been declining since at least 1968, with the consequence that the United States elderly population was growing faster than projected by the Social Security Administration (3, 4), the question was raised of whether chronic disease and disability rates had changed in a parallel fashion. If they had, one might expect the period of life afflicted with chronic morbidity and disability to remain relatively constant—or decline (5, 6). On the other hand, if chronic morbidity and disability incidence remained unchanged, with life expectancy increases above 65 largely due to improved medical treatments, then the period of life spent disabled might have increased (7). In this latter case, raising the normal retirement age for Social Security might not be a feasible solution to the problem. These questions played a

major role in the debate about the changes in Social Security legislation finally passed in 1983. Because of a lack of clear evidence as to which scenario dominated health changes from 1968 to 1983, and which scenario would be likely to dominate in the future, a mixed strategy of a small increase in the normal retirement age (from 65 to 67 between the years 2003 and 2027) and increased payroll taxes was adopted. These policy options have to be revisited before large numbers of post-World War II baby boom cohorts pass the ages of 65 to 67 between the years 2011 and 2030.

Second, chronic disability, especially for elderly populations, is a sensitive measure of age-related changes in the health and biological fitness of individuals. It is a crucial question about the age rate of physiological changes, of whether recent increases in United States life expectancy at ages >65, and apparent changes in the manifest lifespan [i.e., the highest age to which individuals in a population are observed to live (8, 9)] are associated with not only reductions of chronic disease prevalence, but also increases in the average level of physical functioning at specific late ages. In this sense, disability is a marker of whether life expectancy increases are associated with changes in the age rate of loss of the average biological fitness of a population—a marker that could be interpreted as measuring changes in the biological rate of aging (10). This measure would be useful to help assess whether changes in the biological rate of aging, as inferred from models of the force of mortality [e.g., changes in the shape parameter of the Gompertz hazard function (11, 12); in some cases changes in the shape parameter is conditional on risk factor dynamics (13)], correlate with changes in the biological fitness of the United States elderly population as reflected in age-specific disability rates calculated from longitudinal survey data.

The arguments for using disability measures to make these assessments are substantive and methodological. Substantively, the dimensions of chronic disability are not only a product of chronic morbidity but are, increasingly, at advanced ages, primary risk factors for diseases such as stroke (14), coronary heart disease, peripheral vascular disease, diabetes, and cancer (15-18). Specifically, in middle age, disability is often viewed as a product of the age-related progression of the severity of specific chronic disease processes. At late ages (e.g., starting at 65) chronic disability will increasingly be a result of (i) the interaction of multiple disease processes (rather than the product of a single disease process) and/or (ii) the product of more general losses of physiological functions due to global processes of senescence (19). For example, declines in immune function with age increase the risk of pulmonary viral and bacterial infections leading to pneumonia. Decreased physical activity will lead to deconditioning of cardiopulmonary function, general vascular tone, and the fitness of voluntary muscles that may impair the efficiency of peripheral vascular function (10, 18, 20, 21). Thus, current reductions in the

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prevalence of chronic disability may affect the future prevalence of chronic disease and mortality risk in the United States elderly population.

Changes in chronic disability are very important for the United States health care system, because persons with chronic disabilities tend to have higher per capita Medicare, Medicaid, and other acute and chronic care health costs than nondisabled persons (22-24). Thus, reductions in chronic disability at late ages may have important direct and indirect effects on the future rate of growth of United States health care expenditures.

Methodologically, longitudinal measurements of chronic disability are important because they are easier to assess in nationally representative population surveys than many physiological risk factors or biomarkers of aging, which require blood drawing or other physically invasive (and expensive) tests and procedures (25, 26). The information content of longitudinal population monitoring can be greatly enhanced by linking an individual's survey data to his/her continuous records of Medicare Part A and B service use. They also provide a temporal matrix for integrating data from specialized health studies—an integration that increases the value of that specialized health information by helping to assess, and possibly enhance, its population and temporal representativeness (27-29).

Though chronic disability time series are important to monitor age-specific changes in population health and biological fitness, measurement of chronic disability, especially in elderly populations, is complicated by the different types and degrees of disability manifest (13). There is no universal "gold standard" for measuring disability (30, 31). Measurement is less difficult for severe disability, where physical manifestations are readily observed and evaluated. Despite these methodological issues, measurements of disability are surprisingly robust, with national estimates of the prevalence of chronic, severe disability in the elderly shown to agree across several national surveys, even with differences in questionnaire wording, in a large federal interagency study (32). If assessed with the same instrument over time, and using similarly structured and coordinated samples, the likelihood of bias in estimates of prevalence change would be further reduced.

In this study, the prevalence of chronic disability and institutionalization in the elderly United States population was assessed for 1994 using the 1982 and 1994 National Long Term Care Surveys (NLTCS). Disability prevalence rates for 1982 were standardized to the July 1, 1994 United States population age distribution (33). The 1982 standardized rates were then compared with the 1994 observed rates to ascertain the size and direction of disability changes from 1982 to 1994 in the United States elderly population. This extends prior studies of the NLTCS, which documented significant declines in chronic disability from 1982 to 1989 (34, 35)

DATA

The data analyzed are individual reports of chronic (lasting, or expected to last, >90 days) impairments in activities of daily living (36) (ADL), instrumental activities of daily living (37) (IADL), and institutional residence from the 1982 and 1994 NLTCS. In each survey the same disability and medical condition questions were asked using identical field procedures and by the same survey organization (United States Census Bureau). This minimizes bias in disability trend estimates by holding constant instrument and field procedure, and related measurement artifact. The likelihood of bias is also reduced by the high (95%) response rates in all four NLTCS.

The samples for both NLTCS examined are large (i.e., 20,485 in 1982 and 19,171 in 1994) and designed to represent, with precision the traits of the oldest-old population aged >85, a subgroup with high chronic disability prevalence rates, in each year. New samples of ~5000 persons who attained age 65 between each pair of surveys were drawn from Medicare files in 1984, 1989, and 1994 to represent the United States population

aged >65, in each year. In the 1994 NLTCS, screening is done of persons in the new sample component and of persons who were not disabled in prior samples, to identify chronic disability incident between 1989 and 1994. The samples, being drawn from Medicare enrollment files, are nationally representative of both community and institutional residents. Persons who receive a detailed interview in one survey year are automatically interviewed in all subsequent surveys until death. Because persons are followed through the Medicare record system, nearly 100% of cases can be longitudinally tracked so declines, as well as increases, in disability in previously disabled individuals can be identified, as well as exact dates of death.

