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HEALTH CARE FOR THE ELDERLY: HOW MUCH? WHO WILL PAY FOR IT?

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ABSTRACT

The tendency of health care expenditures on the elderly to grow about 4 percent per annum more rapidly than the Gross Domestic Product could plunge the nation into a severe economic and social crisis within two decades. This paper describes recent growth in age-sex-specific health care utilization by the elderly and discusses the important role of technology in that growth. It also explores the potential for the elderly to pay for additional care through increases in work and savings. Efforts to "save Medicare" will prove to be "too little too late" unless they are embedded in broader policy initiatives that slow the rate of growth of health care expenditures and/or increase the income of the elderly.

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by Victor R. Fuchs

Health Care Expenditures

In recent decades health care expenditures on the elderly have outpaced the Gross Domestic Product (GDP) by from 3.5 to 4.0 percent per annum.[1] This differential is partly attributable to demographic change, with the number of elderly growing about 1.0 percent per annum faster than the rest of the population. By far the more important factor, however, is the rapid growth of age-sex-specific consumption of health care by the elderly.[2] If the trends of the last one or two decades continue until 2020, health care consumption of the elderly in that year will be approximately $25,000 per person (in 1995 dollars) compared with $9,200 in 1995.[3] If the current public-private shares remain unchanged (a bit less than two-thirds paid for by government and a bit more than one-third paid for privately) an enormous increase in taxes will be necessary *and* the elderly will be left with less income for other goods and services than they had in 1995. Without a dramatic change in health care costs, income, or both, health care expenditures on the elderly in 2020 are likely to be two to three times the income available for all other goods and services.[4]

Age-sex-specific expenditures

A more detailed picture of the rate of growth of age-sex-specific expenditures (Exhibit 1) shows the average annual percentage rate of change between 1987 and 1995 of Medicare payments in constant dollars. The calculations were made by single years of age from a 5 percent sample of Medicare patients and then smoothed with a five-term moving average to reduce the effects of sampling variability.[5] The rate of change tended to be greater at older ages, and somewhat greater for women than for men. On average, the rate of increase was between 4 and 5 percent per annum in constant dollars. During that same period, real GDP per capita grew at only 1.2 percent per annum. It is this gap that is at the heart of the "Medicare problem." And because the private share of health care expenditures looms so large in the total financial needs of the elderly, it has major implications for the earnings replacement problem as well.

Why did age-sex-specific expenditures increase so rapidly during a period when reimbursement rates for physicians and hospitals were being held under tight rein? It was not

because physician fees for specific interventions were growing rapidly; they were not. It was not because hospital admission rates were increasing or patients were staying in the hospital longer. They were not. Moreover, the growth of utilization over time cannot be attributed to declining health of the elderly. On the contrary, age-specific health status has probably been improving over time.

Most experts believe that "technology" is the driving force behind the long-term growth of health care expenditures. In a survey of fifty leading health economists in 1995, 81 percent agreed with the statement, "The primary reason for the increase in the health sector's share of GDP over the past 30 years is technological change in medicine."[6] Expenditures grew primarily because the medical care system was delivering more and better services to patients: new drugs, MRI's, angioplasties, hip replacements, and many other costly interventions. Advances in medical technology have made it feasible and desirable to do more for each patient and to intervene with more patients.

The impact of technology

The effect of technological advances on expenditures is rarely simple or immediate. Occasionally a blockbuster "breakthrough" has a rapid impact on expenditures; Viagra, for example, is expected to boost annual health care spending by more than a billion dollars within a year or two of its introduction. More often a technological advance such as a new drug, surgical procedure, or diagnostic technique has only a modest effect on expenditures initially. Over time, however, further development, refinement, and diffusion of the technology result in large increases in spending. This process of progressive diffusion can be seen in Exhibit 2, which shows levels of utilization of seven frequently used procedures in 1987 and 1995, and in Exhibit 3, which shows rates of change between those years. The changes are age-sex-specific, thus eliminating the effects of these demographic variables on changes in utilization. We see that all seven procedures showed substantial increases in utilization between 1987 and 1995 for both sexes at all ages. Even the rapid diffusion of angioplasty, which was expected to obviate the need for CABG for many patients, did not result in lower utilization of the latter procedure. The median rate of change for the thirty-five procedure age groups was 11.1 percent per annum for men and 10.7 percent per annum for women. The rate of increase tended to be more rapid at older ages.

One lesson to be taken from these data is that the attribution of increases in expenditures to

"technological change" must be understood in a broad sense. None of the seven procedures was a breakthrough in 1987. Instead, we observe that as physicians developed greater confidence and capacity to perform the procedures on more patients, especially on older patients, utilization steadily increased. Most of the growth in health care utilization probably takes this form, rather than the sudden appearance of a new intervention which is widely used from the start.

