

Making the Transition to Prepaid Medicare

Thomas R. Saving

The Medicare system is facing a financial crisis, brought on by a combination of factors: 1) a financing system that relies on intergenerational transfers from workers to the elderly as its major source of revenue; 2) a payment scheme that traditionally has provided neither the demand nor the supply side of the market with strong incentives to hold down costs; and 3) the penchant of Congress to expand the coverage of the system over time, every time a worthy cause or group can be identified.

The expansion of Medicare benefits began almost immediately after the passage of the legislation. In 1967, just one year after Medicare had passed, Congress increased the number of days of in-patient hospital care covered by the program. In 1972, payment for the services of interns and residents in podiatry training was added to the benefit package. Also, Medicare coverage was extended to disabled persons under age 65 who were eligible for benefits under Social Security or Railroad Retirement and to certain other individuals under age 65 suffering end-stage renal disease. Later, Medicare benefits were extended to state and local government employees not covered by Social Security, and then coverage was extended to spouses of workers who were not yet covered, but would be eligible to be covered. In 1980, unlimited home health visits were covered, as was the use of alcohol detoxification facilities. In 1985, Medicare provided payment for liver transplant services.¹ There is current political pressure to expand the system to cover prescription drugs.

¹ This paragraph only sketches some of the ways in which Medicare coverage has been expanded over time. An excellent review of the history of Medicare provisions is contained in the annual statistical supplement to the 1996 *Social Security Bulletin*.

■ *Thomas R. Saving is Jeff Montgomery Distinguished Professor of Economics, and Director, Private Enterprise Research Center, Texas A&M University, College Station, Texas.*

As economists, we can analyze the costs and benefits of these decisions to expand Medicare coverage without questioning the wisdom of the expanded coverage. It is useful, however, to recognize that some of the problems of the existing system emanate from the fact that many in the political arena want to use the Medicare program for redistribution. In this paper I will steer away from asking what Medicare should cover, and instead focus on the insight that a desire for redistribution does not require that Medicare be inefficient or that price signals be disregarded. For example, our society allows prices to affect behavior in the market for food, while accomplishing the desired level of redistribution via food stamps and welfare payments. The impending financial crisis of Medicare is an opportunity to redesign the system to encourage greater efficiency along two main dimensions.

A first set of efficiency problems occurs because of Medicare's intergenerational funding scheme, which relies on workers paying taxes to finance health care for the elderly. But when the young expect a subsidy for their health costs after retirement, while at the same time paying an earmarked payroll tax that lowers current disposable income, both the incentive and ability to save are reduced. This arrangement reduces savings and, ultimately, the nation's capital stock, thus leading to a reduced standard of living.² Moreover, financing health care for the elderly through intergenerational transfers means that the program will come under stress when the size of generations varies. A larger than normal generation, such as the "baby boomers," will pay taxes below the steady state tax rate during its working years and impose taxes above the steady state tax rate on a following normal-sized generation.

This efficiency problem of pay-as-you-go Medicare financing can be addressed by making a transition to prepaid Medicare. In prepaid Medicare, each generation puts aside funds for the health care it will demand later in life. The advantages of prepaid Medicare are two-fold: 1) Through higher savings, investment and growth, the nation will enjoy the benefits of greater consumption for both working and retired generations; and 2) The nation will be immune from any economic effect of future shocks concerning generation size, whether in the form of "baby booms" or "baby busts."

The second broad set of efficiency concerns revolves around the role played by price signals—or rather, the lack of such a role—in the current Medicare system. As a point of departure, it's worth reflecting on why advertisements in certain industries, such as supermarkets, focus almost exclusively on price, while health care industry ads almost never mention price. One is tempted to say that part of the reason involves quality concerns, but while individuals may not want to use cut-rate, low quality hospitals, they would presumably prefer to pay less for *any* given quality.

² The theoretical evidence is clear that generational transfers reduce the capital stock, even if allowance is made for endogenous longevity. For example, see Liu, Rettenmaier and Saving (1999) for a proof that in any "Golden Rule" economy, increases in public old-age pensions are longevity-neutral and capital stock-reducing.

