

Longlife insurance: A prototype for funding long-term care

by Thomas E. Getzen

"Longlife insurance" combines nursing home, home health, and deferred annuity benefits. It costs less than life care, allows the elderly to remain in their own homes, and protects assets. Adverse selection is limited because the plan is attractive to both frail and healthy elders. An analysis of 18,600 respondents in

the Social Security Administration's New Beneficiary Survey indicates that 67 percent of all retirees could afford a typical longlife insurance plan. However, less than one-half of all females living alone, 24 percent of minorities, and 8 percent of the disabled could pay privately.

Introduction

To be made powerless by sickness and poverty is at once the greatest fear of today's elderly and an inadvertent, but nonetheless inevitable, result of the current system of financing long-term care for most Americans. To obtain insurance from the source that provides 93 percent of nursing home reimbursement, Medicaid, this generation is forced to "voluntarily" divest themselves of their savings. A few of the elderly (currently 0.2 percent) avoid this situation by contracting for life care with nursing support in a retirement community. In most life care arrangements, a couple must pay substantial fees (approximately \$55,000 to enter and \$1,600 per month) and must leave their own homes—an option that is apparently still considered highly preferable to ultimate dependency on Medicaid. "Longlife insurance," a new option proposed here, allows the elderly to remain at home, costs less, and protects assets for future spending or for estates (Table 1). In a typical longlife plan, a couple retiring at age 60 would receive \$40 per visit for home health care, \$50 per diem for nursing home or hospital stays, and \$750 per month financial support, whether at home or in the hospital, after age 75, for a total premium of \$9,885 initially and \$119 a month thereafter. Longlife insurance is able to provide benefits that are large relative to premiums because adverse selection is limited and deferral of annuity payments allows accrual of interest as well as a reduction in number of people insured.

The elderly's wealth and health

The graying of America, with its implied increase in health care demand, has become familiar (U.S. Bureau of the Census, 1984). There is a quite recent but growing recognition of the fact that the elderly not only live longer, but now have more money (Preston, 1984; Ricks, 1985). What is still needed is an awareness that the increase in wealth implies equally significant changes in health systems. The spread of wealth, the "middle classing" of the elderly

if you will, has been as much a cause of the long-term care (LTC) financing crisis as has the increase in lifespan.

A crisis exists in LTC because expectations for care have grown faster than has the system for financing care. If the elderly are largely impoverished, as they often were in the past, then care is financed by government revenues or charity, expectations are low, and choices are limited. The only alternatives open to the old are the struggle to remain living "at home" or custodial institutionalization "in a home" (which is not usually chosen by them but forced upon them).

With wealth comes the freedom to choose a range of living situations, to obtain support for a comfortable life with partial physical dependence ameliorated by financial independence. Some of the options available to the elderly who have a degree of financial independence include housekeeping help, meal delivery, day care, and housing alternatives such as retirement communities, clustered housing, and seasonal housing in a warmer/cooler climate (Morrison et al., 1986; Harder et al., 1986; Tell et al., 1987).

The income of the elderly will increase much more rapidly than the income of the government between now and the year 2000 (Leutz, 1986). During the period 1963-83, the income of the elderly grew 11 percent annually, from \$33.8 billion to \$265.4 billion; at the same time, Federal revenues grew at only a 9 percent rate. From this trend we can adduce the case for private LTC insurance (Meiners, 1983; U.S. House of Representatives, 1984). The aggregate demand for health care is dependent primarily upon per capita income levels and will rise more than proportionately as retirees increase in number and become wealthier (Getzen, 1985). Government funding, on the contrary, will be constrained by gross national product (GNP) growth rates, an evident popular desire to reduce taxes, and the need to work off a massive deficit. The public share of spending for nursing home care has been reduced at both the State and Federal levels since 1975 (Waldo, Levit, and Lazenby, 1986). Privatization has been occurring de facto. Yet voluntary insurance plans, the mechanism of choice for both acute hospital and ambulatory care, account for less than 1 percent of nursing home expenditures.

As taxes are unlikely to pay for the increase in LTC

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demand by the elderly, it will have to be paid for out of their own rising incomes and wealth (Jennings and Krentz, 1984). However, to convert demand into actual spending, some financing mechanism is required to arrange prepayment and to pool risks. No fully acceptable form of LTC insurance currently exists (Wiener, Ehrenworth, and Spence, 1987). Instead, we are saddled with an obsolete system (one-half Medicaid, one-half self-pay) based on the outmoded "at home or in a home" dichotomy. The newly legislated expansion of Medicare to cover catastrophic expenses (U.S. General Accounting Office, 1987) does not expand nursing home reimbursement to any significant degree, although these are the expenses most likely to impoverish the population over the age of 65 years (Gornick et al., 1985; Rice and Gabel, 1986). To date, it has been far more difficult to develop new types of coverage for LTC than to simply expand Medicare for catastrophic hospital and physician expenses, an area already relatively well covered by private "medigap" insurance.