In analyses of both the 1982 and 1994 NLTCS, United States Census Bureau cross-sectional sample weights were used. In 1989, the definition of institutional residence was expanded by the Census Bureau so that estimates of change in the institutional population may be conservative.

METHODS

Age (by 5-year categories from 65 to >95)-specific rates were calculated for persons with chronic disabilities, or who were institutionalized, in the 1982 and 1994 NLTCS. Disability was defined as the inability to perform ≥ 1 IADL (e.g., cooking, doing laundry) due to health or aging, or the inability to perform at least one ADL (e.g., bathing, dressing) without using personal assistance or special equipment. Because institutional residents report an average of 4.8 ADLs impaired, they were used to define a separate high disability group. To be identified as chronically disabled when initially selected for a detailed interview a sample person had to have at least one ADL or IADL disability that had lasted, or was expected to last, >90 days. Disability was grouped into five categories, i.e., those with ≥ 1 IADL impaired (but no ADL impaired), those with 1-2, 3-4, or 5-6 ADLs impaired, or persons residing in institutions reporting disability. All other persons were defined as not disabled.

Age-specific disability prevalences from the 1982 NLTCS were applied to Census Bureau age-specific population estimates for July 1, 1994 (33). Standard errors for the proportions were calculated from respondent counts. Changes in proportions were assessed using a test of differences in binomial probabilities.

RESULTS

In Table 1 we present the observed distribution of chronic disability in 1994 and the distribution of chronic disability that would have occurred in 1994 if the 1982 age-specific rates had not changed.

The proportion of the United States population aged >65 that would have been chronically disabled or institutionalized in 1994, had 1982 age-specific disability rates not changed, is 24.9%. The proportion observed to be chronically disabled in 1994 was 21.3%.

The United States chronically disabled elderly population in 1994 is 3.6% smaller (i.e., a decline from 24.9 to 21.3%), than

Table 1. United States disability prevalence estimates for 1994 calculated from 1982 and 1994 NLTCS

Functional status	1994 prevalence from			
	1982 rates, %	1994 rates, %	Difference, %	t- value
IADL impaired	5.6 (± 0.17) [*]	4.3 (± 0.14)	-1.3 (± 0.22) [†]	-5.9
1-2 ADLs	6.6 (± 0.18)	5.9 (± 0.16)	-0.7 (± 0.24)	-3.0
3-4 ADLs	2.9 (± 0.12)	3.2 (± 0.12)	0.3 (± 0.17)	1.6
5-6 ADLs	3.6 (± 0.13)	2.8 (± 0.12)	-0.8 (± 0.18)	-4.3
Institutional resident	6.3 (± 0.18)	5.2 (± 0.16)	-1.1 (± 0.24)	-4.5
Total disabled	24.9 (± 0.31)	21.3 (± 0.29)	-3.6 (± 0.42)	-8.5

^{*}Confidence bounds for proportion based on its SE.

[†]Confidence bounds of differences in proportions based on its SE.

If the 1982 chronic disability prevalence rates had not changed. This is a relative decline from 1982 of 14.5% in the 1994 disability prevalence rates. The decline of 3.6% is highly significant ($t = -8.5$; $P < 0.0001$). The two standard error confidence bounds for the decline are 2.8 and 4.4%. The lower confidence bound (2.8%) is 50% greater than the 1.7% age standardized decline observed from 1982 to 1989. Thus, the decline in the prevalence of disability from 1982 to 1994 is significantly larger than the 1982 to 1989 decline.

In absolute terms, the change in prevalence suggests that there are 1.2 million fewer disabled persons in 1994 (i.e., 8.3 million vs. 7.1 million) than if the 1982 rates had not changed. Declines occurred at all but one level of disability. The disability level specific declines are each highly significant ($P < 0.0001$). The one increase in chronic disability prevalence, for persons with 3-4 ADLs disabled (0.3%), was not significant ($t = 1.6$; $P > 0.10$).

Changes for persons aged 65-74, 75-84, and >85 are presented in Table 2 for the nondisabled, those with only IADLs impaired, and those with at least one ADL impaired, or who are institutional residents.

Differences between the proportions of the elderly population who were not chronically disabled in 1994 and who would be expected not to be disabled in 1994 based on 1982 rates, increased with age, i.e., 2.6, 5.0, and 5.4% for ages 65-74, 75-84, and >85, respectively. The declines in the proportion with ≥ 1 IADL impaired were significant at ages 65-74 and 75-84. The decline (0.7%) at ages >85 was not significant ($t = -1.0$). The decline of the proportion of the population with ≥ 1 ADL impaired, or in institutional residence, was significant at all ages (i.e., 1.5%, 3.3%, and 4.7% for ages 65-74, 75-84 and >85, respectively). Often, long-term care (LTC) insurance policies require a person to have ≥ 3 ADLs impaired (not shown) before qualifying for benefits. The proportion with ≥ 3 ADLs impaired declined significantly from 1982 to 1994, both overall (1.6%) and for specific age groups, i.e., declines of 1.0%, 2.5%, and 2.4% for ages 65-74, 75-74, and >85, respectively.

The 5000 person sample drawn in 1994 to represent persons passing age 65 between 1989 and 1994 is independent of the subsample of persons aged 65 to 69 in the 1982 NLTCs. Disabled survivors to 1994, who were aged >65 in 1982, had to be at least age 77 in 1994. Thus, declines in disability between the group aged 65 to 69 in 1982, and the same age group in 1994, are independent of the effects of previously responding to an interview (a measurement effect likely small due to the 5-year period between surveys). The proportion of nondisabled persons aged 65 to 69 was 88.3% in 1982 and

90.3% in 1994—a significant increase of 2.0% ($t = 3.4$). The group of persons aged 65 to 74 in 1982 is also independent of the group aged 65 to 74 in 1994. The increase in the proportion of nondisabled persons for that age group is larger (2.62%) and highly significant ($t = 5.34$). The decline between 1982 and 1994 (from 4.6 to 3.8%) in persons aged 65 to 69 with ≥ 3 ADLs impaired was significant ($t = -2.0$). Significant declines were observed to the oldest ages examined, e.g., the decline between 1982 and 1994 in the proportion of persons aged >95 who were chronically disabled was 7.77% (SE = 2.42%; $t = -3.2$). Thus, declines in chronic disability were widespread, being found in most age and disability level specific subgroups.

