

Growth in Medicare Spending What Will Beneficiaries Pay?

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Sang Chi and Misha Segal contributed substantially to this project, helping to develop the basic model and producing the [tables and charts](#) contained herein.

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Executive Summary

Medicare is one of our most popular public programs and constitutes the largest public health insurance program in the United States. But it is facing major challenges in adjusting to an aging society. Either the program and/or its financing will need to change to meet the greater demands of an increase in the number of elderly and disabled persons served by the program and the expected increases in the costs of providing health care to Americans.

As a prelude to an analysis of a wide range of options for meeting these needs, this paper establishes some of the basic projections in the outlook for Medicare's beneficiaries over the next 25 years. This initial set of projections assumes no change in policy—the so-called baseline—that can then be used to contrast with options simulated in companion papers. The model described in the paper begins with estimates of the overall Medicare program provided in the annual Trustees' reports on Medicare. These estimates serve as the basis for further projections of beneficiary burdens that arise from Medicare and from overall acute health care spending. Also briefly described is an alternative set of baseline numbers developed for the Bipartisan Commission on the Future of Medicare. The projections represent a serious attempt to examine what the numbers on health care spending will look like through the first quarter of the next century. Such efforts are difficult to do well and must be viewed in the context of the uncertainty attached to projecting of sensitive economic variables over such a long period of time.

The number of Medicare beneficiaries will grow rapidly in the future as the baby boom generation begins to be absorbed into the program after 2010. Moreover, longer life expectancies and a consistently high increase in the number of disability beneficiaries have already caused the Medicare population to grow over time as a share of the U.S. population. By 2025, the number of beneficiaries is expected to reach 69.3 million, representing 20.6 percent of the U.S. population. Just absorbing this many new beneficiaries would be a substantial challenge on its own. These numbers are summarized in the [summary table](#).

In addition, per capita expenditures are also expected to rise in real terms. While the benefit package for beneficiaries could remain unchanged, health care prices traditionally have grown faster than prices for other

goods and services, and new technology has changed the face of the delivery of care while also raising its costs. In real (inflation-adjusted) dollars, the per capita costs will rise from \$5,943 to \$10,235 in 2025.

Together, these two elements will cause the Medicare program (including both Parts A and B) to rise as a share of GDP from its current level of 2.7 percent to 5.3 percent in 2025. Despite these projections, the payroll tax rate that largely supports Part A spending has remained unchanged since 1986 and is projected to remain at 2.9 percent of payroll—or an amount just over 1.4 percent of GDP. This contrasts with the Part A share of Medicare, which is projected to reach 2.5 percent of GDP by 2025.

These striking numbers on the potential federal costs of the program often draw all of the attention. But this ignores the fact that Medicare has always required beneficiaries to contribute a substantial amount to the costs of covered services as a requirement of participation. In fact, if Medicare spending rises as assumed, the increase will likely occur in tandem with all health care spending, raising problems of affordability for health care for persons of all ages and placing greater burdens on beneficiaries for the portion of spending that they must bear. Thus, the analysis here builds on the numbers from the Trustees' report to estimate the costs that Medicare beneficiaries face.

Both Parts A and B of Medicare require certain cost-sharing contributions from beneficiaries in the form of deductibles and copayments. And Part B of the program requires a premium contribution equal to 25 percent of the costs of Part B.⁽¹⁾ Over time, current law will require a substantial increase in the share of the program that beneficiaries must contribute (referred to here as beneficiary liability). This is because Part B of the program is expected to rise faster than Part A over time, making the Part B premium a larger share of total program expenditures. Moreover, since the Part B cost-sharing is more burdensome than that of Part A, beneficiaries' liability will increase from its current 21.4 percent of the program to 25.8 percent in 2025.

Beneficiary liability does not fully capture the burdens actually borne by beneficiaries, referred to here as out-of-pocket costs. Some of the beneficiary liability—particularly the cost-sharing portion—is borne either by former employers who subsidize retiree supplemental policies or by Medicaid, which pays these liabilities for low-income participants. This relieves some beneficiaries of part of the liability amount. On the other hand, because Medicare's benefit package is not very generous, many additional medical expenses fall on beneficiaries. These costs are either paid directly by beneficiaries out of pocket or indirectly in higher private supplemental (Medigap) premiums. To account for both sets of differences, it is necessary to estimate out-of-pocket costs on a different data base, although assumptions about growth rates rely heavily on the liability growth rates in order to ensure consistency in the projections.

Our projections of the out-of-pocket costs that beneficiaries will face is \$4,855 in 2025—an increase of 94 percent over the 1998 level of \$2,508. These increased costs will rise much faster than the incomes of Medicare's beneficiary population. Hence, the out-of-pocket costs as a share of median income an average person experiences also rises over time to a projected level of 28.6 percent in 2025.

In summary, while Medicare's costs will rise to unprecedented levels in the future, this problem should not be viewed in a vacuum; it is not just a challenge for federal government spending. Rather, health care spending burdens will be an issue for persons of all ages, in all settings. Even under current law, Medicare beneficiaries will be paying a larger share of the overall costs of the program and more of their incomes in meeting these health care expenses. Policies for changing Medicare need to be viewed in this context; if policies merely shift costs from Medicare to beneficiaries and their families, many may be unable to meet these substantial new burdens. The challenges to Medicare stem from a combination of the rising costs of health care spending, a growing Medicare beneficiary population, and inadequate revenue contributions. Future solutions will likely need to address all three of these areas.

	1998	2025
Number of Beneficiaries (in millions)	38.8	69.3
(as share of U.S. population)	13.8%	20.6%
Medicare Spending (as a share of GDP)	2.7%	5.3%
Medicare Beneficiary Liability (per capita in 1998 dollars)		
Part B Premium	\$563	\$1,399
Cost Sharing	\$909	\$1,675
Total	\$1,472	\$3,074
Liability as a Share of Medicare Spending	21.4%	25.8%

Out-of-Pocket Costs (as a share of median income)	18.6%	28.6%
<i>Source:</i> Urban Institute analysis		

Medicare is the largest public health insurance program in the United States, providing the major source of health care coverage for elderly and disabled persons. It is also one of the most popular public programs, enjoying widespread support from both its beneficiaries and the population as a whole. Medicare has achieved its success while serving an ever-growing share of the U.S. population. In 1966, when the program started, fewer than one in ten Americans were covered by Medicare. Today that number is one in eight. Even more important, since 1970, Medicare's per capita growth has remained below that of private insurance, even accounting for the experience of the 1990s when private sector growth has been below that of Medicare.⁽²⁾

But major changes in Medicare and/or its financing will be required in the future. While incoming revenues from payroll taxes, benefits taxes, and other minor revenue sources flowing into Medicare's Part A (Hospital Insurance) trust fund will about equal the amount going to pay benefits over the next few years, that will change in the middle of the next decade.⁽³⁾ The 1997 Balanced Budget Act (BBA) helped to stabilize the picture for the next five to eight years, but after that period, benefits are projected to grow at a rate nearly twice as fast as revenues collected.⁽⁴⁾ And although Part B of Medicare is not financed with a dedicated tax, its benefits will be growing even faster than Part A, placing increasing demands on general revenues.

If there are no changes in policy, Parts A and B of Medicare would rise from their current level of 2.7 percent of gross domestic product (GDP) to consume 5.3 percent of GDP by 2025.⁽⁵⁾ And soon thereafter, spending on Medicare will surpass spending on Social Security, becoming the largest program in the federal budget.