While conceding that quality is a bigger issue in health care than in grocery shopping, there is a more straightforward reason for the lack of price competition in health care; the majority of consumers of medical care are not concerned about its price because the cost of their medical care is largely or entirely covered by insurance, and they aren't paying for it directly. Because buyers are not concerned about the cost of health care, the sellers of health care have no incentive to compete via price.

Making prices matter to both buyers and sellers of health care requires a solution to two issues that form the cornerstones of the health care payment system. First, the incentive structure of Medicare must be altered so that beneficiaries have some reason to care about cost, which in turn will make suppliers care about cost. Second, the redistributive aspect of the Medicare program should be separated from other aspects of the program. As one example, quite possibly the most controversial use of Medicare tax receipts has been subsidies to a relatively small number of teaching hospitals, which serve to subsidize both the training of physicians and the use of the hospitals by indigent patients. Both of these purposes may well be worthy of public support, but if they are so worthy, it seems that general revenue funds would be a more appropriate way to pay for them rather than using the Medicare program.

I believe that the best approach toward an efficient reform of Medicare, one that addresses both the issues of prefunding and increased sensitivity to prices, should happen through a system of privatized individual accounts. However, the transition to such a system raises a number of issues which deserve discussion.

Making the Transition to Fully Funded Medicare

In thinking about the transition to a fully funded Medicare system, it is useful to structure the argument by looking for a way to make the transition Pareto-improving for both younger and older generations. One necessary but not sufficient condition for the transition to be Pareto-improving is that the benefit structure for the currently retired population and the soon to be retired population is kept intact; that is, the current and soon to be elderly must be able to continue to consume health care services at their anticipated levels. Medicare has been in place for 34 years; it is simply too late for the current retired population and the soon to be retired population to be placed in a fully funded system.

Given the current level of income, if the young are providing for the prefunding of their own Medicare while simultaneously providing the resources to maintain the elderly's Medicare, they must sacrifice current consumption. As the capital stock and income grow with time, however, those that made the sacrifice have the potential to enjoy greater consumption in the future. The important question is how to reach this superior long-run equilibrium.

Requiring younger generations to save more in the present in exchange for a

higher standard of living in the future is sometimes referred to as the “transition cost” of moving to a funded Medicare system. “Transition cost” is a term that has been especially widely used in policy debates concerning Social Security reform. In fact, however, prefunding does not generate any additional cost—at least not the kind of cost usually captured by this term—but serves only to bring the implicit government debts in terms of promised benefits in the pay-as-you-go system to the surface.

Any current balances in the Medicare trust fund (and the Social Security trust fund, for that matter) cannot be used to help with the transition. To see the illusionary nature of these trust funds, consider the following question: What must happen when revenues into the Medicare system fall short of expenditures? The answer is simple; namely, taxes must rise or government must borrow from the public to cover the shortfall. The same thing would happen if there were no trust fund. On the other hand, if the trust funds contained bonds issued by the German government, for example, then when revenues fell short of expenditures, the German economy would provide the resources necessary to cover the shortfall.

Perhaps the most useful way to convey the benefits and costs of the transition to a prefunded Medicare system is through a specific example. I begin by considering the contribution rate, expressed as a percent of payroll, required over the work life of a representative individual to cover expected Medicare expenses. While there is no reason to restrict the funding of prepaid Medicare to payroll taxes, I do so here to make comparisons with current and expected future Medicare payroll taxes. In addition, just as in the case of current Medicare, I do not allow any rights of survivorship in funds accumulated. I simply assume that all Medicare account funds are distributed equally to all living members of a cohort. Finally, in constructing this example, I treat members of the same generation as identical to focus the discussion on intergenerational efficiency and equity. Later in the paper, I will return to the issue of redistribution within generations.

Table 1 presents the contribution rates required to prefund current Medicare, based on Rettenmaier and Saving (2000). Consider a representative individual entering the labor force at age 22. A first step is to calculate the present value of expected lifetime earnings for a representative individual based on an estimated progression of age-earnings profiles. Estimating the progression of age earnings profiles is critical because replacing pay-as-you-go Medicare with prepaid Medicare will enhance the nation’s capital stock, which will in turn increase earnings. The age-earnings profiles relevant for prepaid Medicare are calculated by taking estimated male and female age earnings profiles under status quo Medicare, and then adjusting these profiles upward to account for earnings growth resulting from the capital stock increase due to the transition to prefunded Medicare.

