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"A Lifetime Perspective on Proposals for Financing Nursing Home
Care: Assessing the Risks and Costs."

for

Thursday, October 25, 1990

Rosenwald 405

3:30 - 5:00

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A LIFETIME PERSPECTIVE ON PROPOSALS FOR
FINANCING NURSING HOME CARE

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September 1990

This paper was prepared for the annual meeting of the Gerontological Society of America in Boston, November 16-20, 1990. The authors are grateful to Alice Wade of the Office of the Actuary of the Social Security Administration for generating cohort life table data used in the analysis; Robyn Stone for helpful comments on earlier draft of this paper; Karen Pinkston of Social and Scientific Systems, Inc. of Bethesda, MD for programming support; and Mary Seidenberg for secretarial support. The views expressed in this paper are those of the authors, and any errors are theirs. No official endorsement by either the Agency for Health Care Policy and Research or the Department of Health and Human Services is intended or should be inferred. Address communications to Peter Kemper, Director, Division of Long Term Care Studies, AHCPR, 5600 Fishers Lane, Parklawn Building, Room 18A-55, Rockville, MD 20857, Phone 301-443-2560.

10/10/90

A LIFETIME PERSPECTIVE ON PROPOSALS
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ABSTRACT

The high cost of nursing home care and growth in the elderly population likely to need it have prompted a number of proposals to finance nursing home care, including front-end and back-end public entitlements, and public and private insurance. Based on data from the National Mortality Followback Survey and the National Nursing Home Survey, this paper estimates expected lifetime nursing home costs for persons turning 65 in 1990 and analyzes how much of this cost would be covered by various financing strategies. The expected discounted nursing home cost remaining at age 65 is estimated at \$27,600, but the distribution is highly skewed. The 9 percent of persons using five or more years of nursing home care will account for 64 percent of expected costs, whereas the 68 percent using less than three months of care account for only about 1 percent of costs. The percent of aggregate costs that would be covered by alternative financing strategies varies widely. For example, a front-end entitlement covering the first three months of care subject to 30 percent coinsurance is projected to cover 5.3 percent of aggregate costs; a back-end entitlement with a two year deductible and the same coinsurance would cover 40.6 percent of costs.

A LIFETIME PERSPECTIVE ON PROPOSALS
FOR FINANCING NURSING HOME CARE

The high cost of nursing home care and growth in the elderly population likely to need it have focused considerable attention on how such care will be financed in the coming decades. Aggregate expenditure on nursing home care, which has more than doubled since 1980, currently is paid in roughly equal shares by governments and out-of-pocket by private individuals. Private insurance is held by few and pays an inconsequential share of costs. Governments pay 97 percent of all third party payments for nursing home care, primarily through the Medicaid program.¹ This is the case despite a number of limits on Medicaid eligibility and benefits. Most assets must be exhausted and virtually all income spent on care to meet Medicaid eligibility criteria, reimbursement rates are low, and eligibility criteria and benefits are not uniform across states.

These limitations have prompted a variety of proposals over the last decade to create a public entitlement to nursing home care or to rely on public or private insurance to spread the risk of costly nursing home care. Although some proposals for entitlement to publicly-financed nursing home care would provide comprehensive coverage (e.g., Stark et al. 1988), most would limit benefits in some way. One approach to limiting benefits is to cover the first part, or "front end," of nursing home use. For example, as part of broader proposals Senator Kennedy and others (1988) and Robert Ball (1989) have proposed covering the

first six months of care. More recently, the Pepper Commission (1990) proposed, in addition to providing coverage for low and moderate income families, covering the first three months of nursing home care through a public entitlement, regardless of income.

The other approach is to cover nursing home use after a waiting period. This is often referred to as a back-end entitlement. For example, Senator Mitchell and others (1988) have proposed covering nursing home care after a two year deductible. Proposals involving public financing generally would require beneficiaries to pay a percentage of the cost of nursing home care. Coinsurance rates differ among the actual legislative proposals, ranging from 20 to 35 percent.

Long term care insurance can be either public or private, but either would spread the risk of costly nursing home stays among those purchasing insurance. Public insurance differs from public entitlement discussed above in that individuals must purchase public insurance.² Everyone eligible would be covered by an entitlement, but only some would choose to pay for public insurance. Benefits under public insurance could be specified in any combination of deductibles, coinsurance, maximum benefits, and payment rates.