Increases in rates of procedures and other interventions have most likely contributed to longer and better quality lives for many of the elderly. From 1987 to 1995 their age-sex-specific mortality rates declined at a brisk pace of about one percent per annum. It is possible that the additional expenditures, on average, met reasonable cost-effectiveness standards. If so, the key question is not "Shall we do it?" but "Who will pay?" If expenditures continue to grow at the same rate as they have in the past, health care for the elderly in 2020 will require 10 percent of the GDP as compared with 4.3 percent in 1995. Will it be possible to raise tax rates enough to maintain the government's current share? That seems unlikely. Will the elderly have enough income to pay their current share or more without seriously jeopardizing their ability to buy other goods and services? Nothing in current income trends of the elderly or in prospects for greater Social Security retirement payments in the future suggests that they will.

What Can Be Done?

There are only two possibilities to avoid the economic and social crises foreshadowed in current trends. The nation must either slow the rate of growth of health care expenditures on the elderly or find ways to pay for the additional care.

Slow the growth of health care expenditures

Only three routes exist to slow the growth of health care expenditures: a) reduce the rate of growth of the prices of the resources used in health care, e.g., squeeze physicians' incomes; b) produce the same or more services with fewer resources, e.g., automate laboratory tests; or c) slow the rate of growth of real services to patients.

The first route may be politically popular as long as the bashing is confined to physicians and drug companies, but it will not yield much over an extended period of time. Managed care organizations scored some quick gains this way in the mid-1990s, but by 1998 the possibility of further squeezing without jeopardizing quality of care has become much smaller. Over a period of twenty years or more, trying to pay lower prices for health resources can have only a modest

impact on the rate of growth of expenditures because prices must approximately keep pace with the rest of the economy in order to attract resources to the health sector. The second route, greater efficiency, faces problems similar to lowering the prices of resources. A few quick gains can be scored by eliminating obvious inefficiencies, but there is little reason to expect that the health care system can continue to achieve ever greater gains in efficiency decade after decade without cutting into the quality of care.

Over the long haul, there is only one reliable way to slow the growth of expenditures—a slowing of the growth of services to patients. Will this affect the quality of care? Almost certainly. While there are some ineffective services delivered in every system and at every point in time, it is virtually impossible to cut back only on those services without affecting the delivery of other services that do extend lives, improve function, or provide assistance with daily living. Furthermore, because technology is the principal force behind the growth of utilization of services, the most important strategy for slowing that growth must be to slow the development and diffusion of new technology. Public policy affects technology through Medicare, Medicaid, and other publicly-funded health care insurance programs. The government's willingness to pay for particular services influences the adoption and diffusion of technologies, and the pace of adoption influences private investment in research and development. The government also influences the development and diffusion of technology by subsidizing medical research and the training of specialists and subspecialists.

If the rate of growth of age-specific expenditures could be reduced by one percentage point per annum, health care spending per older person in 2020 would be less than $20,000 (1995 dollars); if it could be reduced by 2 percentage points per annum, spending would average about $15,000 per person, a figure which would probably be manageable with modest tax increases and some realignment of the elderly's priorities regarding work, savings, and consumption. But most present thinking in Washington is to accelerate the rate of growth of medical technology. Proponents of this strategy usually assert that new technology will *reduce* expenditures. On average, it has not worked out that way in the past, and there is no particular reason to think that it will in the future. A technological advance may cut the cost of performing a particular intervention, or of treating a particular patient, but expenditures depend on the number of units of service as well as on the price per unit. For example, technological advances in the computer industry have led to spectacular decreases in price per unit of service; nevertheless, expenditures on computers have soared. Much the same happens with most technological advances in medicine.

Find ways to pay for the additional care

Most people want to live longer, better quality lives; therefore some policy advisors prefer to focus on finding ways to pay for more health care rather than on slowing the growth of expenditures. After all, there is no physical law or economic principle that says a nation cannot spend 10 percent of its GDP on health care for the elderly if it chooses to. But how can this be accomplished? An increase in the government's *share* of the bill seems very unlikely. Indeed, even to maintain its current share, the government will have to hike tax rates appreciably and make major cuts in other programs. If the growth of services were to continue as before, with many new and improved interventions available to patients, the elderly would have to be willing to forego other goods and services, work more than they have in the past, and substantially increase their savings prior to retirement. These are not easy options.