Life care or permanent retirement homes are in part a method of risk pooling to provide a form of insurance for the elderly (Winkelvoss and Powell, 1984; U.S. Senate, 1983). Medical care and a specified amenity level or standard of living are prefunded. Life care does not meet the needs of those who wish to stay in their own homes, nor of those who desire mobility (Tell et al., 1987), but it has proven rewarding and satisfactory for most residents. Established facilities often have long waiting lists for entry. The contracts residents must sign, binding them to a single facility, obviously limit flexibility and may also pose problems if the community deteriorates. New financing methods such as life care, social health maintenance organizations (S/HMO's), life care at home, and indemnity LTC insurance options are compared with longlife insurance in the discussion section of this article.

Today's wealthier elderly expect their higher standard of living to be maintained even when illness occurs. A higher level of comfort is anticipated from the beginning of retirement and throughout maturity. This means that financial planning must include an allowance for amenities, even when nursing support is needed for daily activities.

Intermediate living arrangements, between self-sufficiency and institutional support, necessarily involve variations in the level of amenities as well as variations in the level of functioning. These two dimensions of quality are often confused or commingled, probably because improvements in either amenities or functioning usually require an increase in number of employees per resident. Another reason for this confusion is that a lack of amenities can have a profoundly negative psychosocial impact, which can lead to a loss of function. Although there is general agreement that government funds should be used to ensure that no one is deprived of the personal care required to maintain a certain level of functioning, there is no desire to subsidize personal care to

maintain levels of comfort. The ensuing conflict over whether a jacuzzi is an instrument of rehabilitation or an accoutrement of gracious living is inevitable, because, of course, it can be both. This inability to separate quality of life into functional (medical) and personal (amenity) components is a major barrier to the provision of typical reimbursement insurance.

Plan description

Longlife insurance is a mechanism to provide for comprehensive financial support throughout retirement regardless of the state of health. Combining protection from the risks of chronic illness with protection from the risks of extended longevity reduces the adverse selection that plagues both LTC insurance and annuities (Getzen and Elsenhans, 1986). Longlife is the financial equivalent of a life care community without bricks and mortar. Participation does not restrict one to a specific community residence, involves a much lower cost, and may begin at a less advanced age so that more risks are covered.

In the prototypical longlife contract, an employee and spouse, each 60 years of age, agree to pay an initial lump sum of \$9,885 and additional monthly premiums of \$119 for the duration of the longlife contract (Table 1). In return, they receive \$50 per day after the first 45 days in any level of facility that requires continuous nursing care (hospital, skilled nursing facility [SNF], or State-licensed nursing home). They receive benefits of \$40 per visit after the first 30 days for medically necessary home health care. Beginning on the 76th birthday, the couple receives payments of \$750 per month, even if both are at home and healthy.

Table 1
Basic longlife insurance plan for a couple 60 years of age

Benefits	Premiums	
	Initial	Monthly
\$40 per visit for home health care	\$9,885	\$119
\$50 per diem in nursing home or hospital		
\$750 per month additional to all after age 75		

The preferred method of funding such a plan is to have the initial sum and monthly premiums taken as distributions from employee retirement benefits. The funds have already been set aside, administrative costs are lower for organized-group purchase, and retirement is a natural transition that forces planning and financial commitments. However, individual purchase would encourage the offering of a larger range of options and would provide a larger market for insurers.

Neither illness nor extended life payments would be subject to coordination-of-benefit provisions, because they are indemnity payments for general costs of

living, rather than reimbursement for services or expenses. A cost-of-living rider, increasing payments according to the rise in the Consumer Price Index (CPI), would be electable annually at an additional premium. A guaranteed-return-of-premium clause would return to the participants' estate all initial and monthly payments in excess of benefits paid in the event that both died early.

Longlife insurance can provide benefits that are large relative to premiums, because adverse selection is limited and deferral of annuity payments allows accrual of interest as well as a reduction in the number of annuitants through mortality. The methodology for actuarial projection of premiums is outlined briefly here, then presented in greater detail in a "Technical note" at the end of the article.