Almost since its inception, Medicare's rate of spending has outpaced the growth in its revenue sources. Further, in 2010, the number of beneficiaries will begin growing faster than the number of workers contributing to the system. Consequently, to solve Medicare's financing problem solely by controlling expenditures, spending per capita would have to grow more slowly than wages in order to keep the system in balance—a feat not easily achieved in health care. In recent years, many employers have contributed much larger shares of total compensation toward health insurance, while Medicare's tax base has increased only modestly. For example, although the base subject to tax has gone up, the payroll tax rate for Part A (Hospital Insurance) has not risen since 1986. Over this same period, Medicare's per capita Part A spending rose by 111 percent while the number of beneficiaries increased from 32 million to more than 38 million.

Thus, the challenges facing Medicare stem from a combination of the rising costs of health care spending, a growing beneficiary population, and inadequate revenue contributions. Solutions need to be sought in all of these areas. This paper is the first in a series in which a full range of options for reforming Medicare will be considered. We begin this analysis with a look at future projections, assuming no change in policy—the so-called baseline numbers. These estimates define the likely scope of the problem and provide a basis of comparison for the impact of various policy changes.

Setting Up the Model

Projections of any economic variable into the future pose significant challenges. Most professional economic forecasters look only a year or two ahead, and even then caution their audiences about the likelihood of errors when underlying conditions change. Imagine then the difficulty of long-range forecasting of health care costs, the level of economic growth, and other key factors. Although the annual Trustees' reports on Social Security and Medicare must, by law, look 75 years into the future, that is an extremely ambitious undertaking and beyond the efforts of this project. Instead, the time horizon defined here is about 25 years, to the year 2025. At that point, most of the baby boomers will have passed the age of 65, so the effects of that demographic change can be taken into account. This shortens the period of time necessary to develop projections, thus helping reduce the key element of uncertainty inherent in these projections.

The model developed here began with the assumptions on economic variables used in the 1998 Medicare and Social Security Trustees' reports. This allowed us to generate a consistent set of numbers for Medicare spending, GDP, income, and inflation into the future. Projections from the Health Care Financing Administration (HCFA) actuaries also allowed us to translate the information into per capita numbers. Thus, all the numbers presented in the first part of the model on Medicare expenditures come directly from the estimates produced by the actuaries, with no new assumptions about behavior or other factors. To move from these numbers to projections of burdens on beneficiaries, overall health care expenditures, and the impacts of various reform options required the addition of more assumptions and manipulation of the basic Trustees' data. To keep the model as understandable as possible, we attempted to restrict the number of assumptions used and, where we believed there may be a range of possible values, to use more conservative estimates in order to generate projections that represented a minimum bound for the impacts on beneficiaries. These assumptions are described briefly in the text and covered in more detail in appendix A.

In keeping with the rules adopted by the Bipartisan Commission on the Future of Medicare, we also calculated two baselines for estimating the level of future spending on Medicare. The Medicare Trustees' intermediate projections assume that over time, there is a gradual decline in the rate of growth of per capita Medicare expenditures. Ultimately, it is assumed to approach the rate of GDP growth. A second baseline adopted by the Commission assumes instead that per capita Medicare spending will not slow over time, but continue at

growth rates experienced in recent years. All other factors are held constant. Because the Trustees' projections phase in this slowdown over time, the two baselines do not begin to diverge until after 2010.

It is important to note several concerns about the "no slowdown" or Commission baseline. While one could disagree with assumptions about the rate at which a slowdown would occur or the timing of such a slowdown, to assume no reduction in the growth of health care spending over time is likely to be unrealistic. As will be shown below, an assumption of no slowdown will result in overall health care spending that consumes an ever-larger share of GDP, rising at some point to a level that society would not tolerate. For example, are we willing to assume that we want to direct one-fourth of our national product to health care? Further, assuming a slowdown in growth rates does not implicitly build in policy assumptions; rather, it is consistent with assumptions routinely made that GDP growth will slow over time from its current level or that the CPI will increase somewhat in the future.

On the other hand, as will be shown below, assuming a slowdown in spending over time generates some caveats about how much impact various savings options can or will have on the program. Thus, the options presented in later papers that affect per capita spending growth will build in lesser impacts of policy changes over time as well, reflecting the underlying assumption of declining real rates of growth in per capita Medicare spending over time.

In this paper, we mainly use the Trustees' baseline but present some key findings using the Commission's approach. (More detailed findings using the Commission Baseline are contained in appendix B.)

Government Spending on Medicare

Over the period through 2025, baseline projections indicate that a substantial share of GDP will be directed toward the Medicare program. In 1998, combined Part A and B spending on Medicare amounts to 2.7 percent of GDP, rising to a projected level of 5.3 percent in 2025 (see [table 1](#)). This near doubling of the share of GDP coincides with a 74 percent increase in the projected number of beneficiaries over the same period. In 2025, 69.3 million elderly and disabled persons are projected to be eligible for Medicare under current program rules. Real per capita spending on Medicare expressed in 1998 dollars is thus expected to be \$10,235 in 2025 (see [table 2](#)). For this analysis, projections are consistently shown in real terms: that is, they have been corrected to adjust for the general rate of inflation in all consumer prices so that they can be compared to 1998 levels of spending and income.⁽⁶⁾

While these numbers indicate a rapidly growing program, baseline projections made before the passage of the Balanced Budget Act of 1997 set the share of GDP in 2025 at 6.47 percent.⁽⁷⁾ The current projections for 2025 are thus 18 percent lower than before enactment of the BBA. The BBA substantially reduced the projected rates of growth of Medicare spending by cutting per capita costs of the program. And although the reductions made in the BBA mainly apply to the years 1998 through 2002, the effects of these changes carry over to later years as well. [Chart 1](#) displays both aggregate and per capita annual rates of growth since 1970 and projected rates through 2025. Future projections imply a slowdown in the growth of real per capita Medicare spending as compared to the late 1970s and early 1980s. Per capita spending is low from 1998 through 2002, reflecting restrictions enacted under BBA. It is projected to be at a higher rate over the next 15 years, beginning a decline after 2017. This reflects the actuaries' assumption that growth in health care spending begins to approach GDP growth over time. These numbers suggest that, compared to the 1970s and 1980s, Medicare spending is expected to be quite low in real terms. [Chart 1](#) also helps to illustrate the rising role of the expanding number of program enrollees each year. The shaded area between the per capita and aggregate growth lines captures the impact of annual enrollee growth on overall spending.

Revenues for Medicare—especially for Part A, where sources of income are specified and earmarked—will lag behind projected expenditure growth. As the most readily identifiable revenue source, the payroll tax of 2.9 percent (a combined rate collected equally from employers and employees) has been constant since 1986 and is not scheduled to rise in the future. The tax base of all wages remains a relatively constant share of GDP over time—about 49 percent. Thus, as Medicare grows as a share of GDP, the tax base and other revenue sources will remain at nearly a constant share of GDP. Consequently, this funding source will be insufficient to cover projected costs by 2008. The date of exhaustion of the Part A trust fund, projected to occur in 2008 under current law, is one indicator of the relationship between income and outgo for the program.⁽⁸⁾

Another indicator used in describing the impact of various options on the Part A trust fund is the ratio of expenditures to income (excluding interest). A ratio of one would mean that expenditures and income are in long-term balance. The higher the ratio, the more the program needs to be constrained or revenues increased over time. This ratio is a valuable tool in projecting how far out of balance the system will be beyond 2008. It also makes the point that even after 2010, a substantial share of expenditures will still be covered by the existing payroll tax base. As shown in [chart 2](#), the ratio of spending to income reaches 1.82 in 2025.

The substantial rise in projected Medicare spending is a concern for the future, but focusing only on federal spending estimates leads people to restrict the debate to problems associated with federal financing of Medicare. In fact, if Medicare spending rises as assumed, such growth will likely occur in tandem with growth in all health care spending, raising problems of affordability for health care for persons of *all* ages, increasing the burden on Medicare beneficiaries for the portion of spending that they must bear. Thus, our analysis builds on the numbers from the Trustees' report to estimate the costs that Medicare beneficiaries will face and the resulting overall health care spending costs. These estimates illustrate the broader nature of questions about health care spending and will serve as the basis for later analysis of the impact of various options on beneficiaries.