Consider cutting back on other goods and services. If the health bill were $25,000 per person (1995 dollars) in 2020, the elderly would have to adjust to a cut of more than 20 percent in other goods and services relative to 1995, even if their share of the bill remained the same.[7] An increase of 5 percentage points in the elderly's share of health care expenditures would result in a further decrease of more than 10 percent in income available for other goods and services. There are probably limits to how much the elderly would be willing to sacrifice an adequate diet, a car that runs, or a roof that doesn't leak for more medical care.

Given better health and longer life expectancy, an increase in work may be one feasible approach. Many policy analysts look to an increase in the Social Security retirement age as a way of increasing labor force participation at older ages. Such an increase would surely help, but it is important to note that some men and women substantially decrease their paid work well before 62, the age when Social Security retirement benefits first become available. Exhibits 4 and 5 show indexes of mean annual hours of all persons, the percent of persons working, and mean hours of those who were working by single years of age from 45 to 75 averaged over the years 1993, 1994, and 1995.[8] The values for ages 45-49 were set equal to 100.[9] By age 60 men's hours are only 67 percent of the average of ages 45–49; for women only 57 percent. The decrease in mean hours arises for two reasons: (a) a decline in the percent of persons who have any paid work during the year and (b) a decline in average annual hours for those who are working. Exhibits 4 and 5 show that the former is by far the more important reason. At age 60 the percentage of men who have any hours of work during the year is only 76 percent of the 45–49 average; the comparable figure for women is 64 percent. Some decline in average annual hours of

those who are working (the top line in each figure) does occur, but the change is much smaller than the percent dropping out of the workforce entirely. Moreover, only 3 percent of the 60-year-olds who had no paid work during the year spent any time looking for work.[10] A critical examination of the public and private policies that discourage older workers from seeking work and inhibit firms from employing them is badly needed.

The most important potential source of increased income for the elderly is greater saving prior to retirement. The reason is in the numbers—after age 65 income from savings (interest, dividends, and private pensions) is currently four times larger than income from work.[11] Thus, only a 25 percent increase in the savings rate prior to 65 would add as much to income as a doubling of work. Furthermore, the unannuitized portion of the increased savings could be "spent down" in later years, thus adding to the elderly's capacity to pay for health care and other goods and services.

How can current workers be induced to save more? Tax incentives would almost surely help, as evidenced by the IRA program during 1981-86. When public finance economists at the 40 leading American university economics departments were asked what percentage of inflows to IRAs represented net additions to national savings, the median estimate was 20 percent.[12] Tax incentives alone, however, would probably not be enough. Many workers with average, or even above average, income did not participate in the IRA program and do not participate currently in employer-sponsored 401-K plans, even when the employer would provide a matching contribution. In recent years millions of Americans reached age 65 without any significant financial assets.

Not only is the average level of savings very low, but inequality in income from savings of retirees is extraordinarily large relative to inequality in employment income of the same cohort when they were younger (see Exhibit 6).[4] To measure inequality, family income reported in the Current Population Survey was divided equally among family members, and the ratio of each individual's income to the median calculated. At ages 65-69 in 1995, less than 10 percent of persons had income between 0.6 and 1.4 times the median of $1,800. Most of this age group were concentrated at the extremes of the distribution; 36 percent had less than 0.2 of the median, and 42 percent had more than 1.8 times the median. The inequality in employment income experienced by this cohort when they were 55-59 (in 1985) or 45-49 (in 1975) was much less. Although there are many factors that influence the *ability* to save for retirement, employment income is surely the dominant one. Thus, the data in Exhibit 6 suggest that differences in the *willingness* to save probably provides a major explanation for the huge inequality in accumulated savings at retirement.

This view receives substantial support in a study by Venti and Wise based on longitudinal data from the Health and Retirement Survey. They show that inequality in savings for retirement is not primarily the result of inequality in earnings prior to retirement: households with the *same* lifetime earnings approach retirement with vastly different levels of accumulated wealth.[13] Even after adjustments for special factors that affect the ability to save and for differences in investment returns, the authors conclude that, "The primary determinant of the dispersion of wealth at retirement is evidently the choice to save or spend while young."[14]

If public policy aims at substantially increasing the elderly's income from savings while avoiding huge increases in income inequality after age 65, it seems that part of the program would have to be compulsory. Even then, if the elderly became more dependent on their own income from work and savings, there would probably be greater income inequality among the elderly than at present. Such a possibility should be evaluated in context. Once Social Security retirement is added to income from savings and employment, there is *less* total income inequality at older ages than at any other age.[1] An inalterable commitment to an egalitarian policy after age 65 would probably inhibit the changes in work and savings that will be required to pay for future increases in health care.