Mortality

Mortality and the fraction of males and females (up to the age of 85 years) alive is taken from the life tables as presented in *Vital Statistics of the United States, 1980* (National Center for Health Statistics, 1984). To estimate the fraction living to the age of 110 years, mortality was extrapolated using the 1983 Individual Annuity Mortality Table as reproduced in the *1984 Life Insurance Fact Book*, (American Council of Life Insurance, 1985). With open enrollment, the plan would attract both those who expect to use the institutionalization benefit and have an above-average mortality risk, and those who expect to receive the annuity and have below-average mortality risk. During the early years of plan operation, it is assumed that these two selection effects would offset each other, so that mortality would approximate that of the U.S. population as a whole. Later, the longer lived will predominate; hence the lower mortality annuitants' tables are used. The procedure used here treats couples as if they were composed of a statistically independent male and female. Although it is known that married persons tend to live longer than unmarried persons and that their deaths are not independent, conversations with the Society of Actuaries and with a number of practicing actuaries who are responsible for many annuities indicated that this procedure of assuming independence in mortality is standard, and that no useful joint mortality tables are publicly available.

Utilization rates

Nursing home utilization rates used in this study are based on the 1985 National Nursing Home Survey (Hing, 1987). To account for adverse selection in the early years of the plan, the rate for persons 65-74 years of age is increased by 50 percent, to 1.875 percent (e.g., 1,875 person-years of utilization per 100,000 insureds 65-74 years of age). The rate for those 75-84 years of age is taken to be the same as that of the U.S. population as a whole, 5.77 percent. The rate used for persons 85-94 years of age is that of all the U.S. population 85 years of age or over, 21.94

percent. The rate for those 95-110 years of age is increased to 50 percent to account for the effects of guaranteed insurance upon what is currently the most impoverished group of elderly (no separate estimate for persons 95 years of age or over is provided in Hing [1987]). To estimate a rate for persons 60-64 years of age, it was assumed that the increase from the 60-64 age group to the 65-74 age group was proportional to the increase from the 65-74 age group to the 75-84 age group. This rate was then doubled to 0.54 percent to account for adverse selection.

Home health care use is assumed to be 150 percent of nursing home use. Although several studies of home health need and utilization have been made (Branch et al., 1984; Berk, 1985; Callahan, 1985; U.S. General Accounting Office, 1985; Liu, Manton, and Liu, 1985; Benjamin, 1986; U.S. General Accounting Office, 1986), no reliable figures for actuarial projection are available. The assumptions used here would be more than 5 times the current Medicare utilization rate of 1.3 visits per enrollee and considerably above the total utilization rate for the industry. However, projection of a much higher rate is consistent with both present trends and the judgment of most experts. Of those with any home health care use, more than one-half use fewer than 30 visits and hence would not qualify for benefits. Among those who do qualify, the average number of visits is 82 (Callahan, 1985). The plan would pay a maximum of \$40 each day, even if there were two or more home visits in a single day.

Other assumptions

The interest rate determines how rapidly the invested premiums grow to provide reserves to cover the much larger payout as insureds age. As of October 31, 1988, the index yield for Barron's Best Grade Bonds was 9.42 percent, and for 30-year Treasury bonds, 8.91 percent. Return on investment of accrued reserves is estimated to be 9 percent per annum for the duration of the policy. Marketing, administrative costs, and underwriting reserve/profit are estimated at 15 percent for group enrollment. Death benefits (guaranteed return of premiums) are paid only if both participants die before benefits paid out exceed initial and monthly premiums paid in, which is projected to occur for some 13 percent of couples in which both spouses die before reaching the age of 77 years.

Actuarial projections for a single male yield plan costs equal to 58 percent of those for a couple. Costs for a single female are 80 percent of those for a couple. Females are more likely to be institutionalized as they age, and are more likely to live long lives, both of which increase the cost of the plan. The cost for a married couple is less than the combined cost for two single people (a male and a female), because the annuity payment to a couple is the same as that for a single person, \$750 per month, and only the additional risk of institutionalization and a small increase in joint survivorship must be paid for. It is

Table 2

Premiums for longlife insurance, by type of benefits and actuarial assumptions

Benefits after age 75	Premiums	
	Initial	Monthly
Standard plan	} \$9,885	\$119
\$50 per day nursing home use		
\$40 per for visit home health care		
\$750 per month annuity		
More generous plan	} \$18,556	\$198
\$100 per day nursing home use		
\$75 per visit for home health care		
\$1,200 per month annuity		

Actuarial assumptions:

- Plan purchased by couple 60 years of age.
- Nursing home use is 200 percent of the U.S. average for persons 60-64 years of age; 150 percent of the U.S. average for those 65-74 years of age; 100 percent of the U.S. average for those 75-84 years of age; and 150 percent of the U.S. average for those 95 years of age or over.
- Home health care use is equal to 150 percent of nursing home use.
- Mortality rate is equal to U.S. average.
- Administrative expense is 15 percent of the total premium.
- Return on invested premiums is 9 percent.

not clear whether differential sex premiums would be allowable; therefore it is probably most useful to think of these figures as guidelines in rating a group, and individual cost sharing is done on a unisex basis.

