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The Rational Nonpurchase of Long-Term-Care Insurance

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Only a tiny fraction of the nonpoor population currently purchases private insurance coverage against long-term-care (LTC) costs. Studies generally attribute the failure to purchase private coverage to "unawareness" by potential purchasers of the benefits of coverage and a misperception that Medicare currently covers long-term care. I explore alternative reasons for failure to purchase coverage by well-informed, expected utility-maximizing risk-averse individuals for whom LTC is associated with a large increase in mortality and for whom family members represent an alternative source of care. There may be no demand for LTC insurance even if it is made available at actuarially fair premiums because the main consequence of coverage is to enhance the expected value of one's estate.

I. Introduction

There is very little private insurance protection against the cost of long-term care (LTC) in the United States. Only about 2 percent of nursing home costs were covered by private insurance in 1986 (Division of National Cost Estimates 1987). This is surprising since annual LTC costs in a nursing home are estimated to be about $22,000 per year for adequate quality care (Task Force on Long Term Health Care Policies 1987) and can be higher, while the annual likelihood that an elderly person will use a nursing home is relatively low, less than one in 10 for all elderly and still less that one in four above age 85 (Hing 1987). In contrast, nearly 70 percent of the elderly have purchased "Medigap" insurance coverage, which provides protection against the deductibles and copayments in the public Medicare policy

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(Scheffler 1988). The likelihood that some Medigap claims will be made in any year is high.

We seem to have here a familiar paradox in market insurance purchasing. The elderly fail to buy coverage against high-loss, low-probability events and yet do seek coverage against high-probability, low-loss events—exactly the opposite of rational insurance purchasing. Are there rational reasons for this seeming irrationality?

It is not hard to understand the rationality of purchase of Medigap coverage. Medigap is subsidized, in effect, because its purchase, though triggering higher Medicare benefits, does not add to the Medicare premium the individual pays. Nor is it hard to understand why low-income elderly do not purchase nursing home coverage. In all states the public Medicaid program provides nursing home coverage once a family's wealth falls below a certain level. Any private insurance benefits must be used before Medicaid will pay. It is easy to see that Medicaid, as a comprehensive insurance policy with a deductible equal to one's wealth, provides a close substitute, at a zero price, for private insurance coverage for low-wealth people.

What is most puzzling is why middle-class elderly, who typically do have some wealth to protect and who are the most frequent purchasers of Medigap coverage, fail to buy LTC insurance, even when the chance is low that they will spend down to Medicaid eligibility. One possible explanation is, of course, the phenomenon Kunreuther (1978) has noted in other insurance markets: a tendency to ignore low-probability, high-loss events that have not occurred recently. However, this sort of behavior has not been so common in health insurance (Hershey et al. 1984). In the extensive policy discussion of this issue that has occurred, the most common explanation is that the elderly are misinformed. A majority of the elderly, according to surveys, are under the mistaken impression that Medicare already provides long-term nursing home coverage (American Association of Retired Persons 1985). And even those knowledgeable about the limitation of Medicare are alleged to lack awareness of the probable need for LTC services. Indeed, the report of the federal Task Force on Long Term Health Care Policies (1987, p. 29) relies almost entirely on "lack of awareness" to explain what it terms "lack of demand." The comprehensive treatment by Davis and Rowland (1986, p. 91), in addition to discussing "underestimation of need" by nonpoor elderly, points to pricing problems, moral hazard, and adverse selection as reasons why private insurance is unlikely to "become a dominant force in the near future." But it alleges that "the purchase of private insurance to protect against impoverishment in a nursing home would appeal to some people" and that coverage in noninstitutional

settings is what most people would prefer. Finally, the Technical Work Group on Private Financing of Long-Term Care for the Elderly (1986) likewise attributes the small size of the current market for private insurance to the high cost of individual insurance and the emphasis on institutional care benefits, despite studies indicating that about a quarter of the elderly could "afford" insurance even at currently feasible premiums.