Burdens on Beneficiaries

Two different measures of beneficiary burden are used in this analysis. The first, "beneficiary liability" captures the average amount that individuals are responsible for paying for covered benefits as a condition for participating in the program. Medicare requires both payment of a Part B premium and cost-sharing contributions from its beneficiaries⁽⁹⁾ But several adjustments are necessary to understand what burdens are actually borne by beneficiaries, referred to here as out-of-pocket costs. Some of the beneficiary liability—particularly the cost-sharing portion—is borne by former employers who subsidize retiree supplemental policies or by Medicaid, which pays these liabilities for low-income participants. However, because Medicare's benefit package is not very generous, many additional medical expenses fall on beneficiaries. These costs are either paid directly by beneficiaries out of pocket or indirectly in higher private supplemental (Medigap) premiums.

Beneficiary Liability. Beneficiary liability will rise over time as Medicare spending increases. This portion of out-of-pocket costs can be estimated directly from our Medicare projections, allowing the creation of a reliable and consistent estimate of what the average beneficiary is required to pay.⁽¹⁰⁾

The Part B premium is the simplest expense to project. Current law requires that the premium be set at 25 percent of Part B spending. This effectively reduces the amount of total Medicare spending that taxpayers must bear. [Table 3](#) provides projections of this premium as a share of GDP; in addition, we estimate the resulting "taxpayer share" of Medicare implied when the premium is netted out of total spending. Under the Trustees' baseline, premiums for Part B are projected to rise from \$563 in 1998 to \$1,399 in 2025 in real (inflation-adjusted) dollars. This constitutes a more than doubling of the size of the premium that most beneficiaries must pay.

Cost-sharing projections are more complicated. In this model, we assumed that beneficiaries who remain in fee-for-service (traditional) Medicare continue to be liable for a constant share of the spending components to which the cost-sharing applies (e.g., inpatient hospital services or physician services).⁽¹¹⁾ Increases are thus tied to the per capita growth rates of specific Medicare services to create estimates of cost-sharing increases. In most cases, this is a reasonable assumption since cost-sharing moves in tandem with reimbursement. However, BBA policy changes for outpatient hospital services will gradually lower the cost-sharing liability that individuals face in that portion of the program, while shifting these costs back to the federal government.⁽¹²⁾ We make a separate adjustment for Part B cost-sharing estimates to reflect this change. [Chart 3](#) shows per capita projections of beneficiary liability amounts. Average per capita cost-sharing is projected to rise more slowly than the premium, going from an estimated \$909 in 1998 to \$1,675 in 2025. Combining cost-sharing and the Part B premium, beneficiary liability would total \$3,074 in 2025 and represent an increase of 109 percent per capita even after controlling for inflation.⁽¹³⁾

These estimates also tell us the *share* of Medicare spending (over time) that beneficiaries will be responsible for under current law. At present, beneficiaries in traditional Medicare are responsible for about 21.4 percent of the costs of all Medicare-related expenses. The share will rise to 25.8 percent in 2025 in large part because the Part B premium will represent a larger portion of Medicare over time as Part B expenses rise relative to Part A.⁽¹⁴⁾ Thus, even without changes in Medicare policy, beneficiaries will be responsible for an increasing share of spending on these services over time. This measure also will be an important indicator of the impact of such options as a defined contribution approach.

Out-of-Pocket Burdens. There is, however, a difference between the costs that individuals must be responsible for and what they actually pay out of pocket at any one point in time. Low-income persons who participate in Medicaid and higher-income persons with employer-subsidized insurance are insulated from some of the beneficiary liability described above. However, since Medicare does not provide a fully comprehensive health insurance package, many beneficiaries face substantial out-of-pocket costs or premium charges for non-covered services. Thus, calculations of overall per capita out-of-pocket spending require a different set of numbers, focusing on what individuals actually pay. To do so, it is necessary to use an entirely different data base that allows these adjustments to be made. While we use the Medicare Current Beneficiary Survey for 1998's estimate projecting such expenses forward through time requires a consistent set of aggregate projections (such as are available for Medicare expenditures). Costs of insurance, prescription drugs and other noncovered services have been growing faster than Medicare and may continue to do so in the future, but these costs are not presently projected by anyone past the year 2008.⁽¹⁵⁾ Moreover, studies of recent trends in retiree health coverage show that employer-subsidized insurance is declining, suggesting that even more Medicare cost-sharing may be borne by beneficiaries over time.⁽¹⁶⁾

To obtain our estimate of total out-of-pocket spending for the community-based elderly population, we began with 1998 estimates of spending derived from work conducted by The Lewin Group for AARP.⁽¹⁷⁾ We use the growth rates described earlier for Part B premiums and Medicare cost-sharing. Growth rates for services beyond Medicare premiums and cost-sharing are linked to per capita Medicare spending estimates. These rates of growth are likely to represent a lower bound if, as seems likely, costs of insurance rise in tandem with Medicare, with more beneficiaries paying for this insurance on their own, and if drug costs continue to rise at rates above other health care spending. These estimates are summarized in [chart 5](#). For those remaining in fee-for-service, out-of-pocket expenses are assumed to reach \$4,855 in real terms in 2025.

What do these out-of-pocket burdens mean in terms of shares of income? To estimate this, it is necessary to project how much the incomes of Medicare beneficiaries will grow over time. We assume a growth rate of 0.8 percent above the growth in the Consumer Price Index (CPI) for Medicare beneficiaries at the median income level.⁽¹⁸⁾ This reflects both past experience and examination of the sources of income for the median group. For example, in 1975, the median income of a person over age 65 was \$10,309 (expressed in 1998 dollars).

Real growth in incomes averaged about 1.2 percent annually since 1975. This was, however, a period of high growth in incomes and GDP. Since GDP and wage growth are expected to be lower in the future, we assume a lower 0.8 percent real growth in income for the median-aged beneficiary. For those with the lowest incomes, who rely almost totally on Social Security and Supplemental Security income, a growth rate closer to the CPI would be appropriate. But the relationship over time between GDP and incomes for persons aged 65 and above suggests a rate at the higher end of the scale. At upper income levels, growth rates similar to the expected growth in wages (assumed by the Trustees to be 0.9 percent above inflation each year) would be assumed.⁽¹⁹⁾ Aged beneficiaries at about the median income level tend to rely upon Social Security payments for about 60 percent of their incomes. Thus, a rate of growth between Social Security and that expected for wages is appropriate. But the relationship over time between GDP and income for persons age 65 and above suggests a growth rate at the higher end of the range.

The results of these projections mean that an average person (that is, at the median income level) would have higher real income in 2025 of \$16,522 as compared to \$13,324 in 1998. This represents an income growth of about 24 percent over the period—and is substantially lower than the projected rate of 94 percent growth for health care spending over time.

Combining projected out-of-pocket spending and incomes results in fee-for-service estimates for acute health care spending of almost 19 percent of an average beneficiary's income in 1998, rising to nearly 29 percent in 2025. Projected shares of income devoted to out-of-pocket costs are shown in [chart 6](#) for selected years. The greater rises in the early years are a reflection of the impact of the increasing Part B premium over that period. And, as discussed above, after 2015, health care expenditures are projected to rise at a rate more in line with incomes of the elderly.

The impacts of these projections on persons with lower incomes would be even more dramatic. The initial shares would be higher and since income growth at the lower end of the income distribution is likely to be slower, the burdens of out-of-pocket costs will rise more rapidly over time.