The challenge here is to estimate the capital stock increase that will occur in the transition away from pay-as-you-go financing of Medicare entitlements, and how this transition will affect wages. How much would prefunded Medicare increase the capital stock?

Table 1
Required Annual Contributions Beginning at Age 22 as a Percent of Life Cycle Earnings
(HCFA growth rates in per capita medical expenditures assumed)

<i>Assumed Marginal Productivity of Capital</i>	<i>Medicare Replacement</i>	<i>\$2500 Deductible Policy</i>
3.5	5.34	4.51
5.4	2.67	2.27
6.4	1.86	1.58
8.5	0.87	0.74

There are three reasons why the transition to prepaid Medicare might result in an equal offsetting change in saving behavior so that no change in the capital stock occurs. First, if the mandatory savings embodied in the Medicare accounts is treated by individuals as a tax cut, then they can gain additional consumption by altering their savings plans. However, since my proposal simultaneously takes away their entitlement, the mandatory contributions should not be viewed as a tax cut. Second, if individuals now assume that Medicare will not be in existence when they retire, they are already saving for their future and the mandatory accounts are simply a substitute for current saving. However, the much publicized low saving behavior of the United States does not lend much credence to this argument. Third, the existence of intra-family transfers based on an altruistic parental bequest motive could result in a reduction in bequests equal to the resources in the mandatory Medicare accounts since parents now see their children, who won't have to pay for the parents' health care, as better off by the amount in the Medicare accounts. Thus, a form of Ricardian equivalence holds where parents reduce their savings by the reduction in intergenerational transfers—that is, the amount in the next generation's mandatory Medicare accounts. However, as Wilhelm (1996) and Altonji, Hayashi and Kotlikoff (1997) show, there is little evidence that the altruistic model of bequests explains current bequest behavior.

Therefore, I assume below that the domestic capital stock increases by the amount of the capital stock required to fund the promised Medicare benefits. I further assume that the growth in the capital stock is restricted to the domestic economy. This assumption is made because I want to make comparisons with the current Medicare program which is financed by payroll taxes. As a result, my simulations understate the benefits of the transition because the increased investment induced by the prepayment of Medicare could be optimally distributed among the world's economies with a smaller reduction in the marginal productivity of capital.

Given that the capital stock will increase as Medicare benefits are prefunded, earnings growth can be estimated using the historical relation between earnings and output, on the one hand, and output and capital on the other. The Social

Security Administration's Actuarial Study 108 indicates that the ratio of earnings to the gross domestic product is between 0.44 and 0.46. Further, the ratio of gross domestic product to the capital stock is estimated to be 0.37. Assuming that these relations continue to hold in the future implies that the elasticity of earnings with respect to the capital stock is unity. If the transition to prefunded Medicare begins immediately, assuming a constant marginal productivity of capital of 8.5 percent implies percentage increases in the capital stock of 8.2 percent by 2010, 16.9 percent in 2020, 23.2 percent in 2030 and 25.0 percent by 2050.

Once the earnings estimates are in place, the next step is to calculate the present value of expected lifetime Medicare benefits. To do this, I begin with projections from the Health Care Finance Administration (HCFA), which assume per capita medical expenditures growth for years 1998 to 2002 of 1 percent, for years 2003 to 2010 of 3.5 percent, and for years 2011 to 2022 assumes a constant decline in the 3.5 percent growth rate to 0.9 percent. The estimated future cost of current Medicare is then based on current total Medicare benefits (Parts A and B) less Part B premium payments, which I allow to grow at the rates projected by HCFA.

The estimated future Medicare contribution rates for each generation must be adjusted both for changes in mortality and in labor force participation. I adjust for mortality rates for each of the cohorts alive in the beginning period by using the midrange predicted life expectancies from the Census Bureau. Finally, I adjust the contribution rates so that the payments of those who are working will make the necessary Medicare contributions to prefund accounts for those who are not working, such as a nonworking spouse.³

A final parameter of interest is the rate of return on Medicare contributions. From a social point of view, the rate of return should reflect the marginal productivity of the increase in the capital stock emanating from the extra savings in prefunded Medicare. In Table 1, I present four alternative values for the marginal productivity of capital: 3.5 percent, which is the rate of return on inflation-indexed Treasury securities; 5.4 percent, the historical real rate of return on a portfolio of 60 percent equity and 40 percent debt over the period since 1926 (Feldstein and Samwick, 1997); 6.4 percent, the real rate of return on a 100 percent equity portfolio for the last 60 years (based on the Standard and Poor's 500 including dividend reinvestment); and 8.5 percent, Poterba's (1999) estimate of the pre-tax real rate of return on capital.