Conclusion

Long-term reform of Medicare (and Social Security) must face three harsh but inescapable facts. First, total expenditures for health care of the elderly are rising much faster than the Gross Domestic Product, tax revenues, or the personal income of the elderly. Second, the number of years that the elderly are financially dependent on savings and government transfer payments continues to increase because rising life expectancy at age 65 has not been matched by rising labor force participation after that age. Third, on average Medicare pays for less than half the health care of the elderly and Social Security retirement benefits provide less than half of total personal income after age 65. Thus, efforts to "save Medicare" or "save Social Security" miss the main point: even when these efforts move policy in the right direction, they will prove to be "too little too late" unless they are embedded in broader policy initiatives that slow the rate of growth of health care expenditures and/or increase the income of the elderly.

Endnotes

1. V. R. Fuchs, "Provide, Provide: The Economics of Aging," in Thomas R. Saving and Andrew Rattenmaier (eds.), *Medicare Reform: Issues and Answers* (Chicago: University of Chicago Press, forthcoming). Currently available as NBER Working Paper #6642, of same title (1998).

2. Ibid.

3. Ibid.

4. Ibid.

5. V. R. Fuchs and M. McClellan, "Medical Technology and Mortality in an Aging Society," 1998, NBER paper in progress.

6. V. R. Fuchs, "Economics, Values, and Health Care Reform," *The American Economic Review* 86, no. 1 (March 1996):1-24. Table 1.

7. Fuchs, "Provide, Provide."

8. CPS Utilities, March CPS Utilities, 1964-1996, Release 96.1 (1997). (Unicon Research Corporation, 1640 Fifth Street, Santa Monica, CA 90401; 310/393-4636.)

9. The actual values at ages 45-49 are: hours for all persons 2,024 for men and 1,439 for women; percent working 91 for men and 79 for women; hours for those working 2,217 for men and 1,817 for women.

10. CPS Utilities.

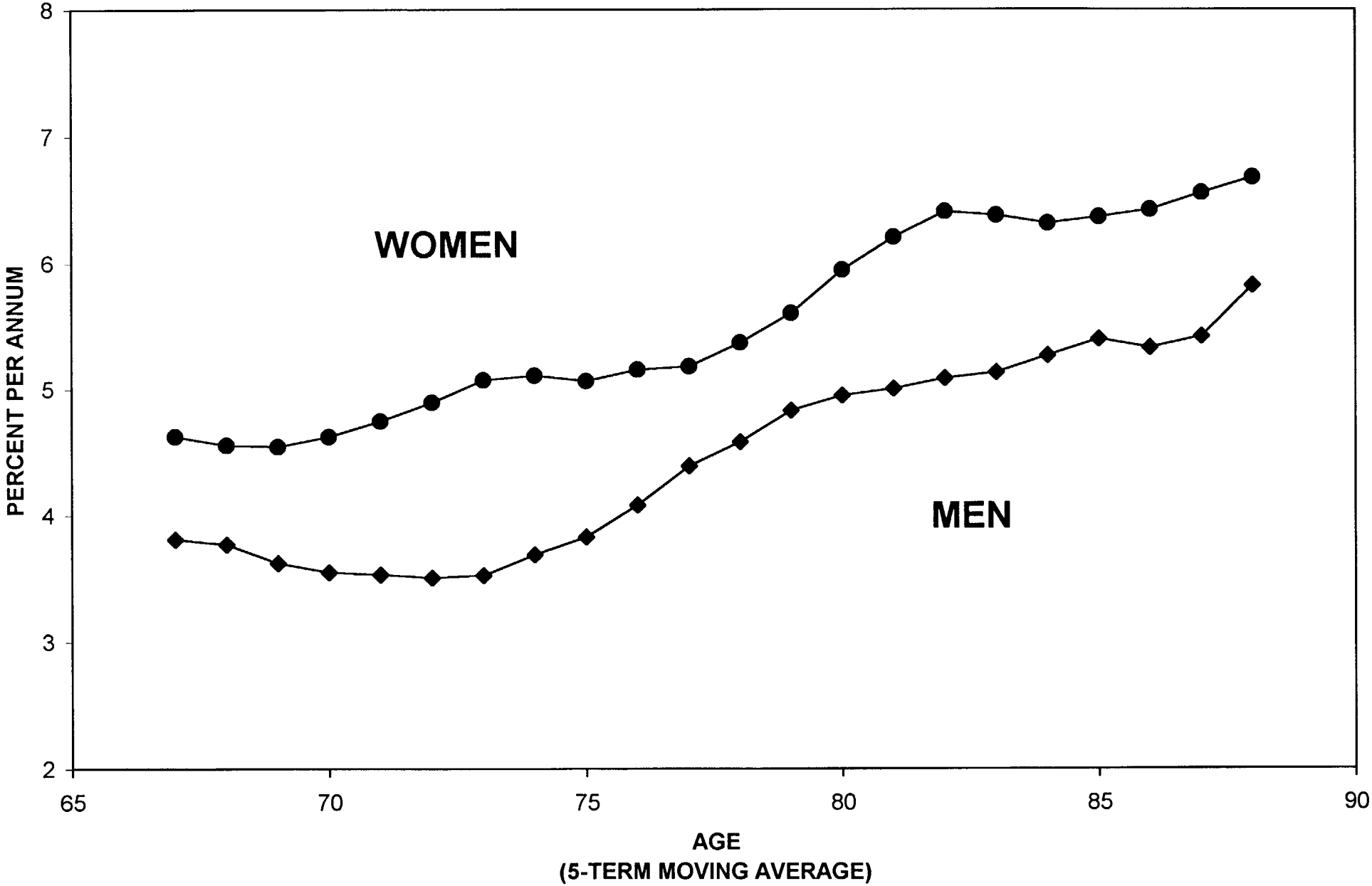
11. Fuchs, "Provide, Provide."