Total Health Care Spending

To obtain estimates of total health care spending through 2025, we begin with HCFA estimates that extend through 2007. After that period, we apply Medicare per capita growth rates to the non-Medicare population (basing initial per capita spending amounts on spending net of all Medicare expenditures and related acute care services by beneficiaries as estimated above). That allows us to examine what total health care spending would be if everyone's cost of care rose at the same rate as Medicare. This is a conservative assumption based on recent experience; since 1970, Medicare spending has actually grown at a slower rate through 1996 than per capita spending under private insurance.⁽²⁰⁾ [Chart 7](#) illustrates the differences that arise between the two baselines using these assumptions. By 2025, the no slowdown (Commission) baseline would result in expenditures on health care that total over 25 percent of GDP; spending would also rise substantially under the Trustees' baseline, but only to about 19.2 percent of GDP. The numbers can be compared to the 1996 level of 13.6 percent of GDP.⁽²¹⁾ Is it realistic to assume that in just over 25 years, we will devote nearly twice as much of our gross domestic product to health care spending—which is the implication of the no slowdown baseline? Skepticism that we will devote a quarter of our national product to health care leads us to emphasize findings using the Trustees' baseline.

Health care in [chart 7](#) is split into the taxpayer share of Medicare, beneficiaries' out-of-pocket costs, and "other." The taxpayer share figure is an estimate of Medicare costs net of the Part B premium and represents an indication of what federal contributions would be required under the baseline assumptions. While it approaches 4.6 percent of GDP in the Trustees' baseline by 2025, beneficiaries' out-of-pocket-costs are over half that amount, or 2.6 percent of GDP. The estimate of other health care spending implicitly captures the fact that although numbers of Medicare beneficiaries are growing, the rest of the population will expand at a slower growth rate and hence health care spending will rise more slowly for the non-Medicare population.

Conclusion

What do these baseline estimates tell us about the future and what the impact of various reform options might bring? First, health care spending will grow substantially through 2025, even with the more optimistic assumptions in the Trustees' baseline. This will translate into substantial increases not only in federal spending on Medicare but also in burdens on Medicare beneficiaries and health care spending for persons of all ages.

While a number of people have noted that Medicare's costs will rise to unprecedented levels in the future, this problem should not be viewed in a vacuum. Health care spending will be a burden for persons of all ages, in all settings. Even under current law, Medicare beneficiaries will be paying an ever-larger share of their incomes for health care. Further, if policies to change Medicare merely result in a shifting of costs from Medicare to beneficiaries and their families, the total costs of health care would remain the same.

Appendix A

General Notes

Our projections begin with baseline numbers from the 1998 Annual Medicare and Social Security Trustee's reports. We also generate a set of projections using a modification of these assumptions. The so-called Commission or no slowdown baseline uses all the Trustees' assumptions except that instead of assuming a general slowdown in the rate of growth of Medicare per capita expenditures after ten years, this alternative

baseline assumes a continuation of higher health care spending indefinitely. (It is described in more detail in Appendix B.) Nominal and real dollar versions of all projection models are created using the Trustees' assumptions of the Consumer Price Index over time.

Basic Medicare Expenditure Baseline

Medicare expenditures for Hospital Insurance (HI or Part A) and Supplemental Medical Insurance (SMI or Part B) from 1998-2007 use estimates from the 1998 Trustees Report that are expressed in nominal dollars. After 2007, HI and SMI expenditures are calculated from the estimates of spending reported as a percentage of GDP. The GDP projections used to translate HI and SMI percentages into dollars also come from the 1998 Trustees Report (reported in detail on the Social Security Administration website). In the year 2008, the Trustees report projected GDP to be \$13,540 billion. HI and SMI's share of GDP in 2008 is approximated at 1.73 and 1.51 percent respectively. The calculated HI outlays are \$234.24 billion and the calculated SMI outlays are \$204.45 billion. All estimates are based on calendar year.

Another important figure used here is the "taxpayer share" of Medicare -- that is, the amount net of what beneficiaries pay in Part B premiums. This effectively captures what taxpayers must expect to pay over time if the requirements for Part B premiums remain the same. The formula used for taxpayer share is $[HI's \text{ percentage share of GDP} + (75\% \text{ of SMI's percentage share of GDP})]$.

HI and SMI enrollment estimates were obtained from the Office of the Actuary of the Health Care Financing Administration (HCFA) as of July, 1998. The enrollment numbers were in fiscal terms and were converted to produce calendar year estimates. For example, for HI enrollment in the year 2000, we added 75% of the total enrollment ($0.75 * 39,514$) for 2000 and 25% of the total enrollment for 2001 ($0.25 * 37,178$).

Per capita projections divide HI and SMI aggregate outlays by HI and SMI enrollment figures. For example in 2002, HI per capita costs are \$3,957 and SMI per capita costs are projected at \$3,107. In 2002, per capita outlays for HI and SMI in real dollars are \$3,616 and \$2,840.

Beneficiary Liability

Beneficiary liability is the term used for estimates of Part B premiums and Medicare required cost sharing. Per capita Part B premiums are calculated by taking 25% of SMI expenditures. The premium for 2002 is \$777 (25% of SMI, or \$3,107).

Developing the cost-sharing baselines require more manipulation and assumptions than the Medicare expenditures baseline. All cost-sharing figures are based on adjusted per capita numbers. The first step requires calculating per capita expenditures for inpatient, SNF, and SMI benefits. The Medicare and Medicaid Cost Estimates Group of the Office of the Actuary provided benefit projections which were used to calculate inpatient, SNF and SMI benefit expenditures from 1998-2008. Enrollment numbers broken down into fee-for-service and managed care beneficiaries are also from the Office of the Actuary (April 30, 1998 estimates). Aggregate inpatient expenditures were divided by enrollment excluding managed care beneficiaries to obtain adjusted per capita inpatient costs. The same process is used to find per capita expenditures for the SNF benefit. The SMI per capita figures used here are calculated by adding the aggregate outlays excluding home health and managed care expenditures and dividing the amount by enrollment excluding managed care beneficiaries.

From 1998-2008, inpatient and SNF cost-sharing is calculated as a percentage of total expenditures, 8.39 percent and 26.90 percent respectively. These percentages represent cost sharing as a percentage of expenditures between 1992 and 1995. These numbers come from HCFA's *Health Care Financing Review: Medicare and Medicaid Statistical Supplement, 1997*. Inpatient and SNF cost-sharing costs from table 18 were divided by per capita inpatient expenditures and SNF expenditures. These percentages are then applied to the specific per capita service figures through 2008. This can only be done until 2008 because projections of specific services are only available through that year. In order to compute cost-sharing after 2008, we calculate the proportions on the basis of aggregate HI amounts, implicitly freezing the share of each service type over time.

A calculation method similar to the one used for inpatient and SNF cost-sharing between 1998-2008 is used for SMI cost-sharing for 1998-1999. An average proxy percentage of SMI cost-sharing from 1992-1995 is derived from HCFA's *Health Care Financing Review: Medicare and Medicaid Statistical Supplement, 1997*. But, SMI requires additional adjustments to account for policy changes that lower the traditionally high estimates of outpatient cost-sharing in the future. Thus, after 1999, to adjust downward outpatient cost-sharing, we used estimates from the 5% Medicare Claims file that allowed us to calculate the hospital outpatient share of SMI cost sharing and the amount by which it will decline over time in response to legislation in the Balanced Budget Act of 1997. This adjustment when fully implemented will result in cost sharing 2.25 percentage points lower than the 1992-1995 average of 31.65 percent. The reduction is phased in from 2001 through 2005. Thereafter, SMI cost-sharing as a percent of SMI expenditures remains at 29.40 percent.

To find the SMI cost-sharing from 1998-2008, the new per capita expenditures (as described above) are multiplied by SMI's cost-sharing percentage of expenditures. HCFA does not provide projections for specific services after 2008, so there is no available data to disaggregate SMI spending. Consequently, we use the 2005 through 2008 average ratio of SMI spending subject to cost sharing to project forward through 2025. This implicitly assumes that home health remains a constant share of SMI expenditures between 2008 and 2025.