The higher the marginal productivity of capital, the lower the current contributions from earnings that are necessary to finance future Medicare benefits. Thus, the required contribution rate as a percentage of lifecycle earnings ranges from a

³ For each of the base health insurance premium series, the premiums for ages 65 and above are calculated for today's younger cohorts by applying the growth rate for the appropriate number of years. For the details of this computation, see the discussion of the prepaid Medicare contribution rate in Chapter 4 of Rettenmaier and Saving (2000).

low of 0.87 percent to a high of 5.34 percent in column 2 of Table 1. All of the estimates in Table 1 assume constant marginal productivity of capital over time. However, as the capital stock grows, the marginal product of capital will fall and wages will rise. For example, the 0.87 percent contribution rate, based on a constant 8.5 percent marginal product of capital, rises to 1.26 percent when the effects of the larger capital stock are considered. For purposes of comparison, the value of Medicare's total expenditures associated with treating the population 65 and above, net of premium payments, equaled 4.17 percent of taxable payroll in 1998, while the current Medicare Part A ("hospital insurance") tax is 2.9 percent.⁴ In the subsequent discussion, I assume an initial marginal productivity of capital is 8.5 percent and allow the marginal product of capital to decline as the stock of capital grows.

The second column of Table 1 presents the required annual contribution for both parts of current Medicare, while the third column of Table 1 presents a proposed alternative based on a Medicare plan with a \$2,500 annual deductible. The role of the deductible will be discussed in more detail below; here, suffice it to say that its purpose is not so much to reduce the cost of the Medicare program directly, but to provide incentives for both health care consumers and providers to care about the cost of health care.

In thinking about how to interpret the hypothetical representative individual in Table 1, it is useful to view the contribution rates presented in Table 1 as based on yearly redistribution. For example, individuals in the 1976 birth cohort, who are 22 years of age in 1998, must contribute 0.87 percent of their lifetime earnings to an account to prefund their own Medicare health insurance. Assuming the average earnings for all 22 year-olds, including nonworkers, is \$10,000, the required contribution would be \$87 in 1998 and will rise over time with average earnings. Redistribution among all 22 year-olds would be needed, from those 22 year-olds earning more than the average to those earning less, so that every member of a given age group sets aside the average amount of funds in an individual account. This redistribution is not meant to be taken literally as a proposal of how a revised Medicare system should work; instead, it helps to convey the level of redistribution inherent in current Medicare.

During the transition to a cohort-based financing system of this type, younger cohorts must both pay for the contributions to their own individual accounts and for the health care costs of the currently retired population and those close to reaching retirement age. Ideally, the transition taxes would be generation-specific, wherein younger generations pay more during the move to fully funded Medicare,

⁴ This calculation excludes payments for disability. Exclusion of the disabled does imply a policy change in Medicare, but for present purposes the assumption is a reasonable one. Disability health insurance is a general welfare issue rather than a retirement medical care issue, and the focus here is on stripping away redistributions embodied in programs such as disability health insurance to see what prefunding mainstream Medicare would look like.

because they will also benefit more from the higher capital stock and earnings that will be generated by fully-funded Medicare. Indeed, it can be shown that any transition tax structure that is Pareto-improving must be inversely related to a generation's age. However, for my purposes, I impose the same transition tax rate on all generations and thus, I make no pretense that the transition is Pareto-improving for all generations.

A first step is to calculate the unfunded liabilities of the current system. The transition path can be simulated using the basic ideas underlying the results presented in Table 1. At the outset of the simulation I assume that program participants realize a marginal productivity of capital of 8.5 percent, and impose the growth rate in per capita medical care already discussed.⁵ Over time, I allow the marginal product of capital to fall and wages to rise as the capital stock grows. In this example, both those who remain in the old system and those who are in the prefunded system receive the same scheduled benefits.