In this paper, I shall argue that there are other potentially important impediments to private demand for LTC insurance, impediments that would exist even if the insurance were offered at fair premiums. Even without loading and adverse selection, these impediments could well lead to very low insurance purchases even in markets in which risk-averse buyers are rational and appropriately informed.

The explanation I offer is one that takes into account the special features of chronic illness insurance and integrates it into a model of lifetime expected utility maximization. I show that the rational risk-averse individual may well choose to leave most if not all of his or her LTC expenses uncovered by insurance. Particularly if only conventional insurance that offers benefits based on contemporaneous medical care costs is offered, utility-maximizing behavior may well involve little or no insurance. This explanation does not depend on the existence of transactions costs, adverse selection, or inaccurate beliefs about the extent of Medicare coverage, which others have discussed (e.g., Friedman and Manheim 1988). I further show that there are some special types of insurance contracts that might be salable for LTC. But even in this case, I speculate that there are some intrafamily interactions that may inhibit the purchase of coverage.

I do not imagine that even these explanations can fully explain why private LTC insurance is very limited; they do permit LTC insurance to be rational in some circumstances. In addition to indicating what the circumstances conducive to coverage are, the discussion shows that the market for LTC insurance for the elderly is likely to remain relatively small, though probably not so small as it is at present. I also consider briefly whether there is a rationale for public subsidization of LTC insurance for the nonpoor, if the reasons for its current nonpurchase are as I have outlined.

II. What Does Long-Term-Care Insurance Protect?

I begin with a simple model of the illness process associated with chronic care. I assume that there are two types of illness, chronic and

acute. Medical care does not itself yield utility. Moral hazard is ruled out, and it is assumed that there is a unique quantity that constitutes appropriate "nursing home" care in the event of chronic illness.

Conventional health insurance does not cover long-term care for chronic illness. Instead, it covers medical expenses associated with acute illness. The individual who suffers an acute illness requires costly medical care; if this care is consumed, he or she has a high probability of recovering to normal functioning. The cost of acute illness can be viewed as a once-and-for-all reduction in the disposable income available for the future consumption the person truly values. Chronic illness, in contrast, is not cured. One way to represent its cost is to imagine that its main effect is to reduce the individual's capacity for normal functioning and household production. In addition, data suggest that elderly people with illnesses who enter a nursing home have much lower life expectancies compared with either those elderly who are not ill or those who have only acute illnesses, other things equal.

Let us first consider a simple case in which long-term or chronic illness implies a fixed expenditure per year of $\$X$ and from which there is no recovery or improvement. While the assumption of no improvement from a chronic illness is not strictly true, it is the case that less than 25 percent of the elderly admitted to nursing homes are discharged to their homes or families (Sekscenski 1987). We may also reasonably assume that chronic illness implies a substantial reduction in life expectancy. For example, the annual mortality rate for 80-year-old women is about 6 percent overall but was 27–30 percent among elderly of the same average age who were candidates for formal long-term care in a large-scale demonstration project (U.S. National Center for Health Statistics 1986; Applebaum et al. 1988).

The person is assumed to be without a spouse[1] and to have some money wealth $\overline{W}$ at the beginning of the planning period. In this initial case the person is assumed as well to have no other heirs and to make all decisions about insurance or care purchases himself or herself. We represent the expected lifetime utility function (EU) by

$$EU = \sum_{t=1}^{H} p_t^h U(C_t) + \sum_{t=1}^{H} p_t^s \overline{U}^s,$$

where p_t^h is the probability of surviving to period t in the healthy state, C_t is dollars of consumption in period t, p_t^s is the probability of surviving in the sick state, H is the maximum length of life, and $\overline{U}^s$ is the utility level if one is sick with chronic illness and consuming $\$\overline{X}$ worth

[1] It is estimated that approximately 84 percent of elderly nursing home residents are without spouses (Hing 1987).

of care per time period. In the sick state, all desired consumption is assumed to be furnished by the payment $\bar{X}$.