Out-of-Pocket Expenditures

Medicare out-of-pocket expenditures are all acute health care costs incurred by beneficiaries residing outside of institutions. In its paper "Out-of-Pocket Health Spending by Medicare Beneficiaries Age 65 and Older: 1997 Projections," the Lewin Group finds that traditional beneficiaries in the community spent \$2,454 on health care. This figure serves as the basis for our analysis. The first adjustment we calculate translates this figure into a full year amount for 1998.

To project out-of-pocket costs into the future, we implicitly divide this estimate into three parts: the Part B premium, cost-sharing, and residual "other" expenditures (such as Medigap insurance premiums, dental and vision care and prescription drugs). Premium and cost-sharing projections are those calculated and reported above. We use them as the major driver for the future estimates of levels of spending because they can be linked directly to Medicare expenditure projections. Thus, changes that shift costs from the federal government to beneficiaries (or vice versa) can be estimated in a fashion that results in consistent estimates.

The third component is a residual calculated for 1998 as the difference between the premium and cost sharing liabilities derived from Medicare data and what individuals actually pay. The residual component implicitly captures two sets of adjustors. The first would reduce the beneficiary liability estimate for amounts paid by other payers (including Medicaid and employer-subsidized premiums). The second adjustor is for additional acute care expenses not covered by Medicare, particularly including prescription drugs and dental and vision services. Also in this second piece would be the administrative loads that beneficiaries pay when they purchase private supplemental insurance to cover the costs of Medicare beneficiary liabilities. The residual piece of 1998 out-of-pocket spending is assumed to grow at the same rate as per capita Medicare costs. For reasons described in the text of the paper, this is likely to be a conservative estimate of the costs of care that individuals will face in the future.

Income for the Typical Beneficiary

Income projections begin with the 1997 median per capita income for Medicare beneficiaries aged 65 and above from the 1998 Current Population Survey. Per capita income for those residing in larger families is estimated as family income divided by the number of family members. The 1998 figure we use is \$13,324. We choose to use an estimate for income growth that may well understate the share of income that will be devoted to health care over time. The annual growth rate assumed for individuals is 0.8 percent per year -- an amount closer to the rate of growth of wages than to the rate of growth of Social Security benefits. As described in the text, we chose a figure at the upper end of the possible range to avoid understating income for this group. By 2025, median income is expected to be \$16,522.

To calculate the share of income spent per capita, we divide average out-of-pocket spending by median income. In earlier studies, it has been shown that the best measure of share of income spent would first calculate that percentage for each individual and then average those averages. Since that is not possible with aggregate data, dividing average spending by median income comes closer to capturing an appropriate figure. This is because health care spending is less heavily skewed than income. Using averages for both would thus result in percentages that are too low. Even dividing average spending by median income still tends to give results on the low side. Indeed, in the AARP/Lewin study, shares of income were closer to 21 percent rather than the 18.6 percent shown here for 1998.

Total Health Care Expenditures

For projection purposes, this paper divides health care expenditures into three major components -- the Medicare taxpayer share, out-of-pocket spending by Medicare beneficiaries on acute care services, and "other" health care services. To obtain aggregate amounts of taxpayer share and out-of-pocket amounts, we multiply the per capita figures by the total number of expected Medicare beneficiaries even though the out-of-pocket numbers are based on the age 65 and over population residing in the community. This implicitly treats the disabled and the elderly in institutions as having the same level of out-of-pocket costs as the community dwelling elderly. This is likely to only modestly understate acute care spending because the younger disabled (aside from the End Stage Renal Disease group) have Medicare expenses very similar to those of the elderly. And although spending by those in institutions may be somewhat higher on acute care services, the numbers of persons affected are relatively small. Also omitted from these calculations are the costs of care borne by Medicaid and employers for the Medicare population. The biggest expense omitted from the Medicare population is the costs of institutional care. Rather than generating a separate estimate for these omitted amounts, we allow these expenses to implicitly be placed in the "other" category. Since the per capita growth in that spending category projected over time is lower than for the Medicare population (as is described below), this gives us an estimate that likely errs on the side of understating total health care spending.

The HCFA projections on total health care spending that are used here to give us the total amount of spending over time are only available through 2007. After that we create our own projections of health spending costs. To do so we take the difference between what is expected to be spent in 2007 and subtract our earlier developed estimates for Medicare taxpayer share and out-of-pocket expenses. The residual is then divided by the non-Medicare population to create a per capita amount. That amount is then projected through time using Medicare per capita growth rates and multiplied by the total population net of Medicare beneficiaries. Because the Medicare growth rates are consistent with the other indicators for the economy we use (that come from the Medicare Trustees' assumptions) and, because over time, growth rates between Medicare and private insurance are relatively comparable on a per capita basis, we believe that this is a reasonable approach. This population group is growing slower than the Medicare group, so as expected, other health care costs also grow more slowly over time. (And because we pick up some costs of the elderly and disabled in the "other" category, we are likely understating somewhat the total costs of health care over time.)

Nonetheless, these estimates indicate that total health expenditures will account for an increasing share of GDP over time. This lends credence to the approach used in the Trustees' baseline of moderating the presumed rate of growth of Medicare into the future; otherwise, health care spending would take up an inordinate share of GDP. Using the Commission baseline (described in more detail in Appendix B) results in about one-fourth of GDP devoted to health care spending by 2025.

Appendix B

For purposes of simplicity, we mainly present results in this paper only in terms of the Trustees' baseline. But because the Medicare Commission is also using a second baseline, it is relevant to consider its impacts on our findings as well. This second baseline differs on only one dimension from the Trustees' baseline and that is with the assumption of a gradual decline in the per capita rate of growth of Medicare spending over time. The Trustees assumptions recognize that unless health care spending slows over time, it could rise enough to represent an untenable share of Gross Domestic Product (GDP). The second baseline assumes that Medicare spending will not slow as the Trustees baseline assumes, but continue at growth rates experienced in recent years.

As a consequence, the two baselines begin to diverge after 2010. This can be seen in [Chart B.1](#) which indicates what the long term growth rates would look like under this alternative baseline. The biggest differences occur after 2015 (as can be seen by comparing [B.1](#) with [Chart 1](#)).

The two baselines also result in substantially different estimates of the size of overall health care spending and of the burdens that beneficiaries will face in the future if spending grows at the levels assumed in these baselines. The results on overall health care spending are shown in the text of the paper ([Chart 7](#)).

[Chart B.2](#) indicates that this no slowdown baseline would also imply substantially greater beneficiary liabilities as compared to the Trustees' baseline ([Chart 3](#)). By 2025, for example, the total liability amount would reach \$4051 per capita, as compared to \$3,074 under the Trustees' baseline. The amount from these projections would thus mean a potential burden on beneficiaries 32 percent higher than the baseline we have been using. This would translate into out-of-pocket burdens that would be approximately the same magnitude higher as well.