The present value of the difference between scheduled expenditures and status quo revenues represents the status quo unfunded liability, and it reflects the additional borrowing or tax revenues required to make the system solvent. Using the government borrowing rate of 2.8 percent (the Medicare Trustees' ultimate assumption), and stopping the simulation in 2080, produces a present value of unfunded future expenditures of about \$9.3 trillion. With this unfunded liability, the immediate tax increase required to make the current system solvent is 4.86 percent of payroll.⁶ As noted earlier, the present tax rate implied by both parts of Medicare—the value of total Medicare spending divided by the current payroll—is 4.17 percent. Thus, an immediate 116 percent increase in the current implied tax rate from 4.17 percent to 9.03 percent ($4.17 + 4.86$) is necessary to bring current Medicare into actuarial balance over an 82-year horizon.⁷

Now, let us assume that all individuals born in 1946 or later are placed in the prepaid Medicare system. Thus, after those born in 1946 have turned 65 years of age, in 2010, no new beneficiaries will be added to the old Medicare system. By around 2046, very few of those born before 1946 will still be alive. Consequently, it is useful to think of the movement to a prefunded system as starting immediately,

⁵ The 8.5 percent is the pre-tax marginal productivity of capital and is appropriate since I am interested in the effect of the increased capital stock on the gross domestic product and subsequently on wages. Given that capital is taxed, the increased capital stock will also lead to increased tax revenues. Here I assume that the increased tax revenues go to finance government programs. However, many of the proposals for privatizing Social Security use these increased tax revenues to pay for part of the transition.

⁶ The 1998 Hospital Insurance Trustees Report states that an increase of 2.1 percentage points will be enough to make the system solvent. However, that calculation is different from the one performed here in two important ways. The calculation in the text represents both parts of Medicare, not just Part A, and the calculation in the text is over a longer horizon than the Trustees Report.

⁷ This increased tax rate only makes the system solvent if the excess of revenues over costs in the early years is invested at the government borrowing rate. Since no prior Medicare revenues have been invested, this discussion is purely hypothetical.

and then approaching completion by about 2046, when the last of those in the old Medicare system will have died off.

Table 2 presents the results of a simulation in which the necessary reductions in consumption required to fund the capital stock increases are achieved through contemporaneous taxation. Column one shows the forecast of Medicare benefits, less Part B premium payments, as a percentage of the pay-as-you-go financed Medicare taxable earnings at ten-year intervals between 2010 and 2070. Over the first 22 years of the transition (from 1998 to 2020), benefit expenditures as a percent of earnings will grow 92 percent which implies a pay-as-you-go tax rate of 7.81 percent. By 2030, all the baby boomers born before 1965 will have retired, and keeping current Medicare pay-as-you-go financing would require a tax rate of 10.44 percent. Column two shows the comparable forecast of Medicare benefits as a percentage of prefunded Medicare taxable earnings for the same ten-year intervals. The difference between these two columns is due to the effect of prefunded Medicare on earnings through its effect on the capital stock.

Column three shows the percentage of total medical care benefits of the 65 and over population that would be financed from prepaid accounts. In 2010, all benefits are paid by the current system but by 2050, all benefits are paid out of private accounts. Indeed, in the years beyond 2050, the private accounts produce benefits in excess of those expected under the current system.⁸ Column four is the difference between columns two and three; thus, it shows the benefits that must be paid by tax revenues.

Column five shows the aggregate private account contributions as a percent of earnings that are needed to fund the future Medicare benefits of the group. The sum of the benefits paid by tax revenues (column four) and the amount necessary to prefund the Medicare accounts (column five) gives the overall tax rate, as shown in the final column. Column seven shows the total taxes required to fund the contributions to private accounts and pay for the transition to prepaid Medicare. In 2010, total taxes are 7.85 percent of payroll, above the pay-as-you-go tax rate of 5.38 percent, but by 2020 have already fallen below the pay-as-you-go tax rate. From 2010 forward, taxes plus contributions to private accounts continue to fall until by 2050, they reach the 1.26 percent level required to fund prepaid Medicare.