If perfect insurance markets are available, the lifetime expected utility maximization problem (from $t = 1$ onward) is to choose C_t in order to maximize EU subject to

$$\bar{W} = \sum_{t=1}^{H} p_t^h \cdot C_t + \sum_{t=1}^{H} p_t^s \cdot \bar{X},$$

where $\bar{W}$ is initial wealth. The solution to this problem will be to use $\bar{W}$ to purchase an annuity, but an annuity that pays $\$\bar{X}$ per time period if one is sick and $\$C_t$ if one is well.

However, such perfect annuity markets do not exist. It is more realistic to analyze a case in which no annuities are available. Suppose that $\bar{W} \geq S\bar{X}$, where S is the maximum number of periods the person will survive if sick; the individual initially has enough wealth to be able to pay his maximum LTC costs.[2] We capture the notion that the person is unlikely to be eligible for Medicaid by assuming that $S\bar{X}$ is small relative to $\bar{W}$. The maximand remains the same, but the budget constraint then becomes $\bar{W} \geq \Sigma_{t=1}^{H-S} C_t + S\bar{X}$.

If the person does survive long enough so that his wealth in period t falls to the level at which the constraint $W_t > S\bar{X}$ is not satisfied (i.e., if there is a possibility that nursing home expenses might exhaust one's wealth) and if the person will still consume $\$\bar{X}$ per year when chronic illness strikes, both the bankruptcy laws and the Medicaid program operate to ensure that utility in the illness state does not slip below $\bar{U}^s$.[3] That is, if the individual will receive $\$\bar{X}$ of care no matter what and if his estate cannot be negative, then, at worst, it is as if $W - S\bar{X} = 0$.

In this situation there will be no demand for nursing home insurance, even if it is offered on an actuarially fair basis. The reason is obvious: insurance premiums for coverage against X in any period will reduce C. Coverage will add to the bequest that would be left if the person dies after a chronic illness if wealth in any period exceeds SX; however, in this model bequests offer no utility. If wealth falls below $S\bar{X}$, private coverage substitutes for Medicaid. There is no demand for private insurance even if we assume that the person is risk averse and the occurrence of chronic illness is a random event. Insurance is not bought because the marginal utility of an additional dollar in the (lifetime) chronic illness state has been defined to be zero.

If the individual obtains no utility from bequests, Kotlikoff and Spivak (1981) have shown that, with annuities unavailable, planned

[2] In practice, S would vary with age.

[3] The Medicaid program pays for all nursing home care once the person has "spent down" wealth to approximately zero.

consumption declines with age and the expected bequest is positive.[4] Even with no utility from bequests, the individual's bequest will be relatively large at young ages and then decline with age, equaling zero at age H.

III. Variable Nursing Home Quality

There might be private demand for insurance if the "quality" of nursing home care is variable. Instead of X being a fixed level of annual expenditure for a nursing home stay, one might imagine that the desired level would be an increasing function of initial wealth, so that $X = X(W)$. The level of spending provided by Medicaid is fixed at $\bar{X}$.

Formally, we can simply substitute X for $\bar{X}$ in the maximand and the constraint of the previous problem and solve for the optimal pattern of C_t and X_t, both conditional on the state of health. In this case, however, as the person ages, there may be demand for insurance to finance the difference between $\bar{X}$ and X. However, buying insurance coverage that pays for just this amount, as a supplement to Medicaid, is not permitted by the Medicaid program. That program takes prior private insurance coverage into account before paying Medicaid benefits and will in any case pay no more than $\bar{X}$. Consequently, the person who desires a greater level of X must be prepared to forgo any Medicaid benefits.

Insurance will be purchased if the expected utility level with insurance is greater than the expected utility level without insurance. Consider the effect on expected utility of buying insurance that will pay some amount $X > \bar{X}$. As before, with no marginal value attached to bequests, there will be no demand for insurance for periods in which wealth at the beginning of the period exceeds X. This means that if insurance is to be purchased, it will cover the last years of life. Let us therefore consider the purchase of insurance in the last year of life ($t = H$) and let us assume that the wealth level W_H (which will all be spent on consumption C_H if the person does not use a nursing home) is less than $\bar{X}$.