A private insurance strategy would rely on the private sector to spread the risk of incurring nursing home costs (Meiners 1983, Task Force on Long-Term Health Care Policies 1987, Burke 1988, Meiners 1988). Numerous legislative proposals have been made to encourage the growth of the private insurance

market. They include exempting persons with long term care insurance from Medicaid eligibility requirements that would otherwise require spending down assets, and a variety of tax incentives including tax free transfers from retirement funds, tax deductions, tax credits, and tax deferred savings for the purchase of long term care insurance (Friedland 1990).

The various proposals clearly are very different in character and scope. This paper presents new estimates of expected lifetime nursing home use and cost and examines how much of this lifetime cost would be covered under various types of strategies currently under discussion. Previous research has provided information on annual cost of nursing home care (Letsch, Levit, and Waldo, 1988; Waldo and Lazenby, 1984; Rice, 1989) or costs based on single stays (Cohen, Tell, and Wallack, 1986). Neither captures total cost over a lifetime. Thus, neither provides the perspective needed for analyzing long term care financing. For example, rational retirement planning by individuals requires prospective information about total costs for nursing home care likely to be incurred over remaining lifetime. Similarly, because long term care insurance insures against one or more events of uncertain duration that may occur many years in the future, neither annual nor single-stay costs are a sufficient basis for decision making by insurers or potential buyers of insurance. Finally, from the public policy perspective, annual costs are useful for short-run budgeting. They are not useful, however, for the longer range issues of how

the long term care cost burden is distributed among the population and what implications that distribution has for desirability of various financing options.

Previous research has seldom taken a lifetime perspective on nursing home use and cost. Although a number of studies have estimated the lifetime risk of having some nursing home use (Kastenbaum and Candy 1973, Palmore 1976, Ingram and Barry 1977, Lesnoff-Caravaglia 1978, Vicente, Wiley, and Carrington 1979, Zappolo 1981, Liang 1986, and Murtaugh, Kemper, and Spillman forthcoming), only one published study has analyzed the amount of lifetime nursing home use, reported in broad categories of use (Kemper and Murtaugh 1990). The only published estimates of expected lifetime nursing home cost were based not on lifetime use, but rather on single nursing home stays (Cohen, Tell, and Wallack 1986). More recently, not yet published synthetic estimates of the combined lifetime cost of nursing home and home care based on simulation models (Gruenberg, Farbstein, and Tompkins, 1989; Kennel and Alecxih 1989) have become available.

Methods

Measuring Lifetime Nursing Home Use

Data on lifetime nursing home use are from the 1986 National Mortality Followback Survey conducted by the National Center for Health Statistics (NCHS, 1988). The survey is based on a nationally representative sample of 18,733 death certificates of

persons age 25 or older who died in 1986. The sample for the present study is the 9,181 decedents with respondent questionnaires who were age 65 or older at death. For each decedent, next of kin or someone else knowledgeable about the decedent was interviewed about the total amount of nursing home use during the decedent's life. Respondents for decedents who had used nursing homes were asked to place the amount of lifetime use into one of four categories: up to three months, three months to one year, one year to five years, or five years or more. They also were asked about nursing home use during the last year of life.

The strength of the Mortality Followback for the present study of nursing home costs is its unique ability to yield person-level information about use of nursing homes over the entire lifetime. There are two drawbacks, however. First, the survey is able only to place individuals within broad categories of use rather than providing the specific length of time spent in nursing homes. Second, the categories of use defined on the survey are not consistent with those defined in various proposals to expand public payments for long term care. Specifically, at least one proposal would pay for the first six months in a nursing home, while another would pay for use after the first two years in a nursing home. Therefore, data from the Discharged Resident component of the 1985 National Nursing Home Survey (Hing et al. 1989), also produced by NCHS, were used to further break down the Mortality Followback categories so that persons using

three to six months or more than two years could be identified, and to estimate mean use for persons in each category.

The discharged resident file provides detailed information about a representative sample of all discharges over the course of the survey year and dates of prior and subsequent stays in the same or other facilities. In order to match as closely as possible the Mortality Followback sample and to ensure that lifetime use was complete, a subset of 2,693 discharges of persons known to have died at discharge or subsequently and to have survived to age 65 or older was selected. Ninety-three percent of the Mortality Followback decedents ever using a nursing home had some use in the last year of life, so that only the experience of the remaining 7 percent is missing from the Nursing Home Survey sample. Because of limited followup information, however, those who used nursing homes in the last year of life but died after discharge are under-represented.