A more generous plan with \$100 per day in nursing home benefits, \$75 per visit for home health care, and a \$1,200 per month annuity might be more attractive to some participants (Table 2). The required premium for a couple (60 years of age) would be \$18,556 initially and \$198 per month. Raising the annuity level is about three times as expensive per dollar of coverage as raising the nursing home benefit level, and eight times as expensive as raising the home health benefit. For all premiums, the allocation based on the present value of expected payments is: load, 15 percent; nursing home benefit, 19.3 percent; home health care, 6.5 percent; annuity, 56.8 percent; death benefit, 2.4 percent.

The cost of long-term care has risen dramatically over the last decade and will continue to do so. To enable benefits to keep pace with an assumed 6 percent annual rate of inflation would require that the monthly premium be increased by 8 percent. The actuarial projection of a 6 percent increase indicates only a 6.25 percent increase in costs, but an electable cost-of-living rider would be subject to some adverse selection.

The effect of changing assumptions

Changes in contract provisions or in the actuarial assumptions used to project premiums will change the cost of the plan (Table 3). Beginning annuity payments 1 year earlier, at the participants' 75th birthday, would raise premiums by 9 percent. Increasing the nursing home benefit from \$50 per day to \$60 would increase premiums by 6 percent, and

Table 3

Effect on longlife premiums of various policy options and assumptions

Option or assumption	Percent change in premiums
Causing premium increase	
Begin annuity payments 1 year earlier	+9
Raise nursing home daily rate from \$50 to \$60	+6
Raise home health care payment per visit from \$40 to \$50	+2
Raise monthly annuity payment from \$750 to \$1,000	+20
Increase of 50 percent in nursing home use	+11
Increase of 50 percent in home health care use	+4
Dual payments to all insured	+12
Use 1983 extended annuity life tables	+14
Lower return on investment from 9 percent to 8 percent	+15
Causing premium decrease	
Raise return on investment from 9 percent to 10 percent	-13
Reduce nursing home daily payment from \$50 to \$40	-6
Eliminate home health care benefit	-10
Reduce monthly annuity from \$750 to \$600	-12
Eliminate guaranteed return of premiums	-3
Causing annual increase in monthly premium only	
Coverage for 6 percent annual inflation	+8
Premium shortfall ¹	+2

¹Shortfall caused by, e.g., 15 percent increase in overhead, 20 percent increase in nursing home use, and 30 percent increase in home health care use.

increasing the home health care benefit from \$40 per visit to \$50 would increase premiums by 2 percent. Raising the annuity benefit from \$750 to \$1,000 per month increases premiums by 20 percent. Reducing the annuity benefit to \$600 per month lowers premiums by 12 percent. Reducing the nursing home care per diem rate to \$40 reduces premiums by 6 percent. Eliminating home health care benefits would reduce premiums by 10 percent. Eliminating guaranteed return of premiums (death benefits) would reduce premiums by 3 percent.

Raising the assumed return on invested reserves from 9 to 10 percent reduces cost to participants by 13 percent; lowering investment return to 8 percent raises premiums by 15 percent. A 50-percent higher rate of nursing home utilization increases costs by 11 percent, and 50 percent higher home health care utilization raises costs by 4 percent. These effects are moderated by the offset between LTC and annuity benefits. The couple receives home health care or nursing home care payments for each qualified beneficiary (e.g., a maximum of 2 times \$50, or \$100 per day) but ceases to receive the smaller annuity benefit for those care days. To provide dual payments to the insured parties, so that annuity benefits would continue (e.g., a maximum of 30 times \$100 plus \$750, or \$3,750 per month) increases required premiums by 12 percent. Using the longer lives of annuity life tables for projections, rather than the

U.S. standard life tables, increases the required premium by 14 percent.

The estimated percentage changes in costs reported in this section apply to the initial and monthly premiums for a couple at the age of 60 years. Similar but slightly different (some higher, some lower) percentage adjustments would be required for different payment plans or participants: all-lump-sum plans, all-monthly plans, or more-generous-benefits plans, plans for individuals rather than couples, etc.

Adjusting the monthly premium over time would enable plan administrators to compensate for forecast errors, changes in utilization, and other effects as they become manifest. If administrative/marketing expenses exceed the estimates by 15 percent, nursing home care utilization by 20 percent, and home health care utilization by 30 percent, the shortfall could be entirely offset by increasing monthly premiums by 2 percent annually beginning in the fifth year.