If $\hat{p}^s_H$ is the probability of using a nursing home during period H, the net fair premium for coverage that permitted the person to consume X_H of nursing home care would be $P = \hat{p}^s_H(X_H - W_H)$. However, the net expected value of the benefits to be received from purchasing insurance would be $\hat{p}^s_H(X_H - \bar{X})$ since Medicaid would have paid $\bar{X}$ in any case. (Conversely, the net value of Medicaid benefits is

[4] This is in contrast to the case with perfect annuities available, in which bequests are zero.

$\hat{p}_H^s[\overline{X} - W_H]$.) Since the expected value with insurance is therefore less than the fair premium, it follows that a risk-averse person *may* not purchase insurance for this time period; an analogous argument holds for other time periods. Insurance would be more likely to be purchased if the gain in *utility* from moving from $\overline{X}$ to X_H was nevertheless high, that is, if the person highly values additional quality. Given some value for additional quality, insurance will be more likely to be purchased the larger is W_H relative to $\overline{X}$; the lower is the value of the Medicaid benefits, the less likely their presence will discourage coverage.

IV. Utility from Bequests

What if the model is modified so that the individual does have children or heirs and therefore the possibility of utility from bequests? (The person is still assumed to be the only demander of insurance or care.) Adding the possibility of utility from bequests does not necessarily change the conclusion. The simplest example of the same conclusion would be a case in which there is zero *marginal* utility from bequests at the level of consumption that would be chosen in the absence of a bequest motive. Since bequests are positive in all periods but the last one, there can still be additions to *total* utility from the existence of such bequests (in the sense that positive bequests are preferred to zero bequests), but no desire to add to these bequests.

Even if the marginal utility of bequests to heirs in the "selfish" equilibrium is positive but small, there may be no demand for LTC insurance. The cost of adding one dollar to one's estate after a long-term illness and death is the sacrifice of $\$p^s$ in current consumption in the "well" state. Since the marginal utility of current consumption is surely positive, it is quite possible that $p^s U'(C_t)$ is greater than the marginal utility of an extra dollar of bequest at wealth level $\overline{W} - \overline{X}$ (for a one-period illness) or at other wealth levels associated with long nursing home stays.

What is true is that positive marginal utility from bequests will always alter the planned consumption stream out of wealth. The reason is straightforward: deferring a dollar's worth of spending to the next period provides both enhanced consumption opportunities next period if one survives and an increased estate if one does not survive. If the second benefit becomes positive, one will be induced to choose lower levels of current consumption, given wealth, in any time period but the last. However, even at this unselfish consumption pattern, there may still be no demand for LTC insurance since insurance (in contrast to saving) does *not* enhance future consumption opportunities in the healthy state.

If, in the absence of chronic illness, the desired bequest does exceed the actual bequest at some point over one's expected life, this point is more likely to occur in the distant future than in the near future. Hence, a threat to bequests from chronic illness, for someone who is buying coverage for chronic illness that starts in the next time period, is likely to occur in the more distant future. But these are the time periods to which survival with chronic illness is unlikely. At a minimum, then, an optimal chronic insurance policy would carry a large deductible, *even in the absence of loading costs*, and would provide coverage only against the very rare coincidence of events that the person (*a*) lives "too long" and (*b*) has a chronic illness. With loading costs to selling an insurance policy, there may well be little demand for such insurance.

In effect, the gain to a risk-averse person from buying coverage against LTC costs is less than the gain from insuring an acute care expense of equal amount. Hence, even at a modest loading, people may not be willing to buy LTC insurance. The greater the utility from bequests and the less sharply marginal utility from bequests declines with age, the greater the demand for LTC insurance.