Total use reflected in all reported stays was computed for each discharge, and mean use was calculated by gender for six categories: up to three months, three months to six months, six months to one year, one to two years, two to five years, and five or more years. Except for the unbounded five-or-more-years category, the calculated means were very close to the midpoints of the categories. Mean use for those using at least five years of care was 8.7 years--9.4 years for men and 8.5 years for women. Proportions of discharges with three months to one year of use using less than six months and of discharges with one to five

years using less than two years also were computed by gender. These proportions were used to reassign randomly by gender the appropriate number of Mortality Followback decedents with three months to one year of use to the new three-to-six-months category and the appropriate number of those with one to five years of use to the new one-to-two-years category. The mean use estimate by gender for the appropriate category then was assigned to each Mortality Followback decedent.

Timing of Nursing Home Use

Because the focus of this study is cost and financing of expected remaining nursing home use by persons turning age 65, use was limited to that estimated to have occurred at or after age 65. Both this estimate of use occurring after age 65 and the subsequent cost estimates require an assumption about the timing of use, because no information about timing was available on the Mortality Followback Survey. The assumption made here is a simple one--that use was continuous after first entry into a nursing home. Thus, for the 93 percent of the sample who had nursing home use in the last year of life, the assumption is that all use immediately preceded death. For the remaining 7 percent who did not use a nursing home in the last year of life, an estimate of mean time between last use of nursing homes and death, approximately four years, was computed from data for similar persons in the 1984 National Long Term Care Survey. Use by this group was assumed to be continuous, ending four years

before death. Age at death then was used to exclude any use that would have occurred prior to age 65, under the assumption of continuous use.

In practice, this method of limiting use to that occurring after age 65 had little affect on estimates because only 72 of the 9,181 decedents were calculated to have had any use before age 65, and only 14 had all use before turning age 65. To the extent that individuals who survive to age 65 have substantial gaps between episodes of nursing home use, the assumption of continuous use will place use later in life than it actually occurred, and estimates of use after age 65 will be biased upwards.

Reweighting for Projections

A difficulty in using historical data to project future costs is that the experience of the cohort of persons dying in 1986 is likely to differ from that of a cohort of persons turning 65 in 1990. For example, gains in life expectancy and growth in the size of cohorts turning age 65 over the last 40 years would make the proportion of persons dying at each age in 1986 differ from the proportions that would be expected in a cohort turning 65 in 1990. Following the methodology used in Kemper and Murtaugh (1990), Social Security Administration projections of life expectancy by gender for those turning age 65 in 1990 were used to reweight the sample to adjust for these two factors. Because nursing home use is positively related to age at death,

this is an important adjustment. For example, about 37 percent of all decedents dying in 1986 at age 65 or older used a nursing home. After the reweighting to approximate life expectancy of those turning 65 in 1990, about 43 percent are projected to use a nursing home between age 65 and death.

It was not possible, however, to adjust for potential changes in the likelihood or length of nursing home use due to changes in morbidity or other factors. For example, no attempt has been made to take into account individual or institutional responses to changes in public programs or private insurance. While changes that reduce the effective price of nursing home care for the individual would tend to increase use, other factors such as limitations on the supply of nursing home beds, increased public funding for home care, and increases in active life expectancy could reduce both the proportion of persons using nursing homes and the average amount of use.

Estimates presented here thus reflect expected nursing home use and cost occurring between age 65 and death for the cohort of persons just turning 65, given historical patterns of nursing home use. While the estimates are subject to the uncertainty inherent in any projections, the lifetime perspective they reflect represents a substantial improvement over prior estimates based on partial nursing home use and provides a foundation for considering the implications of alternative financing strategies.

Estimating Expected Discounted Cost

Estimating the expected cost of nursing home care implied by projected use by the cohort of persons turning 65 in 1990 requires taking into account a number of factors. The first is the cost of a year of nursing home care. The second is implied by the first: Which year of nursing home use? The cohort of nursing home users are projected to enter nursing homes over the next thirty to forty years. Because the impact of inflation accumulates over time, both a general rate of inflation and potential excess inflation in the nursing home industry between now and the year 2030 must be taken into account. Finally, since the inflated dollars of the future have little meaning at present, some assumption about long run interest rates is needed in order to discount costs to a more meaningful present value.