Notes

1. Although Part B of Medicare is voluntary, most beneficiaries participate because its costs are subsidized. In addition, those who participate in the managed care option must pay the Part B premium and often have some cost-sharing requirements as well. This analysis focuses on the large majority of beneficiaries still in the traditional part of the program.
2. Marilyn Moon and Misha Segal. "Beneath the Averages: An Analysis of Medicare and Private Health Expenditures." The Kaiser Family Foundation, forthcoming.
3. Part B of Medicare funds physician, hospital outpatient, and other ambulatory services. It is a voluntary part of the program, but because the premiums that people are required to pay support only 25 percent of the costs, most beneficiaries enroll. The balance of the funding comes from general revenues.
4. Board of Trustees of the Federal Hospital Insurance Trust Fund. *1998 Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund* (Washington: USGPO, 1998).
5. Board of Trustees, 1998.
6. Without this adjustment, the numbers would be very large indeed, with per capita Medicare spending totaling \$24,349 in 2025, for example. But other parts of the economy—such as the incomes of the beneficiaries—would also change as well.
7. Board of Trustees of the Federal Hospital Insurance Trust Fund. *1997 Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund* (Washington: USGPO, 1997).
8. While spending is already above annual income flows, a trust fund balance of about \$108 billion will keep the program solvent until 2008. Board of Trustees, 1998.
9. While Part B participation is optional, few beneficiaries decline to enroll unless they are covered by other insurance that is primary. Cost-sharing refers to copayments and deductibles for those in traditional Medicare.
10. This measure is based on those in traditional Medicare and thus excludes those enrolled in Medicare's private options. In practice, many of these plans have lower out-of-pocket cost liabilities.
11. Estimating beneficiary liabilities for those in Medicare + Choice adds another set of calculations. More detailed work will be completed in a later analysis. For this set of papers, we use a simplified adjustment described below for measuring total out-of-pocket costs.
12. Historically, cost-sharing for outpatient services was linked to charges made by hospitals rather than to Medicare's reimbursement levels. This problem was corrected by the BBA.
13. Numbers that would result from using the Commission baseline are even more dramatic in the years after

2015. The premium under Part B would more than triple as compared to 1998 and the combined cost-sharing and premium liability would rise to \$4,051—a 175 percent increase over 1998.

14. This is in part because of differential growth rates in services, but also because of the shift of much of expenditures on home health from Part A to B.

15. Smith et al. "The Next Ten Years of Health Spending: What Does the Future Hold?" *Health Affairs* vol. 17, No. 5 (September/October 1998), pp. 128-40.

16. Hewitt Associates LLC. *Retiree Health Trends and Implications of Possible Medicare Reforms*. Henry J. Kaiser Family Foundation, September 1997.

17. AARP Public Policy Institute and The Lewin Group. "Out-of-Pocket Health Spending by Medicare Beneficiaries Age 65 and Older," *AARP*, December 1997.

18. Median income of \$13,403 in 1997 for persons over age 65 is calculated from the Current Population Survey.

19. Smith et al. 1998. Because the changing mix of the population as older, lower-income persons die and newer beneficiaries are just turning age 65, growth rates are assumed to be a little higher than growth in the sources of income.

20. Moon and Segal forthcoming.

21. Smith et al. 1998

Tables & Charts

Year	HI	SMI	Total Medicare	HI	SMI	Total Medicare	Number of Beneficiaries (in Thousands)	Share of U.S. Population (Percentage)
	As a Share of GDP			(In Billions of 1998 Dollars)				
1998	1.71%	0.99%	2.70%	\$144	\$83	\$226	38,756	13.80%
2000	1.64%	1.07%	2.71%	\$144	\$94	\$238	39,756	13.90%
2005	1.67%	1.34%	3.01%	\$162	\$130	\$291	42,325	14.30%
2010	1.78%	1.67%	3.45%	\$188	\$176	\$364	46,647	15.20%
2015	1.97%	2.14%	4.11%	\$224	\$243	\$467	53,413	16.80%
2020	2.22%	2.48%	4.70%	\$268	\$299	\$568	61,118	18.60%
2025	2.52%	2.80%	5.32%	\$322	\$357	\$679	69,321	20.60%

Source: Urban Institute analysis of the 1998 Trustees' Report.

Year	HI	SMI	Total Medicare
1998	\$3,705	\$2,248	\$5,953
2000	\$3,633	\$2,520	\$6,153
2005	\$3,816	\$3,299	\$7,115
2010	\$4,031	\$4,102	\$8,133
2015	\$4,187	\$4,959	\$9,146
2020	\$4,386	\$5,349	\$9,735
2025	\$4,641	\$5,595	\$10,235

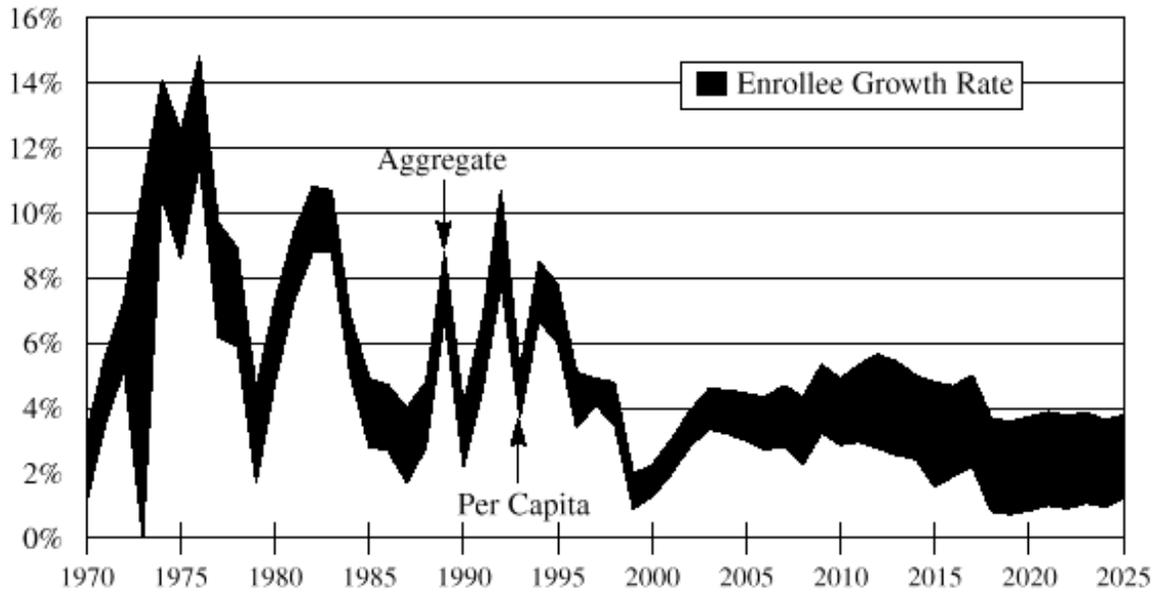
Source: Urban Institute Analysis of the 1998 Trustees' Report

Table 3
Allocation of Medicare Baseline Projections
Between Part B Premium and Taxpayer Share

Year	Taxpayer Share	Part B Premium	Per Capita Part B Premium
	(as a share of GDP)		
1998	2.45%	0.25%	\$563
2000	2.44%	0.27%	\$630
2005	2.68%	0.34%	\$825
2010	3.03%	0.42%	\$1,026
2015	3.58%	0.54%	\$1,240
2020	4.08%	0.62%	\$1,337
2025	4.62%	0.70%	\$1,399

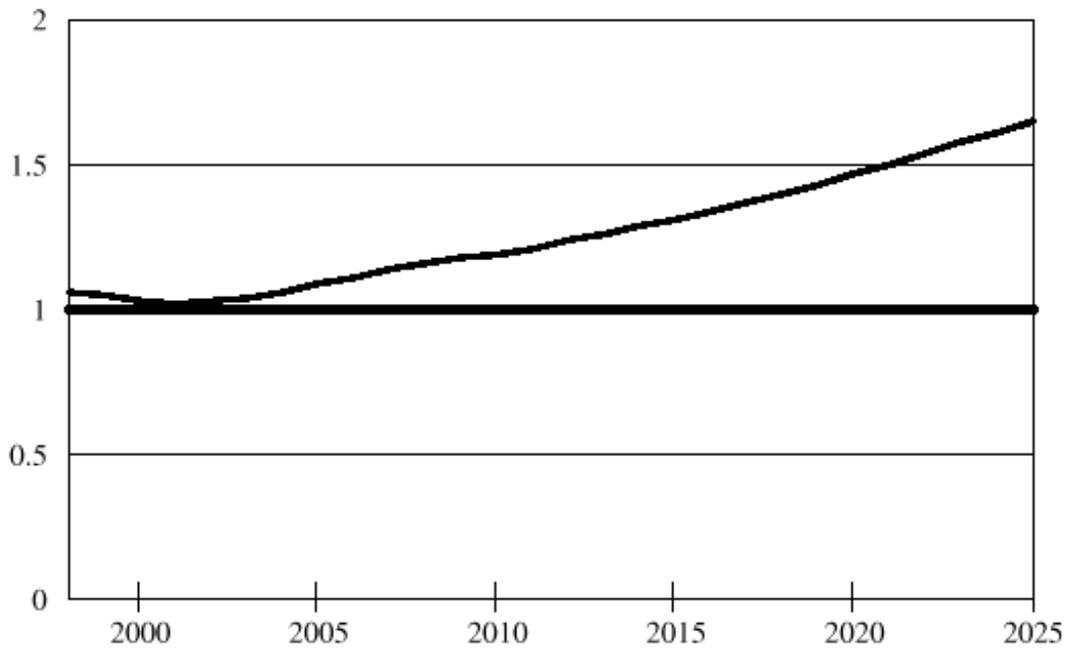
Source: Urban Institute Analysis of the 1998 Trustees' Report