12. V. R. Fuchs, A. B. Krueger, and J. M. Poterba, "Economists' Views About Parameters, Values, and Policies: Survey Results in Labor and Public Economics," *Journal of Economic Literature*, forthcoming September 1998. (Currently NBER Working Paper 6151.) Table 2.

13. S. F. Venti and D. A. Wise, "The Cause of Wealth Dispersion at Retirement: Choice or Chance?" *The American Economic Review* 88, no. 2 (May 1998): 185-91.

14. Ibid., p. 191.

EXHIBIT 1
ANNUAL RATE OF CHANGE OF MEDICARE PAYMENTS PER PERSON BY AGE 1987 TO 1995



Source: V. R. Fuchs and M. McClellan, "Medical Technology and Mortality in an Aging Society," 1998, NBER paper in progress.

EXHIBIT 2
UTILIZATION OF SEVEN PROCEDURES IN 1987 AND 1995 BY AGE AND SEX
(PROCEDURES PER 100,000)

MEN						
PROCEDURE		**65-69**	**70-74**	**75-79**	**80-84**	**85+**
Angioplasty	**1987**	249	215	122	75	22
	1995	712	756	589	411	131
CABG	**1987**	560	545	357	179	33
	1995	750	849	706	436	106
Cardiac Catheterization	**1987**	1146	1135	740	379	111
	1995	1624	1863	1652	1109	399
Carotid Endarterectomy	**1987**	182	287	246	174	65
	1995	321	460	553	433	152
Hip Replacement	**1987**	76	90	113	122	92
	1995	250	331	467	609	724
Knee Replacement	**1987**	160	182	205	200	70
	1995	403	478	529	385	164
Laminectomy	**1987**	208	215	169	97	54
	1995	285	322	320	218	106

WOMEN						
PROCEDURE		**65-69**	**70-74**	**75-79**	**80-84**	**85+**
Angioplasty	**1987**	124	111	82	56	15
	1995	339	367	322	245	74
CABG	**1987**	187	179	138	59	12
	1995	266	322	324	171	29
Cardiac Catheterization	**1987**	708	709	483	182	52
	1995	1086	1254	1064	706	183
Carotid Endarterectomy	**1987**	111	132	132	95	30
	1995	221	229	273	217	77
Hip Replacement	**1987**	78	133	175	174	143
	1995	338	519	782	965	1444
Knee Replacement	**1987**	218	278	322	242	82
	1995	523	657	667	475	193
Laminectomy	**1987**	188	186	153	103	32
	1995	278	316	258	143	57