DISCUSSION

The NLTCs data show declines in disability prevalence, observed from 1982 to 1989, in the United States elderly population, continued to 1994. If declines from 1989 to 1994 occurred at the same rate as between 1982 and 1989, the prevalence decline over the 5 years would have been 1.36%—compared with the 1.7% observed. Thus, declines in disability observed from 1982 to 1989 not only continued, but accelerated, from 0.27% per year from 1982 to 1989 to 0.34% per year from 1989 to 1994. Declines were manifest for all ages, even at ages of >95, and for the highest levels of disability. This is consistent with declines in United States mortality observed at ages of >80 (38), and with the proposition that higher United States expenditures on LTC better meet the needs of the very elderly than the lower LTC expenditures, and less complete LTC service availability, in Japan (39, 40).

It is useful to examine what the prevalence rate changes from 1982 to 1994 imply for the number of disabled elderly persons at specific dates. This is shown in Fig. 1.

The 1982 United States population of 26.9 million persons aged 65+ had 6.4 million chronically disabled persons (35). By 1989 the number disabled grew 9.4% to 7.0 million persons—as opposed to the expected increase of 17.2% (14.5% due to the greater number of persons age 65+, and 2.7% due to the aging of the 65+ population). By 1994 the number chronically disabled had grown 10.9% to 7.1 million persons—rather than to 8.3 million persons, the 29.7% increase expected (25.3% due to the growth of the United States elderly population and 4.4% to the aging of that population) if the 1982 rates had not changed. If the 0.34% decline in disability per year (observed from 1989 to 1994) continued to 1996, the decline from 1982 to 1996 would be 4.3%. There would then be 7.3 million disabled persons in 1996 (an increase of 14.1%) compared with 8.7 million persons (an increase of 32.8%; 26.8% due to the growth of the 65+ population and 6.0% due to its aging) if the 1982 rates had not changed—a difference of 1.4 million persons.

Of the 1982 to 1994 decline in prevalence, two-thirds (2.4%) is due to changes in nonstandardized rates (i.e., the observed disability prevalence in 1982 was 23.7% compared with 21.3% in 1994). This 2.4% decline is over twice the decline (1.1%) in the nonstandardized rate changes (i.e., from 23.7 to 22.6%) from 1982 to 1989 (35). One-third of the change is due to the standardization used to adjust for aging of the United States elderly population. The sensitivity of the change estimate to the use of different standard populations was examined. Though the prevalence rates changed moderately when different standard populations (e.g., different intercensal estimates) were used, since the 1982 standardized and 1994 observed rates reflect the same 1994 population distribution, the change estimate is robust to the selection of a standard population.

In addition to a decline in the number of persons with chronic disability there was also a small decline (2.0%) in the average number of ADLs reported by persons who were ADL disabled in both years. This reduction of 395,648 ADL impairments reported by the disabled population suggests that the population burden of disability was further reduced by an equivalent of 111,765 disabled persons—each with an average of 3.54 ADLs

Table 2. Age-specific estimates of chronic disability prevalence in 1994 based on rates estimated from the 1982 and 1994 NLTCs

Disability and age status	1994 prevalence based on			t-value
	1982 rates, %	1994 rates, %	Difference, %	
Nondisabled				
65-74	85.9 (±0.33)*	88.5 (±0.37)	2.6 (±0.50)†	5.3
75-84	68.1 (±0.56)	73.1 (±0.47)	5.0 (±0.74)	6.8
>85	34.8 (±0.94)	40.2 (±0.88)	5.4 (±1.29)	4.2
Only IADLs impaired				
65-74	4.3 (±0.19)	3.1 (±0.20)	-1.2 (±0.28)	-4.2
75-84	7.2 (±0.31)	5.5 (±0.24)	-1.7 (±0.40)	-4.3
>85	7.9 (±0.53)	7.2 (±0.46)	-0.7 (±0.70)	-1.0
ADL impaired or institutional				
65-74	9.8 (±0.28)	8.4 (±0.32)	-1.5 (±0.43)	-3.4
75-84	24.7 (±0.52)	21.4 (±0.44)	-3.5 (±0.68)	-4.8
>85	57.3 (±0.98)	52.7 (±0.89)	-4.7 (±1.32)	-3.5

*Confidence bounds for proportion based on its SE. †Confidence bounds of the difference in proportions based on its SE.

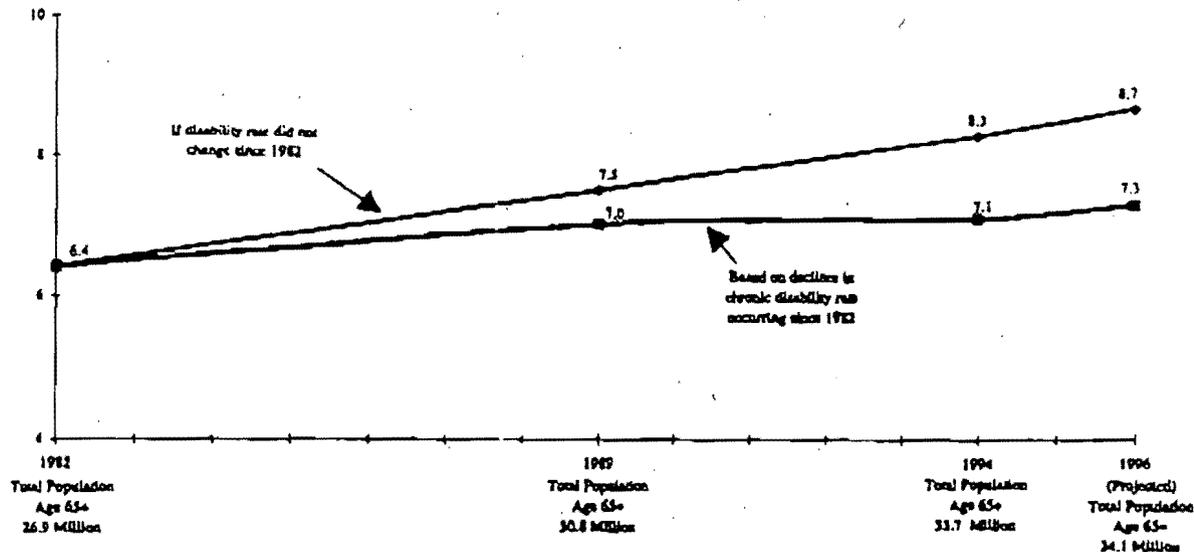


FIG. 1. Number of chronically disabled Americans aged 65 and over (in millions).

Two related issues of importance are (i) that the association of disability declines with changes in other measures of health and biological fitness at late ages and (ii) the identification of possible causes of the disability decline.