The price of nursing home care was assumed to be \$25,000 per year in 1990. This annual cost, just under \$70 per day, was estimated by taking average charge data from the 1985 NNHS and adjusting it for inflation between 1985 and 1990.³ To incorporate inflation, following the methodology used by Rivlin and Wiener (1988), assumptions underlying the mid-range estimate (Alternative II-B) of the long range condition of the Social Security trust funds (U.S. Congress 1989) were used. The average annual general inflation rate was assumed to be 4 percent over the period between 1990 and the death of the last member of the cohort, and nursing home costs were assumed to increase at an additional 1.5 percent per year. Because nursing home care is

labor intensive, excess nursing home cost inflation was estimated by summing projected average annual increases in real wages (1.3 percent per year) and fringe benefits (0.2 percent per year). Using these assumptions, costs incurred by each member of the cohort using nursing home care were inflated over the number of years between turning age 65 and entry into the nursing home and the number of years spent in the nursing home.

Finally, to obtain the present value of these inflated costs, an average long run real interest rate of 2 percent--a nominal rate of 6 percent--from Alternative II-B was used to discount each individual's costs back to 1990.⁴ The key factor in the process of inflating and discounting costs is the spread between excess nursing home cost inflation and real interest--here 0.5 percent. Less (more) would have to be set aside to cover any future expense the more real interest exceeds (falls short of) nursing home inflation. The present discounted values were summed to arrive at the aggregate amount that would have to be invested today to fully cover the future cost of nursing home care of the cohort turning 65 in 1990. This aggregate was averaged over the entire cohort, including those using no nursing home care, to obtain the expected cost per person.

Expected Lifetime Use and Cost

Expected remaining lifetime use of nursing homes of individuals turning 65 in 1990 (Table 1), is the product of two

factors--the probability that an individual will have any nursing home use before death, and the average, or expected, amount of use among those who do enter nursing homes. Two in five persons in the cohort can expect to enter a nursing home, and those who enter can expect to spend 2.8 years there. Thus, each person turning age 65 in 1990 has an expected remaining lifetime nursing home use of 1.2 years.

At an annual cost of \$25,000, this much care would cost about \$30,000 in constant 1990 dollars. After adjusting for inflation and discounting to age 65, this amounts to an expected discounted cost of \$27,600. Thus, in order to fully fund the expected nursing home use of all persons turning age 65 in 1990, \$27,600 per person would have to be invested now and earn an average 0.5 percent over excess nursing home cost inflation for the life of the cohort.

Men and women clearly do not face the same risks. One in every three men versus one in every two women will use a nursing home before death. Women who enter a nursing home also remain there on average a year longer than men. The combined impact of lower risk of use and lower expected use is that men face an expected discounted cost of \$16,000, less than half the \$37,500 faced by women.⁵

Because the estimates are based on projected experience over the next 30 to 40 years, they are sensitive to the assumptions about long range economic conditions and to the assumption made about mean use among those in the open-ended last category of

persons using five or more years of nursing home care. While mean use estimates within each category are subject to error, all categories except the last are at least fairly narrowly bounded. Relatively extreme interest rate and excess nursing home inflation combinations (spreads of 1.9 percent and -0.7 percent) yielded estimates roughly 25 percent above and below the benchmark \$27,600 estimate reported above. More plausible combinations of values consistent with alternative assumptions in the Social Security trust fund projections yielded smaller spreads between interest and excess inflation and thus estimates that bracketed the benchmark closely.⁶ Assuming that mean use for those using at least five years of care was alternatively 25 percent higher or lower than the estimates calculated from the NNHS sample and used in the benchmark estimate yielded estimates 16 percent above and below the benchmark, respectively.

It should be noted that the overall expected discounted cost of \$27,600 per person--on its face potentially within the reach of many middle-income and most upper-income persons at age 65--has meaning only in the context of some means of pooling risks. This is because the average risk reflected in this expected cost per person is the product of highly skewed underlying distributions of use and cost of nursing homes. That is, while each individual faces the same expected cost, the 57 percent using no nursing home care will incur no costs, but others will incur costs that far exceed their accumulated savings if they were able to set aside expected costs now. For example, only

about 9 percent will use five or more years of nursing home care, but this 9 percent will account for 64 percent of costs (Table 2). The less than 20 percent of the cohort using two or more years of care will account for nearly 90 percent of costs. Conversely, the 68 percent using less than three months of care account for about 1 percent of expected costs.

Similar patterns are seen for men and women considered separately, but women have a greater likelihood of using all amounts of care and a greater likelihood of using substantial amounts of care. Women are twice as likely as men to use between two and five years of care, and more than three times as likely to use five or more years. Although the distribution of nursing home cost is highly skewed for both men and women, the distribution is even more unequal for men than for women. The top 10.2 percent of the distribution of men account for 83.4 percent of the cost, whereas the top 13 percent of women accounts for 67 percent of the cost.