When will there be a strong expectation of a demand for LTC insurance? If term life insurance is available and if individuals choose to buy such term insurance, we can say that they ought surely also then to be willing to buy LTC insurance. If term insurance is purchased for the next time period, this means that

$$(1 - p^h_{t+1} - p^s_{t+1})U'_B(W_{t+1}) = U'(C_t),$$

where U'_B is the marginal utility of bequests. But since the estate following a long-term illness is less than W_{t+1} (e.g., it would be $W_{t+1} - X$ for a one-period illness), it follows that the marginal utility of an additional dollar in the "costly terminal illness" state is greater than the marginal utility of a dollar in the sudden-death state. So purchase of life insurance ought to be accompanied by purchase of LTC insurance, and (given equal loading) LTC insurance should provide full coverage.[5] (It is, however, somewhat logically inconsistent to admit

[5] It is also possible (though rare) that a long stay in a nursing home will be followed by recovery to the healthy state. How will this affect the demand for insurance coverage of LTC costs? If insurance is of the conventional sort, paying benefits based on current expense levels, there may well still be no demand for insurance. Suppose that a person has a probability of recovery in period t of p^R_t. The probability of being sick is, as before, p^s_t. The risk-averse person would prefer paying $(p^s_t \cdot p^R_t)$ per dollar of coverage to facing the risk of paying one dollar for nursing home costs and then recovering. That is, he would want to insure against cost in the case of the joint event of becoming sick and then recovering. However, the premium for nursing home insurance will be the larger number p^s_t if insurance is of the conventional type, paying costs as they are incurred, and *not* making payment conditional on recovery. If the insurance pays benefits condi-

life insurance to the model and yet continue to assume no annuities since buying term life insurance is really equivalent to selling annuities [Yaari 1965].)

In any event, the purchase of term life insurance by people over 65 is also quite rare; it is estimated that only about 2 percent of elders currently buy such insurance (personal communication, Life Insurance Marketing and Research Association). It is true that death benefits are available from whole life insurance and that a larger fraction of the elderly have such policies, often fully paid up. But it is probably more reasonable to think of such policies as a way to accumulate savings rather than as a way to provide death benefits.

Moreover, important recent work by Hurd (1987) suggests that, at least at the margin, consumption of the elderly appears to be unaffected by a bequest motive. Wealth follows the declining life cycle pattern, and the elderly with children do not leave larger bequests than the elderly without children.

A more complex case concerns the elderly person with a surviving spouse sharing the same household. In such a case, a nursing home stay is likely to reduce the real lifetime consumption available out of a given income for the spouse if the total cost of nursing home care exceeds the discounted value of the future reduction in household expense associated with the death of the ill spouse. Impoverishing one's spouse, rather than one's children, seems to be the major fear of many married elderly.

The appropriate level of LTC insurance in the case in which one spouse survives is much more difficult to specify, for two reasons.

First, the death of one spouse will affect both the income *and* the consumption of the household. Income is affected because pension income is often lost on the death of the spouse receiving the pension. Consumption is affected as long as all household consumption is not fully joint. As Auerbach and Kotlikoff (1987) have noted, the net effect of the death of a spouse on the survivor's consumption opportunities depends on a comparison of the income that would have been received by the decedent with the consumption the decedent would have experienced. At one extreme, if the death of the spouse does not affect income at all (because all provision for retirement consumption comes from wealth), then the death of one spouse will increase the

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tional only on the occurrence of LTC expense, much of the benefit is wasted by being paid in a situation from which there was no recovery. Then observations point toward the kind of insurance policy that would increase expected utility. The policy would be one that paid nursing home costs *only* if the person recovered. Such policies do not currently exist in the United States, so the failure of conventional coverage to be purchased is not surprising. Life insurance policies that pay some benefits before death for insureds in nursing homes have, however, been recently introduced.

consumption opportunities for the survivor. Adding LTC costs makes death more costly, but the net effect of a death, even one accompanied by LTC costs, can be to increase the consumable wealth expected by the survivor if the LTC costs are less than the present value of the future consumption had the person survived. In such a setting, neither life insurance nor LTC insurance need be worthwhile unless and until LTC costs mount so high as to reduce the survivor's wealth. At the other extreme, if a sizable portion of income stops on the death of a spouse but if most consumption is joint, there will be a sizable demand for LTC insurance.