The declines in chronic disability are related to changes in other covariates in the NLTCS thought to be related to the likelihood of being chronically disabled at a given age. Education has been negatively related to the age-specific likelihood of being chronically disabled (24). The proportion of the population aged 85 to 89, with 0–7 years of education, has been estimated to decline dramatically, from >60% in 1980 to 10–15% by the year 2015 (41). It may be that this relation was due to only a select portion of the population receiving high levels of education in the past. As high levels of education become more prevalent, unless there is a causal relation, the ability of education to predict disability might be attenuated. Though such selection is a possible explanation, it would have to operate even though most schooling is done early in life (i.e., by age 30), whereas we are examining disability changes at ages >65. Because education is largely completed by age 30 this raises the question of what intermediate health care and biological mechanisms may be reducing the probability of disability for better educated persons. There are many candidate factors, i.e., better educated persons tend to more readily adopt healthy behaviors (e.g., maintaining physical activity at late ages, reducing risk factor exposures such as smoking, improving nutrition). Better educated persons are also more likely to have had better medical care both early in life and in middle age, up to age 65, when qualifying for Medicare—in part because of higher rates of health insurance coverage up to age 65 for better educated persons (42). Better educated persons are also better equipped to comply with complex and long-term medical treatments—especially for chronic conditions engendering comorbidities such as hypertension or diabetes. They are also more likely to exhibit fewer disabilities even with a chronic condition present (43, 44). Finally, there is evidence suggesting education is negatively associated with the incidence of Alzheimer's disease—a prevalent and highly disabling condition (45).

An analysis of changes in disability levels by cohort (cohort effects were correlated with education) suggests that the age rate of disability increase (and, inferentially, of the biological rate of aging) is slower in younger, than older, cohorts. Since factors related to cohort membership are, by definition, persistent, this suggests that period differences in chronic disability are likely to continue past 1994, because those cohorts succeed one another at late ages where the general level of disability is high (70, 71).

Analysis of changes in 16 chronic diseases show that there were large declines in the prevalence of those conditions from 1982 to 1989 (35). To the extent that the progression of chronic disease increases chronic disability after a lag (say of 3–5 years for ages 75–79 (46, 47)), this is consistent with the continuation of the disability declines observed from 1989 to 1994. The decline in chronic diseases observed from 1982 to 1989 is, itself, consistent with trends in risk factors that showed, in the four National Health and Nutrition Examination Surveys done from 1960 to 1990, declines in hypertension, cholesterol levels, and smoking for persons aged 65 to 74 (48, 49). This is in contrast to Germany where a 19% decrease in cardiovascular disease mortality from 1984 to 1989 was argued by German researchers to be most likely due to improved medical therapy, because cardiovascular disease risk factors (50) and smoking (51) showed little or no improvement in studies done from 1970 to 1991.

Chronic disease and disability prevalence may have been declining in the United States for a much longer period of time than from 1982 to 1994. Fogel (52) found that heart disease prevalence, a disabling chronic disease, declined 6% per decade for 75 years from Civil War veterans evaluated at age >65 in 1910 to World War II veterans aged >65 in 1985 to 1988. Lanska and Mi (53) found stroke mortality (stroke being a disease engendering significant chronic disability) had declined since 1925.

Multiple changes in the questionnaires and samples used in the National Health Interview Surveys over time make long-term disability trends difficult to estimate (54) and comparisons with other surveys problematic (54–56). Waidmann *et al.* (54) attempted to resolve those difficulties by using a variety of survey and epidemiological data sets and making adjustments for known methodological problems. They found that not only did United States disability decline in the 1980s, but that apparent increases in disability in the 1970s were likely due to measurement difficulties with National Center for Health Statistics surveys done in that period (54–57). Administrative data also suggest that declines in institutional residence observed in the NLTCS are consistent with declines in Medicaid reimbursed nursing home use by the elderly (49), the tendency toward shorter nursing home stays with more medically intensive care, and the increased use in the United States of home health services for LTC (58).

Very long-term changes in chronic disease prevalence are less likely due to medical innovation than to changes in nutrition and public hygiene. A number of long-term trends in these factors possibly contributed to declines in chronic disease and disability. One factor is improvement in public hygiene and sanitation. A

recently discovered pathogen, *Helicobacter pylori*, may explain long-term declines in gastric cancer (since the 1930s) and changes in peptic ulcer prevalence (59). Improvements in water quality may have reduced exposure to this pathogen. A second factor possibly contributing to long-term declines in stroke and gastric cancer is the reduced use of salt as a food preservative as refrigeration became more widely used (60). Indeed, salt consumption and *H. pylori* infection may interact to increase disease risk, as may salt and increased nitrate consumption. A third factor is better regulation of commercial food processing and livestock management. Commercial food processing, especially thermal processing of meats, may have reduced the prevalence of food-borne pathogens possibly contributing to atherosclerosis (61). Food processing expanded rapidly after 1950. Regulation of livestock feeding and handling may also have reduced food-borne viral pathogens. Fourth, food supplementation was initiated after the discovery in 1917 of the relation of cod liver oil consumption to rickets. Vitamin D supplementation, either by fish oil consumption or the UV radiation of milk, was widely spread by 1924 in the United States. British studies suggest that nutritional deficiencies in pregnancy may affect fetal development in ways to increase the risk of chronic disease in late adult life. Finally, a number of lifestyle factors could have contributed to changes. United States surgeon general reports in the early 1960s may have reduced smoking rates in successive birth cohorts (62).

The impact of medical therapy on disability prevalence is hard to assess because many treatment innovations for chronic diseases are recent [e.g., ACE-II inhibitors to control hypertension (63, 64)]. There are also relatively old medical interventions whose full range of effects on chronic disease and disability are just beginning to be understood. Exogenous estrogens were used in 1985 by 3 million United States women to treat postmenopausal symptoms. By 1995, nearly 10 million United States women were taking estrogens, which may have benefit for such highly prevalent, disabling conditions as osteoporosis and cardiovascular disease (65–67). A recent study suggested that exogenous estrogens might delay the onset of Alzheimer's disease by 5–8 years—and possibly reduce the prevalence of that highly disabling condition in females by 50%. Aspirin may reduce the risk of colorectal cancer and recurrences of stroke and heart disease. Recent data suggest that nonsteroidal antiinflammatory drugs may also reduce the risk of Alzheimer's disease—possibly by 25–40%. The effects of aspirin and other nonsteroidal antiinflammatory drugs, because of their widespread use, could affect the health of a large proportion of the United States elderly population. These older interventions may combine with numerous more recent medical advances to cause both chronic disease and disability to continue to decline for a long time—with the implication of exogenously altering basic biological parameters reflecting age changes.