Table 3 shows the implied aggregate commitment that would have to be made at present in order to prospectively fund all expected nursing home costs of persons turning age 65 in 1990. At \$27,600 per person, this aggregate commitment would be about \$60 billion. Women, who make up just over half the cohort, account for nearly three-quarters of these costs.

Cost Covered under Alternative Strategies

The various financing entitlement and insurance strategies that have been proposed would cover different proportions of this \$60 billion dollars. To estimate these proportions, the amount of nursing home care that would be covered in each year between age 65 and death was calculated for each person in the sample. The associated cost was then inflated and discounted to age 65 in the same manner as overall cost and aggregated across the entire sample.

The estimates are not intended to simulate the cost of specific proposals but instead to estimate the relative magnitude of the cost that would be covered under alternatives illustrative of the types of strategies being proposed. Therefore, the estimates do not consider home care, coverage of which is part of most proposals, or the administrative complexities of specific proposals. For example, an entitlement to coverage of the first three months in a nursing home might also cover a second three months in another episode if it were separated by sufficient time at home. Similarly, eligibility restrictions based on income or disability are not taken into account. Finally, although proposals embodying various combinations of these strategies have been made, the analysis does not consider combinations of strategies.

In addition to these simplifications, the estimates do not account for increases in the use of nursing home care likely to

occur in direct response to these changes in policy. Because all of the strategies would lower the price of nursing home care faced by those who are covered, nursing home use can be expected to increase. Unfortunately, available evidence is insufficient to estimate the magnitude of the increase' or its effect on the proportion of costs covered under alternative strategies. The estimates, which are estimates of gross costs, also do not account for savings in existing public programs. In the case of public programs, net government cost would be lower due to offsetting reductions in cost already being paid by Medicare and Medicaid.

Entitlement Strategies

Table 4 presents projections of the proportion of aggregate expected nursing home cost covered under hypothetical front- and back-end entitlement strategies. To illustrate the effect of coinsurance, rates of zero and 30 percent are assumed.⁸ Front-end entitlement strategies would cover a relatively small proportion of expected discounted lifetime nursing home cost--7.5 and 13.6 percent under 3- and 6-month entitlements, respectively, with proportionate reductions when 30 percent coinsurance is assumed. In contrast, a back-end entitlement with a 2-year deductible and no coinsurance would cover 58.0 percent of expected costs.

The wide disparity in the extent of coverage between front- and back-end entitlements is the consequence of the highly skewed

distribution of nursing home use. Although all nursing home users receive some benefits under a 3-month entitlement, the average value of the benefit received (after discounting and subtracting the 30 percent coinsurance) would be about \$3,300 (not shown). A front-end entitlement thus would provide a small benefit to a large number of people.

In contrast, fewer would benefit under a back-end entitlement but their benefits would be much greater. Of those turning 65, 18.4 percent would receive benefits under a back-end entitlement, and the average value of the benefit they would receive (net of coinsurance) would be about \$61,000. The total cost of a back-end entitlement would be substantially greater because it would cover a much higher proportion of expected cost.

Insurance Strategies

How much of aggregate expenditures would be covered by insurance strategies depends on how many people would purchase insurance, about which there is a great deal of uncertainty. Public long term care insurance does not now exist, so no evidence exists about how many people would purchase it. The market for private long term care insurance so far is small--about 1.5 million policies are currently in force--but growing rapidly (Health Insurance Association of America 1990). How much it will grow is uncertain. Estimates are that anywhere from 18 to 68 percent of the elderly could afford private long term care insurance premiums.⁹ These estimates, however, pertain only to

the ability to afford premiums. Evidence on actual purchasing behavior does not exist because the market is so new. Given this uncertainty, a range of estimates is presented under the assumptions that 25, 45, or 65 percent of those turning 65 purchase insurance.¹⁰

To illustrate the effect of a public insurance strategy, we assumed that it covers all nursing home cost except a 30 percent coinsurance. The estimates also assume that persons with average expected nursing home use are insured; that is, there is neither favorable nor adverse selection in the decision to purchase or sell insurance. Under these assumptions, public insurance would cover between 17.5 and 45.5 percent of nursing home cost (Table 5). These estimates flow directly from the assumptions that public insurance would cover 70 percent of all nursing home care for 25 to 65 percent of the population, and as indicated, many other assumptions about benefits could be made.