Chart 1
Real Rates of Aggregate and Per Capita Growth
in Medicare Expenditures (1970-2025)



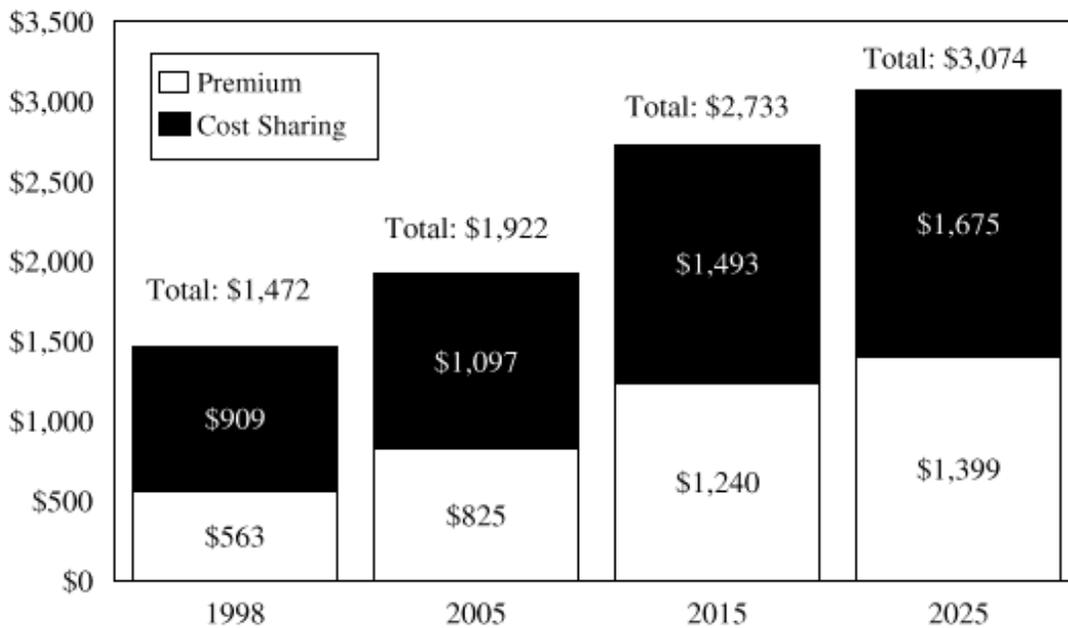
Source: Urban Institute analysis of National Health Expenditures and 1998 Trustees' Report.

Chart 2
Ratio of Projected Part A Expenditures to Revenues



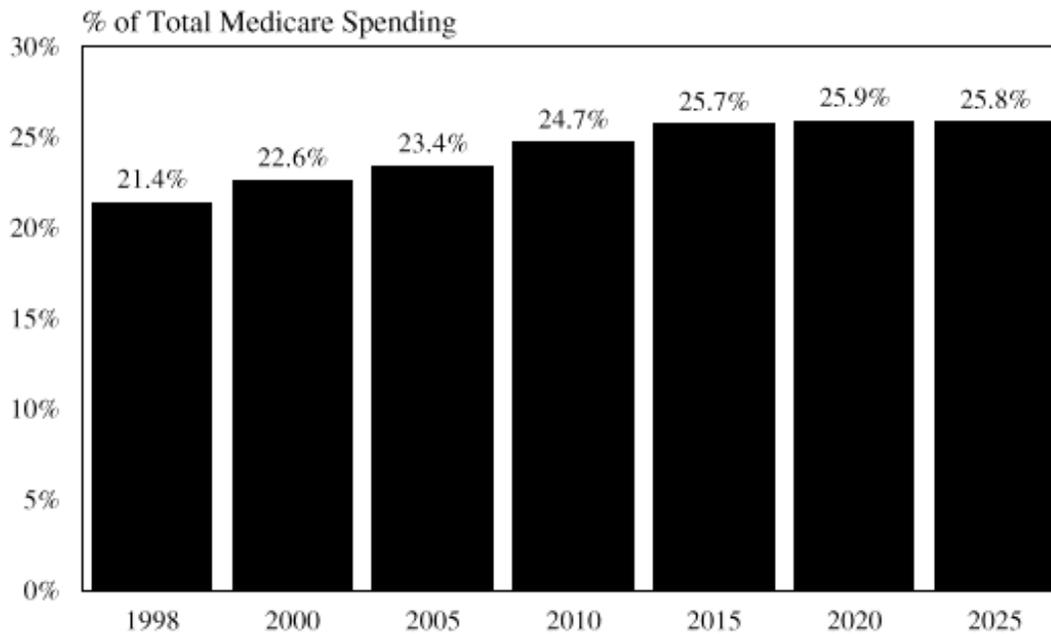
Source: Urban Institute analysis of 1998 Trustees' Report.

Chart 3
Projections of Traditional Medicare Beneficiaries' Average Per Capita Liabilities (1998 Dollars)



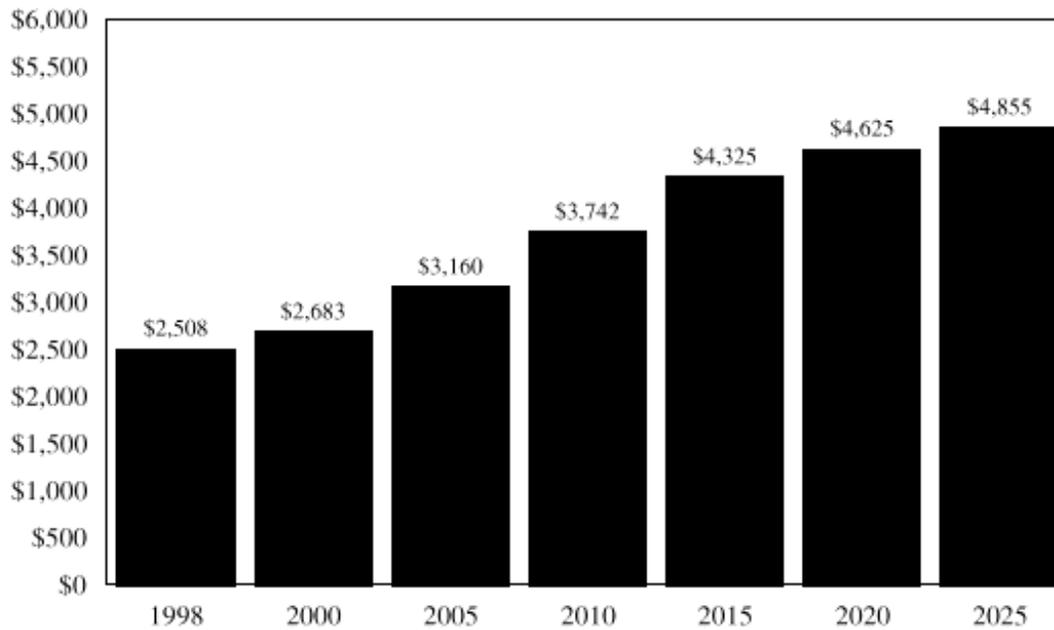
Source: Urban Institute analysis.