These arguments nevertheless suggest in general a large deductible in any LTC policy. Suppose, for simplicity, that there are no joint costs ("local public goods") in the household and that consumption expense is divided equally. Then the deductible in an LTC policy that maintained the consumption opportunities of the surviving spouse would be equal to half of wealth. If, in contrast, the income of the household came from a pension that ceases on the death of one spouse, coverage should be greater.

The second complexity arises because care for a chronically ill person can also be furnished by the spouse rather than in a nursing home. Provision of such care surely represents a reduction in the real consumption the spouse experiences. But the implicit cost of quality-adjusted spouse-provided care may be less than the cost of market-purchased nursing home care. Moral hazard may nevertheless lead to a substitution of the latter for the former; the ideal arrangement would be to make a cash payment equal to the subjective opportunity cost of spouse-provided services conditional on the occurrence of chronic illness, regardless of which type of care is actually used. (This assumes that the marginal utility of money for the healthy spouse is not reduced by the occurrence of illness for the partner.) However, such a strategy may not be feasible for an insurer. Desired bequests will nevertheless be more likely to exceed actual "selfish" bequests when a spouse is present than when no spouse is present, so one would expect a stronger demand for LTC insurance in such cases.

V. Long-Term-Care Insurance and Intrafamily Bargaining

There is another source of demand for chronic care insurance. As noted above, the major function of such insurance is to protect the estate the individual leaves. Even if the individual has no utility for bequests, the heirs presumably do. If the heirs are risk averse, one would expect them to purchase nursing home insurance for the elderly individual. For instance, one way to look at such insurance is as

a supplement to life insurance to protect against the event that life insurance proceeds are consumed by paying unpaid nursing home bills; if the heirs expected to rely on life insurance, they might be expected to insure its payment. However, to develop this point further, we need a model of family behavior.

The analysis thus far has viewed the individual purchaser as purchasing insurance with regard only to his own behavior. A more general approach, as suggested by Bernheim, Shleifer, and Summers (1985), is to imagine that parents may be able to affect the behavior of their heirs by manipulating future bequests, and may wish to do so. The reason for wanting to affect behavior comes about because individuals are assumed to prefer, other things equal, that certain actions be performed by family members rather than provided by commercial firms or hired strangers. Less formally, but realistically, parents prefer care from their children to care from others. This motivation might especially be thought to characterize care for chronic illness or increasing frailty. Other things equal, including the subjective or objective cost of care, most people would probably prefer to be cared for by their own family, in their own surroundings, rather than be moved to a nursing home or even to be attended by strangers in their own home.[6] While one would realize that there will be some circumstances in which family-provided care is infeasible, one wishes those circumstances to be made rare.

Bernheim et al. represent this idea by suggesting (in this context) parental and child (or heir) utility functions of the form

$$U_P = U_P[C_P, A, M_P, U_K(C_K, A)] \tag{1}$$

for the parent and

$$U_K = U_K(C_K, A) \tag{2}$$

for the child, where C_P is parents' consumption, A is "activity" or "attention" from children, M_P is medical expenditure on parents, U_K is child's utility function, and C_K is child's consumption.

In this general model, parents manipulate bequests for heirs in order to affect the behavior of their children. If the elderly person were to remain fully able to manipulate potential bequests until death, he would do so in such a way as to bring forth his utility-maximizing level of A. In this model, A might represent family help in caring for a person with chronic illness. The unselfish parent would then use the

[6] Studies that showed that the parents would prefer not to burden their children with caring for them do not contradict this assumption since in those studies, the choice was always between *free* care from others and care by one's family with a high subjective cost.

bequest to motivate A and would potentially buy insurance against at least some of the nursing home costs, costs that will be incurred when A is either too (subjectively) costly or too ineffective. However, there are probable features of chronic illness and LTC insurance that may limit this conclusion and that call for a modification of the model.