Disability declines of the size in Fig. 1 may have important implications for national health care costs. For example, the 1994 United States institutional population was estimated to be 1.7 million persons. The 1982 rates, after age standardization, implied 2.1 million persons would be institutionalized in 1994. The difference of 400,000 implies, assuming an annual per capita nursing home cost in 1994 of \$43,300 (49), savings of \$17.3 billion in nursing home expenses in 1994. That does not include additional potential savings for acute care expenditures (22). Specifically, if age increase in the prevalence of chronic disability is a marker of the rate of loss of biological function, then decreases in the number of chronically disabled persons implies that persons in "pre-disabled" states are also losing biological function at a slower rate. Thus, declines in the number of disabled persons at late ages may imply better function and lower health care needs in a large proportion of the younger portion of the United States elderly population. If many acute care medical expenditures are due to chronic disability (22), then the decline in the prevalence of disability rates from 1989 to 1994, which caused the disabled elderly

population to grow more slowly than the total elderly population, could portend slower rates of growth in national health expenditures in the future. A number of factors could affect this. The interpretation above assumed that the length of time a person remains disabled is relatively constant. In contrast, prevalence could decline if the same number of persons were disabled for shorter periods of time. This might seem reasonable in the context of declining life expectancy, i.e., that persons live a shorter period of time after a potentially disabling chronic disease became manifest. However, United States life expectancy has increased at later ages. If the prevalence decline were due to shorter disability episodes among the same number of persons this would require, in the context of increasing late age life expectancy, the proportion of the lifespan spent in nondisabled states to increase. That is, constraining the standard epidemiologic relation of prevalence to the incidence and duration of a chronic health event is an increasing late age life expectancy.

A change in the relation of disability duration and incidence could also have important effects on costs by changing the mix of medical services required. For example, institutional and informal care use would increase if the duration of disability increased. If duration of disability decreased, as health events increased in incidence, this might shift costs to hospital use and other types of acute health services.

Understanding the effects of chronic disability changes on the level and mix of health service expenditures is important in that currently there is great concern for the fiscal stability of Medicare. Beginning in 2001, the Medicare Trust Fund is projected to go into negative balance (69). Concerns about Medicare expenditures will increase until at least 2028 when the largest post-World War II baby boom cohorts pass age 65.

Unless gross domestic product grows faster than projected, the projected increases in the size of the elderly population relative to the labor force (and taxable payroll base) could require large changes in the Medicare program to maintain fiscal balance. However, projections of Medicare expenditures are based on the projected growth of the United States elderly population—with no assumptions made about how health changes before death in the calculations—even though life expectancy is projected to continue to increase at late ages. Thus, if declines in chronic disability continue, the magnitude of changes required in the Medicare (and Medicaid) benefits might be reduced because of two factors. One is the change in the ratio of the size of the United States population aged say, 18–64, to the population aged >65, who are chronically disabled. This differs from the standard dependency ratio of the 18–64 to >65 populations in that it would reflect changes in the aggregate health of the over 65 population—changes that could have large effects on Medicare and other health expenditures. For example, Medicare Part A and B expenditures are higher for chronically disabled persons. This is due to a variety of factors, e.g., persons with severe chronic disability are likely affected by medical conditions requiring considerable acute care. To maintain the health of a chronically disabled person, one thus has to provide large amounts of medical service to deal with morbidity engendered by the physiological effects of disability.

To keep a constant ratio between the United States population aged 18–64 as projected for 2028, to the number of disabled persons over 65, the disability prevalence rate above age 65 would have to be reduced 1.5% each year for 34 years, i.e., an overall reduction of $1 - (0.985^{34}) = 0.402$, or 40.2% in 34 years. The rate of decline from 1982 to 1994 has been 1.2% per year, so a 1.5% rate of decline in the disability prevalence rate is conceivable. However, it is important to recognize that after the peak in 2028, the size of the age >65 population relative to the population aged 18–64 declines. Hence, to maintain a constant ratio in 2050, the per annum rate of decline in the prevalence of disability above age 65 required is lower—roughly 1.2%, the same rate of decline observed from

1982 to 1994. Even if such rates of decline are not maintained over these longer periods, any sizeable decline will reduce the magnitude of Medicare and Medicaid program changes needed and possibly smooth out the demands induced at the times of the peak Medicare burden.

A second factor determining how rapidly Medicare's burden will grow is that the per capita annual rate of Medicare's expenditures declines with increasing age at death (68). This is because a large proportion of Medicare costs, at any age, are made in the 2 years immediately before death. The per capita expenditures for deaths at age 70 are \$22,590, whereas for deaths at age >101 they decline to \$8,300 (1990 dollars; 1989-1991 deaths). This age trajectory of expenditures, combined with the apparent slowing of biological age changes over time, may have important consequences for the future burden of the Medicare Trust Fund obligations (3, 22, 55, 69).

In summary, declines in the prevalence of chronic disability, observed up to age 95, suggest that there have been statistically significant and biologically important changes in the age rate of loss of biological fitness in the United States population associated with increases in life expectancy above age 65. It will be important to monitor these changes in chronic disability to determine how the age rates of loss of biological fitness will behave in the future. These changes may have important implications in forecasting the future trajectory of changes in health expenditures in the United States elderly population.

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CONTAINING MEDICARE AND MEDICAID COSTS AND IMPROVING OUTCOMES THROUGH ENHANCED TECHNOLOGY TRANSFER

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Research currently underway at the NIH and in university laboratories holds great potential for generating long-term savings to Medicaid and Medicare. But more immediate savings — achievable within 1-3 years — could be realized through consistently appropriate utilization of currently-available therapies. To achieve this, we must be able to disseminate current, cost-effective treatment information to practicing physicians as efficiently as possible. Today, this technology transfer is spotty at best, with much current practice driven by less-than-current data, habit, anecdotal experience, and the promotional efforts of vendors. A high proportion of physicians do not have easy access to the information that could guide them to the most efficient and up-to-date diagnostic or therapeutic interventions in a wide variety of clinical areas. Solid evidence indicates that in many areas of medical care, current practice has not kept up with recent findings for a very wide array of medical problems:

- underuse of anticoagulation in patients with a common form of heart rhythm abnormality (atrial fibrillation), resulting in many preventable and disabling strokes;
- overuse of costly magnetic resonance imaging (MRI) tests for a variety of muscle and joint problems for which their use adds little but expense;
- inadequate control of high blood pressure, despite the availability of a large number of safe and effective medications, resulting in widespread exacerbation of cardiac disease and renal failure, as well as stroke;
- underuse of several common medications (aspirin, cholesterol-lowering agents, beta-blockers, ACE inhibitors) to prevent heart disease, resulting each year in a massive burden of preventable heart attacks, disability, and avoidable deaths;
- continued reliance on outmoded or high-dose tranquilizer medications in the elderly, resulting in preventable falls and hip fractures.