The percent of cost that would be covered by private insurance was simulated for three policies with benefits similar to those available in the market. All three, like most private long term care insurance policies, are fixed-indemnity policies, which pay a predetermined benefit per day for nursing home care regardless of the actual charge. This benefit is assumed to be equal in 1990 to the average cost used in the cost calculations. Although there are many dimensions along which policies vary, two of the most important are the maximum number of years of nursing home care covered and the number years over which benefits are

adjusted for inflation. Maximum benefics can range from one year to unlimited lifetime coverage, but many companies' maximums are between three and ten years. Inflation protection options also vary widely. Although companies sell policies without any inflation protection, many also offer the option of increasing benefits, for example, by 5 percent a year for 10 or 20 years.

Private insurance with various combinations of maximum benefits and inflation protection covers a relatively small proportion of expected lifetime costs. An insurance policy with a two year maximum benefit and no inflation protection covers only between 4.0 and 10.4 percent of expected discounted lifetime cost, depending on how many people purchase insurance. One with a five year maximum benefit and inflation protection for 10 years only covers from 10.5 to 27.3 percent of expected lifetime costs. Only the insurance policy with no maximum and 5 percent annual benefit increases for 20 years would cover a substantial share of the nursing home costs if purchased by a large number of people.

The relatively small proportion of cost covered by all but the most generous private insurance policy is only partly due to the assumption that not everyone purchases insurance. Private insurance does not cover all costs even for the insured. For example, if everyone were to purchase the five year maximum benefit policy with 10 years of inflation protection, insurance would be expected to cover only 42 percent of the nursing home costs (not shown). The five year maximum means that the policy does not cover the tail of the distribution where substantial

cost lies--27.8 percent of expected discounted cost is for use beyond five years (not shown). Moreover, only 10 years of benefit increases limits inflation protection substantially. Nursing home use typically occurs well after age 65--giving ample time for inflation to erode the value of a fixed-indemnity benefit purchased at age 65 even with 10 years of increases. Thus, to the extent that private insurance policies fail to insure the costly tail of the distribution or fully protect against erosion of benefits by inflation, they will fall far short of covering all nursing home costs even for those who buy insurance.

The number of people purchasing insurance, moreover, is not likely to be independent of the benefits of the policy purchased because greater benefits cost more. For example, whereas the premium for a policy with a two-year maximum and no inflation protection would be on the order of \$800 per year, that for one with no maximum and 5 percent increases for 20 years would be about \$2500 per year.¹¹ It may be that fewer people will purchase a policy with generous benefits, in part because they cannot afford it. If so, the more optimistic the assumption about the extent of benefits covered by private insurance policies, the more pessimistic the assumption about the number of people purchasing insurance should be.

Discussion

Individuals now turning age 65 face expected discounted costs for nursing home care over the rest of their lives of \$27,600 according to the estimates reported here. This average cost is misleading in terms of any individual's liability, however, because costs are distributed very unevenly: Nine percent of those turning 65 (20 percent of those using a nursing home) are projected to incur over three-fifths of all nursing home costs. Given such a skewed distribution of cost, the current growth in the private insurance market and interest in public programs that spread the risk among the population generally are understandable.

The government would have to commit \$60 billion dollars to fully prefund nursing home coverage for the entire cohort turning 65. This would, of course, result in some savings in current government programs--federal and state governments spent \$20 billion in 1987 on the nursing home care of persons of all ages (Letsch, Levit, and Waldo 1988). Nonetheless, full coverage would leave a substantial net government cost. A proposal to pay the entire cost seems unlikely to be considered seriously in the present budget environment.

None of the strategies for financing nursing home care considered here would cover this entire cost. They would leave a substantial share of the costs to private individuals or Medicaid and other public programs, and they would change the distribution

of long term care costs among payers. From data currently available, however, it is only possible to speculate about the extent to which new benefits would substitute over a lifetime for current public or private costs.

How much of nursing home cost public and private insurance will cover depends, we have seen, on the level of benefits and especially on the number of people purchasing insurance. However large the group purchasing insurance, however, it is likely to be dominated by middle and upper income groups who can both afford the premiums and have a financial interest to protect. As a result insurance benefits are unlikely to substitute substantially for Medicaid. Rather, insurance is likely to redistribute costs largely among those who currently would, if they use a nursing home, pay for their own care. Within this private pay group, cost would be redistributed from nursing home users, especially those using large amounts of care, to nonusers.