The elderly person probably correctly anticipates that his power to manage or choose both his own consumption and his bequest levels will be limited once illness strikes. That is, a person too feeble to manage any semblance of household production may also be judged incapable of manipulating bequests. While one could write a clause in one's will to the effect that "if my children put me in a nursing home unnecessarily, they are disinherited," such a clause would be impossible to enforce. And in addition, there will be moral hazard associated with insurance coverage of formal long-term care. That is, the presence of LTC coverage will encourage the children to initiate more formal (non-family-provided) care than would be the case without insurance. Without insurance, a dollar spent on nursing home care for a parent reduces bequests by a dollar, but if full insurance is available, there will be no user cost to the nursing home. A formal model of LTC insurance with moral hazard would be identical to other such models (Pauly 1968; Zeckhauser 1970), except that the identity of the decision maker whose demand is effective will depend on the "state."

What this means is that the elderly individual who is still capable of deciding on his insurance coverage but whose children will control the level of care should he become ill may have a higher expected utility with no insurance on his LTC costs than with insurance. Figure 1 illustrates. Let D_P be the parent's own demand for formal care (as a substitute for family-provided care), D_K the demand by the child for care for the parent, and MC the marginal cost of care, assumed to be equal to the price. If chronic debilitating illness of the parent does occur, the child's demand curve fixes the level of M_P (and, by inference, the level of A) since the child then controls the decision on type of care to be provided to the parent. With no insurance, the child chooses the level of formal care Q_N^K for the parent. Were there to be insurance coverage at, say I^*, the parent will receive instead formal care in the larger amount Q_*^K. Suppose that the elderly person would prefer insurance coverage I^* if he could control the level of care and receive Q_*^P. But since he will be forced to "overconsume" formal care at Q_*^K, receive less child attention A than at Q_*^P, and perhaps pay the additional premium for the insurance as well, he may well prefer no insurance. That is, because he prefers to consume at Q_N^K than at Q_*^K, he is willing to forgo the risk reduction benefits of insurance coverage. This is so even if the parent is risk averse and would buy insurance could he control the levels of A and M_P. It could also happen

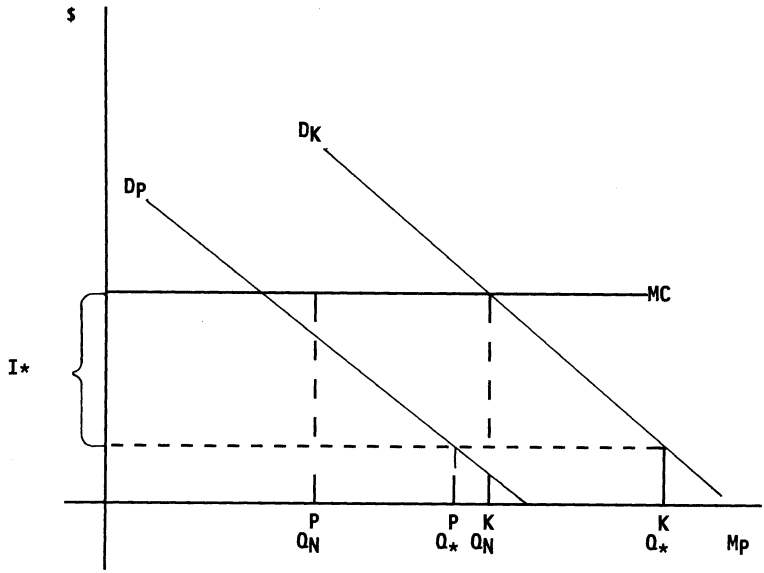

FIG. 1.—Manipulating moral hazard

even if the parent internalized any risk aversion the child might have. Since the parent loses control when he becomes ill, he may prefer that his children at least recognize that putting him in a nursing home reduces their potential estate dollar for dollar.