In addition to the enormous clinical and human toll taken by preventable illness and disability, these problems (and many more like them) also impose a large economic burden on the health care system. If a way could be found to help physicians make better clinical

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decisions in each of the areas noted above (and many more), the clinical and economic toll of such preventable illness could be reduced dramatically. Even conservative estimates place the achievable savings to Medicare and Medicaid in the tens of billions of dollars annually.

Part of the problem has been that there is no organization in either the public or private sector responsible for providing disinterested, evidence-based information to clinicians proactively, on an ongoing basis, once a doctor's training is completed. Few meaningful competency requirements exist either for medical license renewal or for reimbursement by insurers. Enabling practitioners to get access to the most current information on cost-effective strategies for diagnosis and treatment would be one of the most painless routes to controlling health care expenditures.

One type of information-sharing system already documented to be effective is "academic detailing," in which outreach educators meet with physicians and offer information on managing a variety of clinical problems (much as drug company representatives do to increase sales of their products). Formal cost-benefit analysis of such programs has demonstrated savings which exceed their costs substantially.

Such programs could deliver targeted information on cost-effective care which would be updated on a regular basis, made available through educational outreach, on diskette, or through an online service, as well as in hard copy. Content would focus on recent clinically relevant findings, improving patient outcomes, and cost-effective care. These materials would be generated and updated by groups of practitioners and researchers independent of commercial interests and working outside the sphere of any governmental agency, to avoid the appearance of creating a massive "Federal Cookbook of Medicine."

Initial work by our group at Harvard Medical School in creating the concept of "academic detailing" was inspired in part by the agricultural extension service programs begun decades ago by the federal government. Earlier this century, it was seen to be in the national interest for the Department of Agriculture to send out field workers to meet with farmers to present them with the latest information on developments in agricultural science, in order to enhance their productivity. In that program, a benign and very effective use of minuscule amounts of public resources was successful in upgrading the productivity of an important sector of the economy. There is an urgent need for a similar program today for health care professionals.

The appropriate (and modest) federal role in launching such a program would be two-fold. First, the government could inject small amounts of seed money necessary to begin development of such decision-support educational outreach programs. (Within a year or two, the marketplace is likely to help ensure that the best of such programs prevail and become self-supporting.) Federal support in the initial stages would guarantee that this approach, and its resulting savings, would become a reality much sooner than would otherwise be possible.

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A second role for the federal government could be to provide incentives for physicians to utilize such educational resources. These might include revenue-neutral differential payment rates for participants, or encouraging malpractice insurers to offer such doctors lower premium rates.

Although small-scale projects of this type have been initiated in several hospitals and universities, development of a broad-based effort such as this has been hampered by two factors. Until now, physicians have had little incentive to practice medicine on the basis of cost-effectiveness or outcomes measurement. The proliferation of managed care has provided the incentive for such concern, but often without the informational wherewithal to guide such cost-containment -- often with unfortunate results. Secondly, the further evolution of user-friendly technology as well as a variety of software and on-line tools have never been as widespread, adaptable, or inexpensive as at present.

It is not enough in 1997 to tell physicians we must change our practice patterns to reduce health care expenditures. To do this well, we must have access to the best available clinical information on effectiveness as well as cost. In the absence of such knowledge, forcing doctors to utilize fewer health care resources is likely to result in rationing, shortcuts, and worse outcomes...much of which would prove more costly. Cost consciousness is not adequately addressed in medical schools, and is too rarely discussed in the research literature. While the practitioner is urged to "spend less" on patient care, too often he or she is not provided with practical, patient-oriented guidance on precisely how this is to be done in specific clinical situations. We are proposing a program that can make cutting edge information on diagnostic and therapeutic advances, as well as cost-effective decisionmaking, available to physicians, throughout their careers and regardless of geographic location. This is likely to result in less rationing of needed care, less "trial and error" medicine, less duplication of effort, and fewer adverse effects, hospitalizations, and preventable disability. Not only is the potential for savings apparent, but the positive impact on quality of care would be considerable.

If implemented on a large enough scale through evaluable demonstration projects, pilot programs of this kind could be put in place within one year of the availability of a very modest level of support, based on the experience of our group at Harvard and others throughout the country. Within an additional two years, these demonstration projects could prove their worth by documenting (in comparison with comparable non-program settings) an improvement in the quality and cost-effectiveness of clinical practice for targeted conditions. This in turn would lead to better patient outcomes and reduce expenditures for conditions for which basic science and clinical research have already found effective means of prevention or treatment, if only patterns of care could be brought up to such best practices standards. Over time, after such publicly supported demonstration programs had "primed the pump," the health care system itself would, once the way has been shown, be far more likely to adopt this approach as a routine part of medical care in the U.S.

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Well-funded biomedical research is an essential element of sound national health care policy. Past federal and private investments in basic biomedical research have yielded a deep understanding of the molecular structure and function of biological systems, including human beings. The human genome has been mapped. The biotechnology industry has been established. Cellular biology and genetic science have made possible previously undreamed of diagnostic techniques and therapies. Every day genetically based physical diseases are better understood, and specific therapies or cures are subsequently developed. We now look forward to an era in which similar advances can be made against genetically based mental illness — if we have the will to support the underlying science.

We must come to understand the importance of increasing our national investment in biomedical science. We must also understand that advances in biomedical science depend, in turn, on advances in other fields of scientific and engineering research. The mapping and sequencing of the human genome has been made feasible by advanced combinatorial mathematics, computer science, and robotics. Advances in chemical engineering are required to scale up biotechnical processes to produce usable quantities of new medicines and to reduce their cost. Computer science and engineering must be advanced in order to model and visualize complex molecular processes and to analyze the huge amounts of data required in genetic studies. Condensed matter physics makes possible the microscopic probes and sensors needed by doctors and biomedical scientists. Materials research is needed to develop mechanisms for precision delivery of molecular drugs. The ability to grow new human skin and, someday, replacement organs can be possible only if several areas of science and technology advance together.

Modern medicine is born of scientific research and delivered by advanced technology. Its human benefits can be realized only through the wise and caring public policy of a nation willing to invest in the future.