Column six shows the “transition tax” that is required to fund private accounts. This amount is derived by taking the total amount required to prefund Medicare and subtracting the 4.17 percent current implied Medicare tax. Thus, any amount spent above 4.17 percent can be attributed to the transition to a funded system. The transition tax is 3.68 percent in 2010 but by 2026 falls to zero.

The payroll taxes in this simulation far exceed current Medicare payroll taxes

⁸ The contribution rate we use may be too high for two reasons: the Medicare trustees assume that the Medicare expenditure growth rate stabilizes at 0.9 percent so that future labor force entrants will face lower expenditure growth over their lifetimes than current labor force entrants; and because the capital stock growth will allow future generations to have higher lifetime earnings than current generations.

Table 2

Medicare Simulation Results*(percent of taxable payroll)*

<i>Year</i>	<i>Status Quo Medicare Tax Rate</i>	<i>Forecast Medicare Costs</i>	<i>Benefits Paid From Prepaid Accounts</i>	<i>Benefits Paid by Tax Revenues</i>	<i>Aggregate Prepaid Account Contributions</i>	<i>Transition Tax</i>	<i>Benefits + Transition Tax</i>
2010	5.38	5.27	0.00	5.27	2.57	3.68	7.85
2020	7.81	7.51	3.55	3.96	1.75	1.54	5.71
2030	10.44	9.91	8.11	1.80	1.35	0.00	3.16
2040	11.71	11.07	10.68	0.39	1.27	0.00	1.66
2050	12.07	11.41	11.41	0.00	1.26	0.00	1.26
2060	13.16	12.45	12.45	0.00	1.26	0.00	1.26
2070	14.33	13.65	13.65	0.00	1.26	0.00	1.26

and the question arises concerning the extent of incentive effects that may be created by taxes of this magnitude. There are two responses to this concern. First, staying with current pay-as-you-go financing of Medicare only puts off the hefty increase in payroll taxes by 20 years. Second, and more important, I use payroll taxes in the simulation only to facilitate direct comparisons between current Medicare and prepaid Medicare. For actual policy purposes, there is no requirement that the transition be funded using payroll taxation alone.

The fact that the transition tax goes to zero and contributions fall to 1.26 percent of payroll, rather than rising to 14.33 percent, does not necessarily imply that a new 22 year-old labor force entrant in 1998 will be better off in the world of prepaid Medicare. For new labor force entrants to be net beneficiaries of the transition requires that the benefits of the increased capital stock more than offset the reduced consumption of the early years of the transition. We can assess the relative position of a 22 year-old 1998 labor force entrant by calculating the present value of income after any Medicare taxes and contributions to private accounts in the prepaid Medicare versus the existing pay-as-you-go system. For a 1998 22 year-old labor force entrant, the ratio of income after Medicare costs in the prepaid system to income after Medicare costs in the pay-as-you-go system is 1.05, implying that the new 1998 labor force entrant will be 5 percent better off under the new regime. For 1998 newborns who will enter the labor force in 2020 the benefit ratio is 1.23, implying that a 1998 newborn will enjoy a 23 percent greater lifetime disposable income.

Indeed, the transition to funded Medicare may be even more favorable for younger generations than these calculations indicate for two main reasons. The discussion here has ignored what can be viewed as a significant additional source of economic surplus to fund the transition. A shift to a funded Medicare system will allow the reduction and eventual elimination of the payroll taxes that are currently used to fund Medicare. The elimination of this distortion offers an additional

efficiency gain which will allow the change to a prefunded Medicare system to be Pareto-improving (Liu, Rettenmaier and Saving, 2000).

Moreover, the discussion above is predicated on the assumption that the younger generation bears most of the costs of the transition to a new Medicare system. If we require that older generations pay a greater portion of the transition cost (perhaps on the grounds that Congress has overpromised, and there is no reason to expect the costs of that overpromising to be borne solely by younger cohorts), then current retired and soon to be retired generations can pay part of the costs of prefunding Medicare. For example, to distribute the burden of the transition across generations, the transitional tax could be more broadly based by using the business cash flow tax suggested by Kotlikoff (1995). Alternatively, the burden could be made explicit in Medicare's case by increasing the premiums that beneficiaries pay to participate in Part B coverage or introducing premiums for Part A coverage.