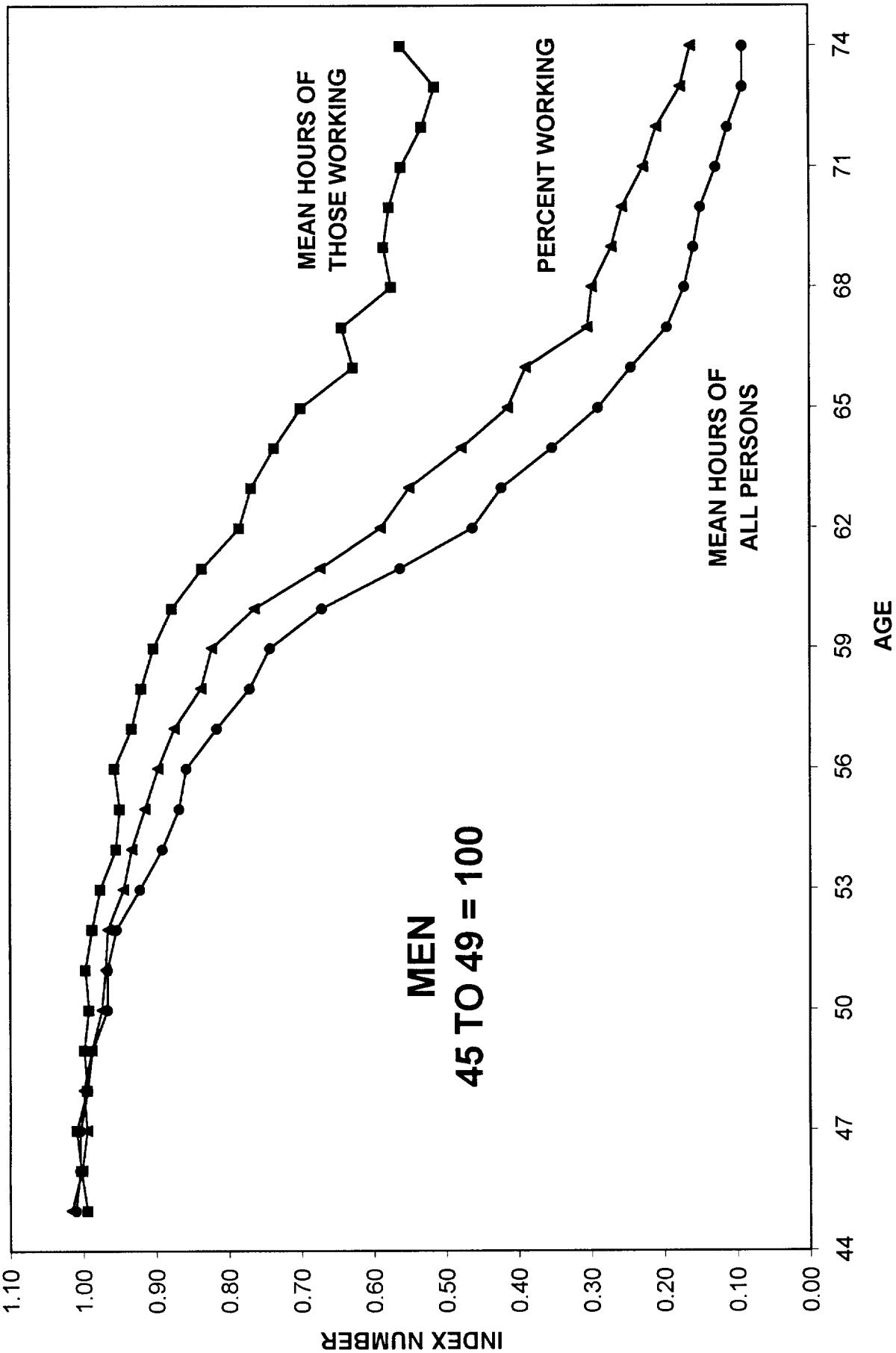
Source: V. R. Fuchs and M. McClellan, "Medical Technology and Mortality in an Aging Society," 1998, NBER paper in progress.

EXHIBIT 3
AVERAGE RATE OF CHANGE IN AGE-SPECIFIC UTILIZATION OF SEVEN PROCEDURES, 1987-95 (PERCENT PER ANNUM)

MEN					
PROCEDURE	**65-69**	**70-74**	**75-79**	**80-84**	**85+**
Angioplasty	13.1	15.7	19.7	21.3	22.3
CABG	3.7	5.5	8.5	11.1	14.6
Cardiac Catheterization	4.4	6.2	10.0	13.4	16.0
Carotid Endarterectomy	7.1	5.9	10.1	11.4	10.6
Hip Replacement	14.9	16.3	17.7	20.1	25.8
Knee Replacement	11.5	12.1	11.8	8.2	10.6
Laminectomy	3.9	5.0	8.0	10.1	8.4
WOMEN					
PROCEDURE	**65-69**	**70-74**	**75-79**	**80-84**	**85+**
Angioplasty	12.6	14.9	17.1	18.4	20.0
CABG	4.4	7.3	10.7	13.3	11.0
Cardiac Catheterization	5.3	7.1	9.9	16.9	15.7
Carotid Endarterectomy	8.6	6.9	9.1	10.3	11.8
Hip Replacement	18.3	17.0	18.7	21.4	28.9
Knee Replacement	10.9	10.8	9.1	8.4	10.7
Laminectomy	4.9	6.6	6.5	4.1	7.2