Charles M. Vest
March 12, 1997

COLUMBIA UNIVERSITY
HEALTH SCIENCES CENTER
VICE PRESIDENT FOR HEALTH SCIENCES
AND DEAN OF THE FACULTY OF MEDICINE

March 11, 1997

The National Long-Term National Health Care Survey of health trends among older Americans by Dr. Kenneth Manton quantifies for the first time the benefits of the evolution of medical research, the focus on preventive health care, and their impact on public health and on Medicare expenditures.

The study suggests that advances in medical science correlate directly with improved quality of life for senior citizens and with lowering their health care costs. As a result, medical research is the best long-term investment this nation can make for resolving future problems in the Medicare Trust Fund.

There are countless examples of areas in which research advances have led to treatments that forestall costly dysfunction and disability. Many types of congenial heart disease that once crippled or killed are now successfully treatable, allowing people to lead independent, productive lives. More people now understand the role of smoking, diet and exercise. We can effectively correct vision defects, replace hip joints, transplant organs, control infection and treat psychiatric illness. Collectively, these kinds of advances have changed the prospects for the average individual in terms of longer life expectancy, decreased disability and delayed dysfunction. And they have more than paid for their own cost of development by saving public and private insurers billions of dollars every year. They are advances that not only improve the quality of life, but dramatically lower health costs.

The health care industry recognizes that a powerful R&D effort is critical for delivering more of these advances that benefit seniors. The Manton study shows us that successfully treating aging-related diseases has reaped enormous benefits. Projections by our scientists promise *ever-increasing* control of human disease, which can now be studied at the molecular level, thanks to the remarkable technological innovations of that last decade.

The conclusion is self-evident: It is good sense and good economics to support medical research in the most vigorous way possible. We must insure that medical scientists and the medical schools, and the teaching hospitals, in which they function, are well-supported in order to maintain American medicine and American medical research at the forefront among the industrial nations. The quality of our lives, particularly as we age, and the economic future of our nation depend on this support.



Herbert Pardes, M.D.

THE HOWELL GROUP

JAMES M. HOWELL
PRESIDENT

March 17, 1997

The recent findings of a long-term health care survey by Dr. Kenneth Manton of Duke University clearly suggest that, by reducing chronic disease and disability among seniors, medical research is contributing to substantial savings in Medicare. The benefits of research advances, however, go far beyond improving health and saving health care dollars.

Historically, thirty percent of overall economic growth in this country has been attributed to advances in knowledge – a process that was accelerated by the passage of the Bayh-Dole Act in 1980. And nowhere is the relationship between knowledge advances and economic growth more visible than in the area of scientific and medical research.

In addition to reducing the costs associated with the treatment of disease, continued investment in medical research provides important long-term benefits to the overall economy. These benefits proceed from the systematic transfer of technology out of the university research laboratories and into the commercial sector, thus leading to the creation of new firms and new jobs.

Recent studies by the Association of University Technology Managers (AUTM) and the Massachusetts Institute of Technology indicate the magnitude of the positive benefits of technology transfer. The 1995 AUTM survey data show that licensing of university inventions adds more than \$21 billion to the economy and supports 180,000 jobs each year. In 1995 alone, academic licensing led to the creation of 223 companies; during the 5-year timeframe of the study, the total number of licenses and options increased by 66% for the US institutions participating in the study.

The MIT study offers similar evidence, emphasizing the role of *new* firms in the job creation process. Although only 35% of the licenses in the MIT study were granted to start-up companies, those firms accounted for 77% of the investment and 70% of the jobs.

We cannot dispute the importance of budgetary reform and fiscal responsibility at the federal level, but we must not lose sight of the fact that investment in medical and scientific research not only contributes to moderating health care costs, but also leads to new jobs and greater wealth in the broader economy.


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Measuring and Improving the Quality of Health Care

Statement Submitted to the Senate Labor Committee

Mark R. Chassin, M.D., M.P.P., M.P.H.

Professor and Chairman
Department of Health Policy
Mount Sinai School of Medicine

March 6, 1997

consensus processes for experts to agree on guidelines for how particular kinds of care should be provided and under what circumstances, quantitative approaches to measuring functional outcomes, and methods of risk-adjustment that allow outcomes for populations with different characteristics to be compared.

Research Assessing the Magnitude of Quality Problems

A large number of studies have employed these valid quality measures to assess the seriousness of various quality problems. These problems come in three varieties: overuse, underuse, and misuse. Overuse occurs when a health service is provided in circumstances when its risks outweigh its benefits and, therefore, harm is more likely to result than benefit. Underuse is the failure to provide a health service that would have produced benefit. Misuse occurs when a beneficial health service is provided poorly, the patient experiences a preventable complication and therefore fails to receive the full potential benefit of the service. The message from this research is clear and compelling. We have serious quality problems in all three of these areas.

Proponents of managed care argue that it reduces cost by eliminating unnecessary services, in other words by reducing overuse. This claim is so often repeated that it is perhaps surprising to realize that it has never been substantiated by rigorous research. No studies have directly measured overuse in managed care and fee for service settings and compared the results. Nor do we understand how much of any cost reduction managed care achieves is due to reductions in overuse. We do know, however, that overuse is rampant in American medicine. A large volume of studies has documented substantial amounts of overuse across a wide variety of health services, from the simplest diagnostic and therapeutic interventions (e.g., ankle x-rays and antibiotic prescriptions) to the most complex (coronary angiography and carotid endarterectomy).²

Estimates of overuse from these studies vary over a wide range, from about 10% to over 40%, but most cluster between 15% and 25%. I believe a conservative reading of this literature suggests that about 20% of what we do in health care constitutes overuse. It could safely be eliminated and quality would improve, because patients would be spared the unnecessary exposure to the risks of these inappropriate services.

If overuse is common in American medicine, underuse is ubiquitous. Whether the subject is childhood immunizations, inhaled steroids for patients with asthma, the detection and treatment of high blood pressure, radiation therapy following breast-conserving surgery for early-stage breast cancer, or a variety of treatments for heart attacks, the research is consistent. Large numbers of patients, often as many as 50%, fail to receive interventions that have been conclusively proven to improve

outcomes. One recent study found that 79% of elderly heart attack patients failed to receive indicated treatment with beta blockers and experienced a 75% higher death rate than those who were so treated.³ The likely reasons for these failures are many, including lack of health insurance and other barriers to access.