Ability to pay

Do the elderly have the financial resources to sustain a market for LTC plans costing more than \$10,000? They have little choice, unless they intend to face impoverishment and existence on Medicaid benefits, if declining health requires institutionalization—a risk that will become reality for 25-50 percent of all elderly persons (McConnel, 1984; Cohen, Tell, and Wallack, 1986). If one does not purchase a deferred-annuity plan such as longlife, some other asset must be set aside to provide money in case one wishes to celebrate a 90th birthday in even modest style. Refusal to make financial plans does not mean that the problems of advanced old age will be avoided. Such a failure to confront these possibilities merely makes one a dependent. The rising wealth and income of the elderly that have raised the expectations of long-term supportive care obviously have also provided greater means for private payment. Average before-tax income of the elderly has more than doubled since 1950 when measured in constant dollars, outstripping the economic gains of younger persons (Preston, 1984; Clark et al., 1984). More importantly, the elderly are the wealthiest segment of the entire population. According to the 1983 Federal Reserve Board's Survey of Consumer Finances, the 65- to 74-year age group had an average net worth of \$125,284 and financial assets of \$65,339, more than any other age group (Avery et al., 1984)(Table 4).

Currently the elderly spend about \$1,100 annually, 9 percent of their disposable income, on health care (Kovar, 1983; McConnel and Deljavan, 1983; Schrimper and Clark, 1985). What they can "afford" in premiums for a comprehensive plan such as longlife is a difficult question that ultimately hinges on consumers' choices in the marketplace (U.S. Department of Labor, 1980; Jacobs and Weissert, 1984; Cohen et al., 1987). About 50,000 persons chose life care communities in 1983, or 0.2 percent of the

Table 4
Financial characteristics of the elderly, from a U.S. sample, by type of household: 1983

Type of household	Mean income	Mean financial assets	Mean net worth
Head of household 65-74 years of age	\$21,818	\$65,339	\$125,284
All households surveyed	\$26,259	\$27,365	\$66,050
Households with elderly head as a percent of all households	83	238	190

SOURCE: (Avery et al., 1984).

elderly population (Laventhol & Horwath, 1986). However, this figure is growing rapidly and demand far exceeds the supply of available facilities. Powell, Rose, and Sims (1986) state that life care is affordable to a much larger percentage of the market than is currently being served, "probably not less than 10 percent and may be as large as 25 percent or more." Winklevoss, an actuary who has performed the most comprehensive and widely cited financial study of life care financing, says that the fees currently charged (median: \$55,620 to enter and \$1,604 per month for a couple in a two-bedroom apartment [Laventhol & Horwath, 1986; Graham, 1986]) "are within the financial grasp of the majority of individuals over age 70" (Winklevoss and Powell, 1984. Cohen et al. (1987) use a measure of discretionary income and estimate that the affordability of life care, insurance, and other prefunding mechanisms would range from 2 to 89 percent of the elderly, depending on the assumptions used.

A comprehensive picture of the financial position of retirees is contained in the Social Security Administration's New Beneficiary Survey (Maxfield, 1983; Social Security Administration, 1986). The data in this study are based on 2-hour in-person interviews of 18,600 participants carried out by the Institute for Survey Research at Temple University and released to the public in April 1986. The study's findings of mean elderly household income of \$23,000 and net worth of \$110,000 are generally consistent with surveys undertaken by the Census Bureau (U.S. Bureau of the Census, 1984) and by the Federal Reserve Bank (Avery et al., 1984). Data on the income and wealth of married couples, single males, and single females in the survey are shown in Table 5 by deciles. That is, the figure of \$24,200 in the "couples income" column, sixth decile row, means that 60 percent of all married couples had incomes of \$24,200 or less.

Most retirees are wealthy enough to purchase longlife insurance, but of course would want to reserve some assets for current living expenses (Cohen et al., 1987). It was assumed in this article that to qualify for coverage, a person or household could apply no more than one-quarter of their assets and one-tenth of their income toward the longlife premium. Using this model with the New Beneficiary Survey data, it is estimated that two-thirds of retirees