Public entitlements would substitute partly for private costs and partly for costs that are already public, primarily under Medicaid. As seen above, under a front-end entitlement, which would cover only a small proportion of total cost, all nursing home users would receive a benefit, but it would be small. A back-end entitlement would cover a much larger proportion of costs by covering the costly tail of the distribution. Less than half as many people would receive a benefit, but it would be many times as large. A back-end entitlement would substitute for Medicaid to a greater extent

than a front-end entitlement, not only because a back-end entitlement is larger absolutely but also because the back-end of nursing home use is more likely to be paid for by Medicaid than the front-end.

Although the direction of the effects of these strategies on the distribution among payers seems clear, additional data and further research are needed to estimate their magnitude. Although additional information is needed, it is also appropriate to ask how much care should be covered publicly and for whom. A generally accepted rationale for public financing of long term care does not exist.

Present patterns of public spending on health care certainly do not provide consistent norms. The percent of personal health care expenditures in the U. S. that are public, range widely depending on the service. At one extreme, only 2 percent of expenditures for dentists and 11 percent of expenditures for drugs and medical sundries were public in 1987; at the other extreme 52 percent of hospital expenditures and 31 percent of physician expenditures were public (Letsch, Levit, and Waldo 1988). For the elderly, the public share is much greater--89 percent for hospital care and 60 percent for physician care, according to the most recently published data which are for 1984 (Waldo and Lazenby 1984). Because they are largely under Medicare, these public benefits go to the elderly of all incomes. The public share of nursing home expenditures of the elderly, 48 percent, is lower but still substantial. Because most of public

nursing home expenditures are under the Medicaid program, they go primarily to those who are poor or have exhausted their income and assets. Current public policy, in short, provides no clear basis concerning what level of public expenditures is appropriate or for whom.

What is clear is that alternative long term care financing strategies not only would cover different proportions of total costs, they would also cover the care of different people. Choosing among the strategies requires a rationale which clarifies whether to direct limited public benefits to particular groups--for example, the most seriously disabled, those without family to provide care at home, those who are married and have a spouse's welfare to protect, or those with least income and wealth. Value judgments, implicit or explicit, about who should pay for long term care are unavoidable. The debate about public financing of long term care would benefit, however, by focusing explicitly not just on what care should be covered--for example, front-end or back-end--but on whose care should be covered.

Notes

1. Percent distribution of annual nursing home costs by payer and the growth rate since 1980 were calculated from national estimates reported in Letsch, Levit, and Waldo (1988).
2. Public insurance should not be confused with "social insurance," which is sometimes used to refer to a public entitlement.
3. The 1985 National Nursing Home Survey reports average daily charges for private pay patients of \$48.09 for intermediate care facilities and \$61.01 for skilled nursing facilities (Hing, et al.) The Health Care Financing Administration's Skilled Nursing Facility Input Price Index estimates a 24.2 percent increase in nursing home costs between 1985 and 1990 (Donham and Vanek, 1989; Clymer, 1988). Annualizing and inflating the 1985 daily charges yields estimates of annual nursing home charges in 1990 of \$21,801 and \$27,658. The \$25,000 estimate used in the text is the approximate midpoint of this range.
4. The general form of the formula used to inflate and then discount costs for each individual is
$$\sum_{m=0}^{m=l} \text{COST}_{(1990)} \left[\frac{1+i}{1+r} \right]^{t+m}$$
where $\text{COST}_{(1990)}$ is \$25,000, i is the rate of nursing home cost

inflation (4 percent general inflation plus 1.5 percent excess nursing home cost inflation); r is the long run nominal interest rate (4 percent general inflation plus 2 percent real interest); t is the number of years till nursing home entry; and ℓ is total years spent in nursing homes. Full year costs so calculated were adjusted for fractional years where appropriate.

5. Cost estimates reported here are more than double the only published estimates, those of Cohen, Tell, and Wallack (1986). There are a number of methodological reasons why the estimates would differ, but two appear significant enough to account for most of the difference. Because they did not have data on lifetime use, Cohen, Tell, and Wallack used the average length of a single nursing home stay to an estimate of average lifetime use. This resulted in average use by users of roughly half the 2.8 years estimated here. In addition, the cost of care they used, \$55 per day, or roughly \$20,000 per year, is about 80 percent the annual cost used in the present estimates.