We also know that substantial underuse exists in both fee for service and managed care practice settings. Comparative studies have found high levels of failure (ranging from 40% to 60%) to diagnose and treat depression, to control hypertension, to obtain recommended mammograms, and to provide appropriate eye care to patients with diabetes in both kinds of financial arrangements.⁴

Misuse problems are also highly prevalent. Injuries from preventable adverse reactions to medications and avoidable complications of medical and surgical procedures are the major classes of misuse problems. Recent work from Boston suggests that patient injuries due to medication use occur at a rate of about 2000 per year even at the best large teaching hospitals, nearly one-third of which are preventable.⁵ We also know that large numbers of complex and risky surgical procedures continue to be performed at hospitals and by surgeons with very low annual volumes, a condition which has repeatedly been demonstrated to result in worse outcomes, with death rates often more than twice as high, compared with higher volume providers. We do not know whether misuse is more or less prevalent in managed care compared with fee for service arrangements.

Regulating Managed Care

In the past 2 or 3 years much governmental action at both the state and federal levels has been directed at regulating managed care, attempting to avoid problems such as hospital stays that are too brief following delivery or mastectomy, restrictions on what physicians may tell their patients about treatment alternatives, and financial incentives that too richly reward physicians for providing fewer health services to patients. These efforts at regulation may be important, indeed vital for the purpose of establishing clear due process procedures for enrollees of managed care plans, demarcating precise rules for what services must be covered in various kinds of insurance arrangements, and creating systems for holding managed care companies accountable for their actions. They will not, however, have a material impact on fixing any important health care quality problems of the kind described above.

At best, they may have an indirect generic improvement effect, caused by the overall perception that health care is being scrutinized more carefully. At worst, they will be entirely irrelevant to quality improvement. Referring back to the definition of quality and criteria for valid measures of quality discussed earlier, there is no evidence that suggests that the kinds of changes embodied in these laws

**HOW AMERICANS
PERCEIVE THE HEALTH CARE SYSTEM**

A Report on a National Survey

Conducted for
The National Coalition on Health Care

by
International Communications Research

January 1997

REPORT ABSTRACT

A nationally projectable telephone survey on attitudes towards and perceptions of health care was conducted in December of 1996. The sample comprised adults 18 years of age and older who were selected using a random-digit-dialing (RDD) methodology. The interviews and tabulations of results were conducted by International Communications Research, Media, Pennsylvania.

The sample was weighted to represent the demographic characteristics of the total adult population (18 years and over) of the United States.

The purpose of the survey was to determine perceptions of health care in four specific categories: 1) quality, 2) cost, 3) coverage, and 4) the role of government.

The findings show a lack of trust between Americans and the health care system. The survey responses reveal:

- A lack of confidence in the quality of health care,
- Belief that the system is putting profits ahead of people and quality,
- Fear that quality medical care is becoming unaffordable to the average American, and
- Desire for better information in order to evaluate quality and decisions about treatment.

EXECUTIVE SUMMARY

A nationally projectable poll of 1,011 American households conducted December 18-22, 1996, reveals a disturbing lack of confidence among the majority of Americans with the state and direction of health care and concern about health care quality, cost and coverage.

The telephone poll, conducted by International Communications Research, was commissioned by The National Coalition on Health Care. The survey findings from a representative cross section of American households have a range of variation of no greater than plus or minus three percentage points.

Their responses to a series of statements show that most people have little confidence in the ability of the system to care for people. The vast majority of Americans (79%) agree with the statement "there is something seriously wrong with our health care system," 87% agree that "the quality of medical care for the average person needs to be improved," and only 15% have "complete confidence" in hospital care. Less than half of people (44%) say they have "confidence in the health care system to take care of me."

Eight in ten Americans believe that the quality of medical care is being compromised in the interest of profit. They feel that "quality medical care has become unaffordable for the average American" (79% agree), that "hospitals have cut corners to save money" (74% agree), that "quality care is often compromised by health insurance companies to save money" (80% agree), and that "quality of medical care has gone down while costs have increased" (64% agree). These views are held by people in fee-for-service plans as well as those in managed care plans.

There is a hunger to be better informed: 83% say they "would like to be better informed about how to evaluate quality of medical care from doctors and hospitals," and 72% "would like more information so [they] would feel more confident about decisions about medical care."

People are frightened by stories they've heard of medical care "mistakes made that have hurt or even killed people" (75%).

More than half the respondents (57%) agree that "hospital care is not very good" and they risk being "made sicker or more injured by mistakes made by poorly trained or overworked staff."

While the majority feel confident that they could get quality medical care for themselves, they also believe there are serious problems with the quality of health care.

How Americans Perceive the Health Care System

Contrary to the widely publicized view that government should stay out of health care, the vast majority of Americans feel that the federal government can play an important role in making health care better (69%) and more affordable (72%). These beliefs were shared by Republicans, Democrats, and Independents.

The poll reveals a divided population regarding peace of mind and satisfaction of health care. About two-fifths of Americans are strongly alienated from the health care system. Many of those with annual household incomes of \$25,000 or less are highly troubled by their experiences with cost, coverage and treatment.

Even though they consider their current health care satisfactory, a large proportion of middle class respondents are also strongly troubled by what they see as serious flaws in the system related to quality, costs and access.

Four of every ten people polled have had reductions in coverage and are *"worried that they may lose their health insurance"* and feel they *"cannot afford medical insurance."*

On a positive note, four in every ten people *"strongly agree"* that their *"medical plan makes good health care affordable"* and over one-third (36%) *"strongly agree"* that they are *"satisfied with the quality of [their] health care."* Over one-quarter (28%) *"strongly agree"* that they *"like the way their medical plan works"* and that *"[their] medical plan provides the best quality care they could want."*

In general, people over sixty-five years of age, and therefore covered by Medicare, are more satisfied with quality and coverage than are those in their thirties and forties. Not surprisingly, higher income families (\$50,000 annual income) express more confidence and satisfaction with their health care than do those from households with middle or lower incomes.

Four in ten Americans report having had a "bad" experience with treatment or care, don't have confidence in the system to take good care of them, or believe hospitals have cut corners to save money, thus endangering patients.

Focus group interviews recently completed in five cities prior to the survey amplify the findings of the polls. They reveal a depth of anger, fear and betrayal combined with a sense of frustration and pessimism for the future of health care. The prevailing view expressed in these interviews was that improvements in the health care system were being held hostage by partisan politics. Respondents in the focus groups displayed great cynicism about the motives and goals of the health care system.

How Americans Perceive the Health Care System

The respondents showed impatience with the lack of progress in controlling costs, improving quality and access. Many of those who felt they were adequately protected by their insurance expressed concern and dismay at the plight of many people who they felt were unprotected and poorly cared for. Many had friends, neighbors and close relatives who lost their health insurance and were struggling to pay for or receive good health care. Their anxieties were underscored by the belief that even though they were currently protected, they could soon join the ranks without access to quality medical care.