These arguments explain why the elderly may not even permit their children to buy insurance on their behalf. They also provide another explanation why elderly with some concern for their children's welfare may nevertheless be unwilling to buy coverage themselves. While they would like to assure themselves that their children will have an adequate estate or that their children will not be subject to risk, they do not want to distort the incentives their children will face. Since we imagine that the decision to purchase LTC insurance is made *before* the elderly person becomes enfeebled, we imagine that strategic manipulation of bequests *can* be used to prevent insurance purchasing by one's children. Once chronic illness has occurred, no insurer will sell insurance. In effect, the model is one in which an elderly person can choose the incentives that confront his family members, but not their actions.

VI. Public Policy toward Long-Term Care in the United States

From this viewpoint we can also examine in a preliminary way the proposals that have been made to alter LTC financing in the United

States. Bowen and Burke (1985), for example, proposed that a tax-shielded "individual medical account" should be created. In one version, part of the funds deposited in this account would be available (with interest) for one's own nursing home costs, and part would be pooled with the contributions of others in a kind of LTC insurance. It is modeled after the individual retirement account, but with funds earmarked for long-term medical care.

The fundamental question is whether a private decision to avoid LTC insurance because the value of the dollars in the "sick state" is low, or because of intrafamily moral hazard, ought to be overridden by a tax subsidy. If the market for annuities remains imperfect, such a subsidy does not necessarily improve welfare. Of course, if the tax subsidy (or any other intervention) could reduce the administrative cost of insurance, it could be worthwhile. Indeed, improving the market for annuities might be the most important first step in encouraging a market for LTC insurance. But in the current situation, subsidies to the nonpoor may well not be justified. In a similar vein, improving the ability to define and measure the circumstances that can trigger nursing home benefits, and thus avoid intrafamily moral hazard, is likely to be more efficient than subsidizing current insurance products.

These conclusions must be tentative because, as in virtually any other second-best situation, unequivocal theoretical conclusions are difficult to obtain. If LTC insurance can be structured as an annuity substitute, provision of such coverage can improve welfare, in part by reducing the need for unintended bequests. This rationale would apply more strongly to the (relatively unlikely) "recovery from chronic illness" situation. A subsidized or tax-funded pay-as-you-go LTC insurance might, in such a case, have depressing effects on savings just as pay-as-you-go social security. The main benefit of more extensive LTC insurance, public or private, would be the benefit obtained by risk-averse heirs from reducing the risk attached to the inheritance they will receive. This gain has not been identified in the LTC insurance debate as a matter of serious public concern. There is a case for subsidizing coverage that reduces the likelihood of Medicaid spending, which I have discussed elsewhere (Pauly 1989). But for the nonpoor elderly this paper discusses, who are exactly the elderly whose behavior would be most affected by tax subsidies, the Medicaid savings are probably small.

The demand for LTC insurance will be greatest among those who already purchase (term) life insurance. The nonelderly (who are nevertheless at some risk for nursing home care), whose costly nursing home stay before death would deprive a surviving spouse of significant income, would seem to be the major candidates for coverage.

Widows and widowers, even those who can "afford" coverage (in the sense of having income sufficient to cover premiums), will probably remain reluctant to purchase.

VII. Conclusion

The models in this paper help to explain why a rational risk-averse person who is not poor might, nevertheless, choose not to buy conventional insurance against nursing home care costs. Such coverage serves primarily to protect bequests that, with imperfect annuities, are likely to be excessive in any case. And coverage makes it too easy for children to substitute formal care provided by others for the informal care rendered by the children.

There may therefore be good reasons why people, especially nonpoor people, do not buy LTC insurance. The mere absence of coverage does not necessarily imply the existence of a problem of market failure requiring government intervention.

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