6. Alternative I, which is "optimistic" from the viewpoint of Social Security trust fund growth assumes 2.2 percent per year real wage growth and no growth in fringe benefits as a share of total compensation, which together are used to estimate excess nursing home inflation, and 3 percent average long run real interest rate, for a spread of 0.8 percent. Alternative III, which is

"pessimistic," assumes real wage growth of 0.8 percent per year, growth in fringe benefits of 0.3 percent (1.1 percent excess nursing home inflation), and 1.5 percent average long run real interest rate, for a spread of 0.4 percent.

7. While cautioning that considerably uncertainty about the demand for nursing home care remains, Fama and Kennell (1990) report that the range of estimates reported in existing research are that a 10 percent reduction in the price of nursing home care would result in an increase in nursing home use between 7 and 23 percent.

8. The effect of other coinsurance rates can be calculated by multiplying the percent of cost covered without any coinsurance by one minus any coinsurance rate.

9. Meiners (1983) assumes that individuals with incomes over \$10,000 and couples with incomes over \$15,000 could pay for long term care insurance. Based on this assumption, he concludes that 18 percent of individuals and 37 percent of couples could afford insurance in 1980. Cohen et al. (1987) use income, asset, and expenditure data to estimate discretionary income and assume that 10-25 percent of discretionary income would be spent on insurance. They conclude that 19-68 percent of the elderly could afford private long term care insurance in 1984. Rivlin and Wiener (1988) make what they describe as "optimistic estimates" of private long term care participation. They estimate that by the year 2020,

between 25.4 and 45.0 percent of the elderly would own policies if everyone with more than \$10,000 in assets other than housing would pay up to 5 percent of income for insurance. If everyone owning a Medigap policy were to buy long term care insurance, they estimate that 63.7 per cent of the elderly would be covered. Using asset and income criteria, Wallack et al. (1990) estimate that 42 percent of today's elderly could afford private long term care insurance.

10. Assuming the same number of people will purchase public and private insurance may be inappropriate. Depending on the nature of the program and its relation to the private insurance market, more people may purchase public insurance for two reasons. Premiums for public insurance with the same benefits may be lower because it entails lower marketing cost than private insurance, which is sold to individuals through agents who receive commissions. In addition, public insurance would probably be sold to anyone who wanted to purchase it at, say, age 65. Whereas some applicants are precluded from buying private insurance due to preexisting health conditions or prior nursing home use, public insurance would not be subject to such underwriting exclusions.

11. According to one company's rate guide for 1989, at age 65 the annual premium for an indemnity benefit with a two year maximum and no benefit increase is \$110.20 per \$10 daily benefit. The premium for a \$70 daily benefit, which would cover just over the \$25,000 average annual cost, is therefore \$771.40. The corresponding

premium for a policy with no maximum benefit and 5 percent increases for 20 years is \$2,456.30. It should be noted that these policies have a 20-day deductible and require physician certification of need for nursing home care, making their coverage less extensive than the insurance policies simulated.

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Table 1: Projected Lifetime Nursing Home Use and Cost per Capita for Persons Turning 65 in 1990

	Men	Women	All
Probability of Any Use	0.32	0.52	0.43
Use (years)			
Users only	2.1	3.2	2.8
Entire cohort	0.7	1.7	1.2
Cost			
Constant 1990 Dollars	17,400	41,600	30,500
Discounted Dollars	15,900	37,500	27,600

Table 3: Aggregate Discounted Lifetime Nursing Home Cost for the Population Turning 65 in 1990.

	Men	Women	Total
Population Turning 65			
Number (thousands)	988	1,175	2,173
Percent of total	(45.9)	(54.1)	(100.0)
Aggregate Cost			
Dollars (billions)	15.9	44.0	59.9
Percent of total	(26.6)	(73.4)	(100.0)

Table 4: Percent of Expected Discounted Lifetime Nursing Home Cost Covered Under Public Entitlements

	Coinsurance	
	None	30 percent
Front end entitlement		
3 months	7.5	5.3
6 months	13.6	9.5
Back end entitlement		
2-year deductible	58.0	40.6

Table 5. Percent of Expected Discounted Lifetime Nursing Home Cost Covered by Private Insurance and Publicly-Administered Insurance

	Percent purchasing insurance		
	25	45	65
Publicly-administered Insurance*	17.5	31.5	45.5
Private insurance			
Two-year maximum coverage period, no inflation protection	4.0	7.2	10.4
Five-year maximum coverage period, 5 percent inflation protection for 10 years	10.5	18.9	27.3
Unlimited lifetime coverage, 5 percent inflation protection for 20 years	19.3	34.7	50.2

*Thirty percent coinsurance is assumed.