Table 5

Distribution of income and wealth among the elderly: United States, 1982

Decile	Annual income			Financial assets			Total net worth including house		
	Couple	Single male	Single female	Couple	Single male	Single female	Couple	Single male	Single female
First	\$8,900	\$3,800	\$3,700	\$0	\$0	\$0	\$11,200	\$0	\$0
Second	12,200	5,300	5,000	1,200	0	0	30,700	0	800
Third	14,800	6,500	6,200	6,000	0	0	46,900	2,200	8,700
Fourth	17,300	8,400	7,500	14,400	900	1,100	61,800	11,000	19,800
Fifth	20,500	10,400	8,800	26,100	5,200	4,800	81,400	20,500	31,900
Sixth	24,200	12,900	10,400	44,200	12,600	10,400	106,800	41,000	44,600
Seventh	29,200	16,100	12,400	69,500	24,700	19,800	140,700	69,800	59,900
Eighth	37,300	21,600	15,900	114,000	55,000	34,600	197,000	102,300	81,800
Ninth	52,500	33,700	21,600	256,500	117,000	68,500	360,000	193,000	126,000
Mean	(28,746)	(16,934)	(11,832)	(126,980)	(52,338)	(27,908)	(186,855)	(85,496)	(55,268)

SOURCE: Office of Research and Statistics, Social Security Administration: Unpublished data from the 1982 New Beneficiary Survey.

could afford longlife insurance. Although that number includes more than 79 percent of couples, only 57 percent of single males and 47 percent of single females would qualify. The more generous plan, which provides a \$100 per diem payment for nursing home care, \$65 a day for home health care, and a \$1,000 per month annuity, could be afforded by more than one-half of married couples (57 percent), 48 percent of single males, and 41 percent of single females. More detailed estimates of affordability for many types of retirees under a variety of assumptions have also been prepared (Getzen and Walters, 1987).

Private funding to cover extra living expenses and nursing home care is thus clearly feasible as a broad-based strategy. However, there remains about one-quarter of the population, including more than one-half of the elderly females who were single, divorced, or widowed at the age of 65 years, three-quarters of all minorities, and 92 percent of the disabled, who would be dependent on government, charity, or family for care. Fewer resources and greater need dictate some adjustment. Note that this disproportionate burden does not originate with longlife or related insurance proposals, but reflects the economic realities of today's disadvantaged elderly.

What government can pay for

Nursing home reimbursement currently accounts for 38 percent of Medicaid expenditures (Waldo, Levit, and Lazenby, 1986), and much of that is for individuals who might never have needed Medicaid in the first place. If one-half of those who qualified chose to obtain longlife insurance, there would be 400,000 new participants each year and Medicaid LTC expenditures would be substantially reduced.

Fully adequate LTC coverage for all elderly persons would cost much more than the government is now able or willing to spend. As previously mentioned, the Medicare Catastrophic Coverage Act of 1988 does not cover nursing home care reimbursement (U.S. General Accounting Office, 1987). "Medical Individual Retirement Accounts," as proposed last year by Department of Health and Human Services Secretary Otis Bowen, would not provide any risk pooling and thus would not be a form of insurance. Nor is it clear

how using such a funding mechanism could suddenly generate substantial new savings at an early age so that a 3-year nursing home stay, costing approximately \$60,000, could be paid for.

Government can and will pay to prevent impoverishment from interrupting needed health care. But government is not likely to fund a substantial rise in living standards for those poor who become ill or disabled. Attractive programs such as adult day care, which improve quality of life and permit the elderly to remain at home, are expensive options that are also unlikely to be funded (Harder, Gornick, and Burt, 1986). Already the reimbursement rates available under Medicaid are very modest. The "Medicaid nursing home game" must therefore be played out under a constantly evolving set of rules (Gilman, 1986). Currently, a typical pattern is for a patient to qualify to remain in a home by paying privately (building a "reserve" of sorts) for 2 years, after which time the facility will accept the inadequate Medicaid rate until death. Frequently, only "good" (that is, relatively healthy and less costly to care for) patients are allowed to stay. Of course, the patient's family must have successfully completed transfer of assets out of the patient's name so that he or she qualifies as impoverished.

There is no real fraud here, only a web of formal dissembling. Such borderline deception destroys respect for the law and undermines the morality of charitable provision of care. That so many are forced to compromise their principles is evidence that adequate private mechanisms for insuring long-term care do not exist.

Alternative financing methods

The most pertinent comparisons are between longlife insurance, life care communities, and existing LTC policies written by insurance companies. Wiener, Ehrenworth, and Spence (1987) made a detailed analysis of 31 insurance plans. All offered indemnity benefits, as does longlife. All were limited to a maximum stay (usually 3 years or less); longlife is unlimited. Wiener et al. characterized these first-generation policies as restrictive, expensive, and unclearly defined with regard to benefit levels. LTC

insurance is a piecemeal approach that separates one event—nursing home admission—from the spectrum of care required by a group advancing in age. Limiting benefits to 3 years makes LTC insurance primarily a method for covering the expenses incurred between nursing home admission and the commencement of Medicaid coverage. With typical LTC insurance, long stays would begin as private pay and convert to Medicaid reimbursement, much as they do now. LTC insurance is still based primarily on a medical insurance model of well defined acute events of limited duration. As such, it should be regarded as an important initial step, leading to another stage, rather than as a final solution. The advantage of LTC insurance is that it is a known product with defined risks and limitations—an incremental step beyond medigap that many insurance companies and employers might be willing to take.