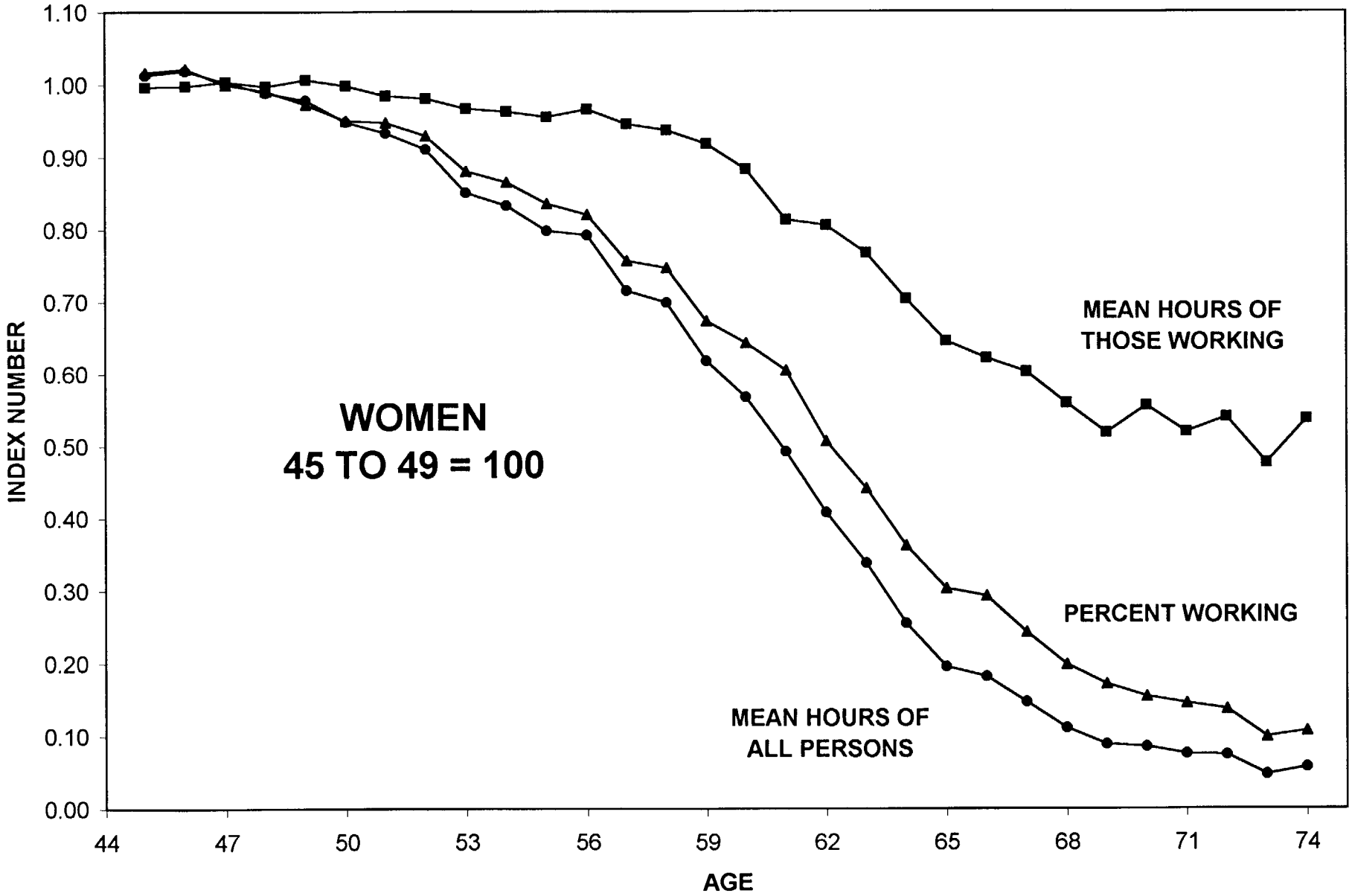
Source: V. R. Fuchs and M. McClellan, "Medical Technology and Mortality in an Aging Society," 1998, NBER paper in progress.