The Price System and Issues of Redistribution

Most of the discussion to this point, with the exception of the final column in Table 1, has focused on covering all of Medicare spending, except for the existing levels of premiums, with prefunded accounts. However, there is a strong argument to be made that all recipients of health care, including the elderly, should face a larger share of the actual costs of routine health care, while having insurance against the higher costs associated with serious health problems. Thus, I would argue that an appropriate form of prefunded Medicare accounts would seek to provide health insurance with a sizeable deductible. A sizeable deductible—say, \$2,500 annually—would provide several important benefits.

First, several studies imply that a \$2,500 annual deductible will reduce elderly health care expenditures by at least 16 percent on the demand side alone (Keeler et al., 1988; Christensen and Shinogle, 1997). Second, making demanders care about the cost of health care will encourage competition among providers, further reducing expenditures. Third, a sizeable deductible will make the transition to a fully funded Medicare system much easier, because the amount of future coverage needed would be substantially lower. In my simulations, I ignore any supply side effect of the deductible and simply assume that the HCFA-estimated future health care expenditures gradually fall until they reach a decline of 16 percent when all of those in the existing system are deceased. The imposition of the \$2,500 deductible for the coverage provided by prefunded Medicare accounts reduces the maximum transition tax from the 3.68 percent shown in the first row of Table 2 to just 3.24 percent, and the transition tax will have fallen to zero by 2025.

One great concern about a privatized individual account retirement system, with or without the \$2,500 deductible, is whether it would be less redistributive than the current public system. It might seem at first glance that this could be an

especially important issue for the Medicare system because worker contributions are largely proportional to income (that is, the payroll tax is a percentage of income without a cap) and benefits are conditional on use of the health care system without any tie to lifetime earnings.

But in reality, the level of redistribution in Medicare is quite small, because those in higher income groups, who paid more in Medicare taxes, also tend to have higher life expectancies. These differences in mortality considerably narrow, and in some cases eliminate, the progressivity in returns across income classes (Garrett, 1995). Moreover, a Medicare system based on private accounts is consistent with any level of redistribution if it allows for the possibility of government matching contributions to individuals making smaller-than-average contributions to their individual accounts.⁹

Conclusion

The Medicare system will require reform in the next few decades, whether or not America moves Medicare's financing from generational transfers to a prepaid system. If our society wishes to honor all (or most) of the commitments we have made to provide health care for the elderly population, then some short-term sacrifice will have to be made by younger generations. The only question is the form that sacrifice will take. If the current Medicare financing based on intergenerational transfers is left in place, then payroll tax rates will climb dramatically and remain at levels more than three times the current full implied Medicare tax rate of 4.17 percent. On the other hand, if we embark on a transition to a prefunded system, the rise in national savings over time will mean that in the long run the total resource commitment to financing elderly consumption can be reduced permanently. We can choose between these options, but we cannot wish away the unfunded liabilities of the present Medicare system.

The general calculations presented in this paper abstract from many practical issues of the Medicare system, which any movement to prefunded Medicare would have to address. However, the simulated transition does offer a broad sense of how such a transition could work. For the first 18 years, workers will pay more in taxes and in contributions to their private accounts than they would under the current system, but in all future years, workers will pay lower taxes than would be required to finance Medicare on a pay-as-you-go basis. Prefunded Medicare will increase the capital stock and lead to higher wages over time, opening up possibilities for increasing the consumption of all generations. Moreover, a prefunded retirement

⁹ For a detailed analysis of how individual accounts and intragenerational redistribution can be mutually compatible with progressive matching of individual accounts, see Kotlikoff, Smetters and Walliser (1998).

health care system will be forever free of exposure to uncertainty due to the size of future generations.

As a final comment, I note that while this analysis has been based on the creation and maintenance of private accounts, such accounts are not a necessary condition for prefunding Medicare. The capital stock effects envisioned here all result from individuals making decisions that result in capital accumulation. For individuals not to have incentives to undo the capital effect of private accounts, through offsetting decisions in available financial markets, it must be clear to individuals that the prefunding institution is permanent and credible. The existence of more than 150 million private Medicare accounts would make government use of the funds from these accounts more difficult. However, if all these funds were in a centralized government Medicare account, these funds are accessible whenever a fiscal emergency arises.

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