Life care offers the advantages of community living with graded levels of care as health declines. The promise of improved quality and efficiency through voluntary managed care has been fulfilled in some facilities, leading to high resident satisfaction combined with low nursing home utilization rates. The contractual bonding to a particular institution provides both the strengths and weaknesses of life care. Residents must give up some freedom as they leave their own homes. Difficulties will arise if the community turns out to be not to their liking or if the community deteriorates. It is impossible to provide a large group of employees with life care the way one would provide insurance; each situation is particular and unique. Residents are unlikely to enter a community prior to age 70 and are unlikely to commit financial resources until the reality of need is pressing. The opportunity to prefund and pool risks is thus more limited.

As one ages, the distinction between living expenses and health care expenses becomes ever more arbitrary, as more and more support is required to live life fully. Longlife insurance has graded benefits that increase in step with demonstrable need, linking financial support at home and support in an institution. The problems of inappropriate utilization and benefit definition are by no means eliminated, but they are ameliorated by an integrated benefit structure. The actuarial benefit of reduced adverse selection occurs because the benefit package is broadened to appeal to most retirees, and because the annuity and insurance risks tend to offset each other. Longlife extends retirement financial planning to include an element of risk pooling in the nursing home care and home health care coverages.

The advantages of life care, S/HMO's, and other supportive programs that manage care are not incorporated in the longlife plan, but are made more widely available because stable financing is established before such care is needed. These service programs cannot perform the group financing function because they are particular and personal, unlike an insurance/annuity contract, which can be negotiated for thousands of employees in different locations, and

because they cannot be adequately premarketed at retirement to allow compounding of financial resources and risk pooling. Medicaid is explicitly a program designed for indigency, and therefore it is inappropriate for it to be used as the major funding source for most people. Medicare is universal in coverage. However, it is not clear that the elderly are best served by financing mechanisms that enforce uniformity. Nor is it clear that Federal funds, in the age of the deficit, will be able to provide high quality care across a wide range of living situations to all Americans. A major difficulty in marketing most private LTC insurance is that it pays only for nursing homes—admission to which is viewed as a sometimes unavoidable but always bad outcome. The elderly do not desire to make it easier for themselves to enter a nursing home. When this does occur, most people count on the government as a payer of last resort. Risk denial and policy restrictions make it appear that one will pay for but probably not receive any benefits. Furthermore, the benefits, if paid, are more likely to help the heir or the State than the insured.

The comprehensive benefits of longlife insurance do create a major problem: the plan is expensive. It is designed for the 30 to 70 percent of retirees who can afford to privately prefund long-term care; it does not address the problems of the poor. It cannot become a universal funding source and may, like all private insurance plans and life care arrangements, serve to exacerbate inequalities of care. The removal of middle class LTC beneficiaries from the Medicaid pool could make it easier to further reduce the level of benefits and could hasten the development of a two-tiered system of care. It is also possible that increasing private funding would reduce pressures on the Medicaid budget, leading to improved benefits. More importantly, in an active private market, services must be made attractive to paying patients and will tend to increase the average level of quality over time.

At present, the status of longlife insurance is still that of a promising concept. Although versions of the plan have been presented to several insurance companies, health care professional associations, employee groups, and trade publications, the move from strong interest to implementation has not yet been made. Flexibility in the monthly premiums could accommodate a wide range of actual utilization and mortality experience. Yet the open-endedness of a 30-year actuarial liability is such that perhaps only a group willing to risk some payment of benefits in excess of premiums to its own membership would initiate a longlife plan.

Discussion

Longlife insurance, providing a daily payment of \$50 during institutionalization, \$40 for home health care services, and a monthly living support stipend of \$750 after age 75, would solve the major financial problems of aging for that 70 percent of Americans who have pensions or savings adequate to take care of themselves. In addition, it would grant them a new

freedom to enjoy the extended long life that modern medicine has made available. More than 50 percent of elderly Americans could afford the more generous \$100 nursing home, \$75 home health care, and \$1,200 monthly annuity benefits. By prepaying at retirement for expected future illness and living expenses, catastrophic losses can be covered at moderate cost, and a financially comfortable "old" old age assured, while assets are released for use during the earlier, more active years. Integration of expected LTC and living assistance costs into individual financial planning is vital to maintaining independent lifestyles and estate values. Insurance rather than a residential life care contract is necessary for those who wish to retain mobility and a full range of options in living arrangements. Insurance also appears to be less expensive.