EXHIBIT 4
INDEXES OF MEAN ANNUAL HOURS OF WORK AND PERCENT WORKING BY AGE
(AVERAGE OF 1993, 1994, 1995)



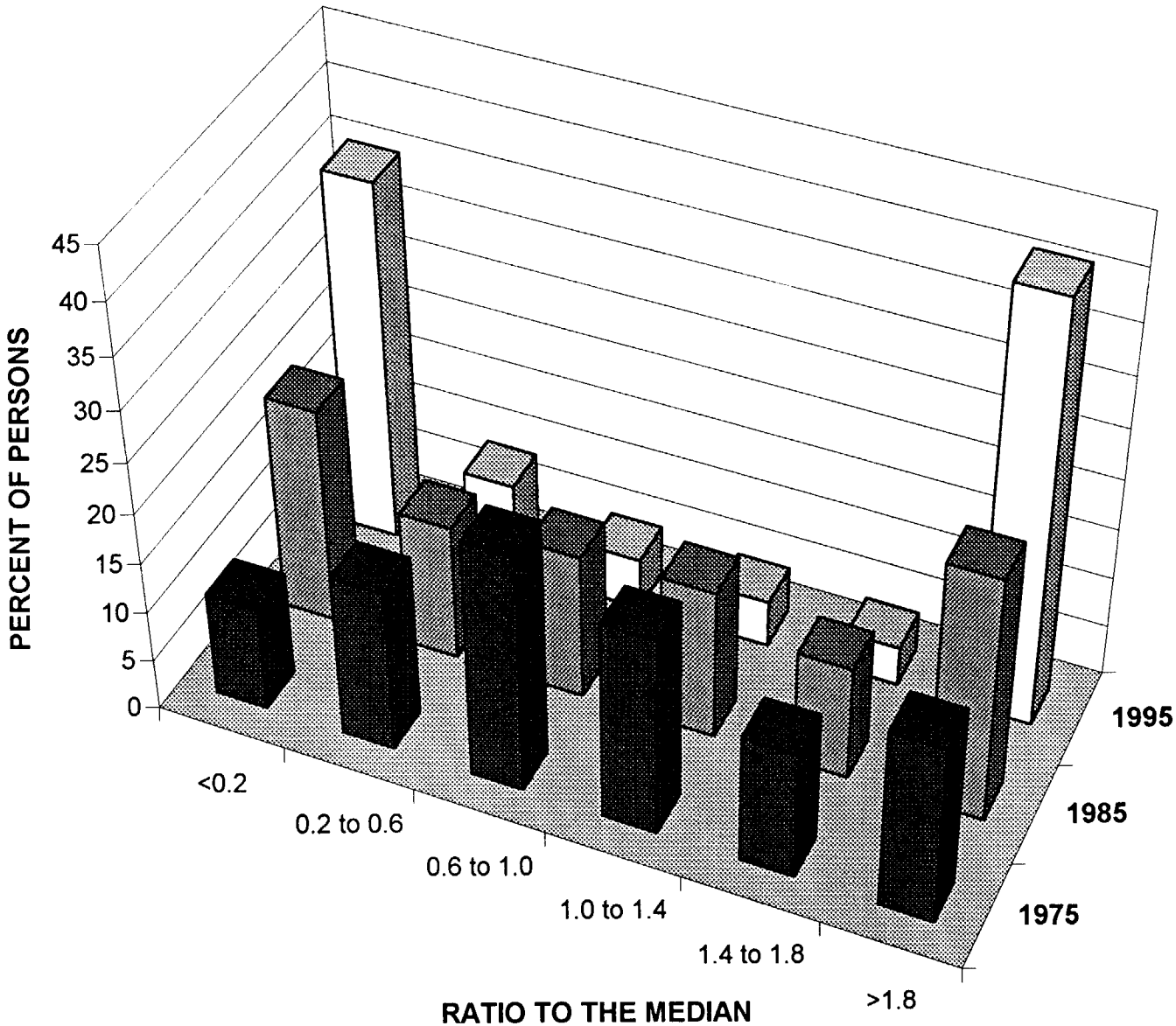
Source: CPS Utilities, March CPS Utilities, 1964-1996, Release 96.1 (1997). (Unicon Research Corporation, 1640 Fifth St., Santa Monica, CA 90401.)

EXHIBIT 5
INDEXES OF MEAN ANNUAL HOURS OF WORK AND PERCENT WORKING BY AGE
(AVERAGE OF 1993, 1994, 1995)



Source: CPS Utilities, March CPS Utilities, 1964-1996, Release 96.1 (1997). (Unicon Research Corporation, 1640 Fifth St., Santa Monica, CA 90401.)

EXHIBIT 6
INCOME FROM EMPLOYMENT (1975 AND 1985) AND SAVINGS (1995)
FOR THE COHORT BORN 1926 TO 1930



Source: CPS Utilities, March CPS Utilities, 1964-1996, Release 96.1 (1997). (Unicon Research Corporation, 1640 Fifth St., Santa Monica, CA 90401.)