By privatizing LTC financing for the elderly, who have become the wealthiest segment of American society, Medicaid expenditures could be reduced and reserved for the most needy. Two hundred years of social and economic change have been required to make most elderly Americans solidly middle class. Persisting in the use of a reimbursement mechanism designed for indigency is no longer acceptable or equitable. The current Medicaid arrangement for long-term care is now widely recognized as providing unsatisfactory service, misallocating subsidies, and encouraging fraud. The rigidities of Federal and State regulation limit the financing of alternative modes of support, such as community living arrangements or adult day care, which are greatly preferred. Longlife insurance meets a clear need for a group with the market power to pay for it. Risk pooling and long-term contracts require large groups for the existence of a market with actuarial and financial soundness. Dissemination of the longlife idea by a major employer or insurance company would generate the enrollment required to achieve another success in the financial revolution of the elderly.

Technical note: Actuarial calculations and assumptions

The account balance at purchase in year 0 is equal to the initial premium less a 15 percent administrative load. For ease of exposition, we assume that both persons in the insured couple reach their 60th birthdays on the same day, 1 day after purchase.

Year 0, age just prior to 60th birthday

Balance after administrative load
 $\$9,885 \times .85 = \$8,402$

During the first year, increases in account balance come from interest at 9 percent, and 12 monthly payments of \$119, less a 15 percent administrative load. Premiums are obtained only from those couples still alive, here estimated by taking the number of females alive at the end of the period (.9912), and

adding to it the number of widowed males still alive, assuming that the deaths of spouses are independent $((1-.9912) \times .9829)$. Of the females and males still alive (.9912 and .9829, respectively), 0.54 percent of them are in nursing homes at a cost of \$18,200 $(364 \times \$50)$ each, and 0.81 percent have more than 30 home health visits, costing \$3,280 $(82 \times \$40)$. For the .015 percent of couples in which both spouses have died, death benefits are equal to the sum of all premiums, less benefits already paid. It is assumed that nursing home and home health benefits paid are equal to the average for all couples, plus 60 days of illness prior to death.

Year 1, age 60
 Balance plus interest $\$8,402 \times 1.09 = \$9,158$
 Premiums $12 \times \$119 \times .85 \times (.9912 + (1 - .9912) \times .9829) = \$1,214$
 Nursing home benefits $\$18,200 \times .0054 \times (.9912 + .9829) = < \$194 >$
 Home health care benefits $\$3,280 \times .0081 \times (.9912 + .9829) = < \$52 >$
 Death benefits $\$9,885 + 12 \times \$119 - \$194 - \$54 - \$5,400 \times .00025 = < \$1 >$
 Balance at year end $\$10,124$

The same calculation is repeated for the next 15 years, with a smaller fraction alive, and a larger percentage institutionalized. At the end of year 16, during which the couple is aged 75, the account balance is \$53,278. During the 17th year, increases come from interest and premiums, decreases come from nursing home, home health, and annuity payments to all "couples" in which at least one member is still alive (females + widowers), and death benefits to the 2.09 percent of couples in which the remaining spouse dies. The percentages of females and males alive are .7242 and .5376 respectively. The utilization rate for nursing homes is 5.77 percent, and benefits are \$9,200 each $(\$18,200 \text{ less } \$9,000 \text{ annuity})$. For home health care, utilization is 8.66 percent and benefits are \$1,230 $(82 \text{ visits} \times \$15 \text{ } (\$40 \text{ less } \$25 \text{ annuity}))$.

Year 17, age 76
 Balance plus interest $\$53,278 \times 1.09 = \$58,073$
 Premiums $12 \times \$119 \times .85 \times (.7242 + (1 - .7242) \times .5376) = \$1,059$
 Annuity $12 \times \$750 \times (.7242 + (1 - .7242) \times .5376) = < \$7,852 >$
 Nursing home benefits $\$9,200 \times .0577 \times (.7242 + .5376) = < \$670 >$
 Home health care benefits $\$1,230 \times .0866 \times (.7242 + .5376) = < \$134 >$
 Death benefits $\$8,708 \times (.0209) = < \$182 >$
 Balance at year end $\$50,294$

These account balance changes continue apace with decreasing fractions alive and increasing nursing home

and home health utilization each year, until the end of year 50, at which point the couple has reached age 110, and all couples are presumed dead after their 111th birthdays. Initial and monthly premiums are adjusted so that final year end balance just exceeds \$0.

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