Chart 4
Beneficiary Liability as a Share of Total Medicare Spending



Source: Urban Institute analysis.

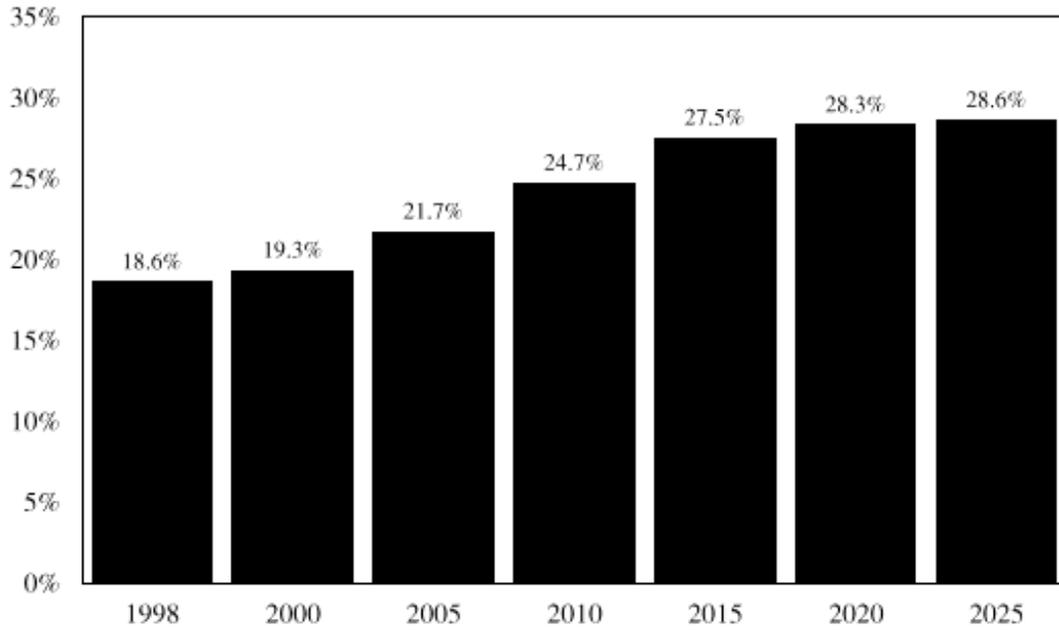
Chart 5
Out-of-Pocket Spending Projections for Elderly Medicare Beneficiaries in Traditional Medicare in 1998 Dollars



Source: Urban Institute analysis.

Chart 6

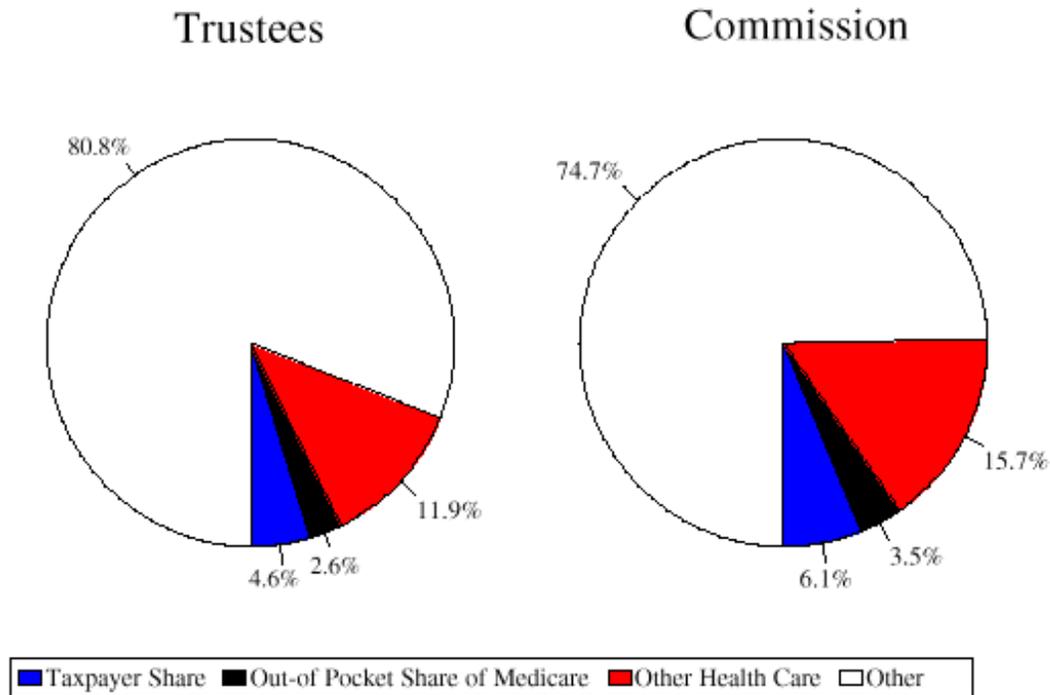
Out-of-Pocket Spending Projections for Typical Elderly Medicare Beneficiary in Traditional Medicare as a Share of Income



Source: Urban Institute analysis.

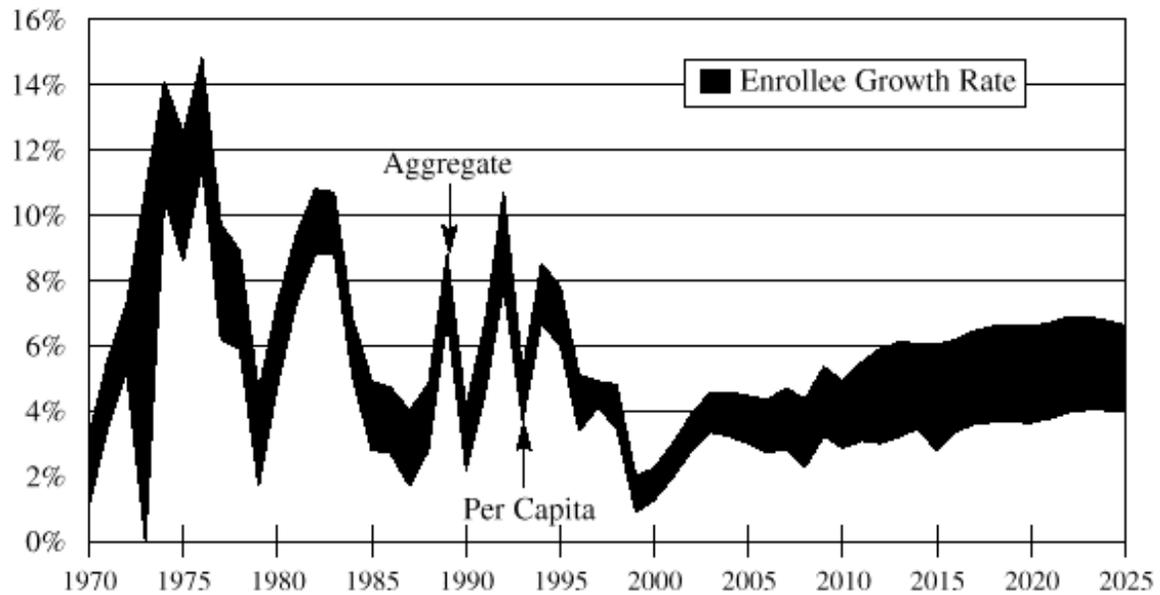
Chart 7

Projections of Health Care as a Share of GDP in 2025



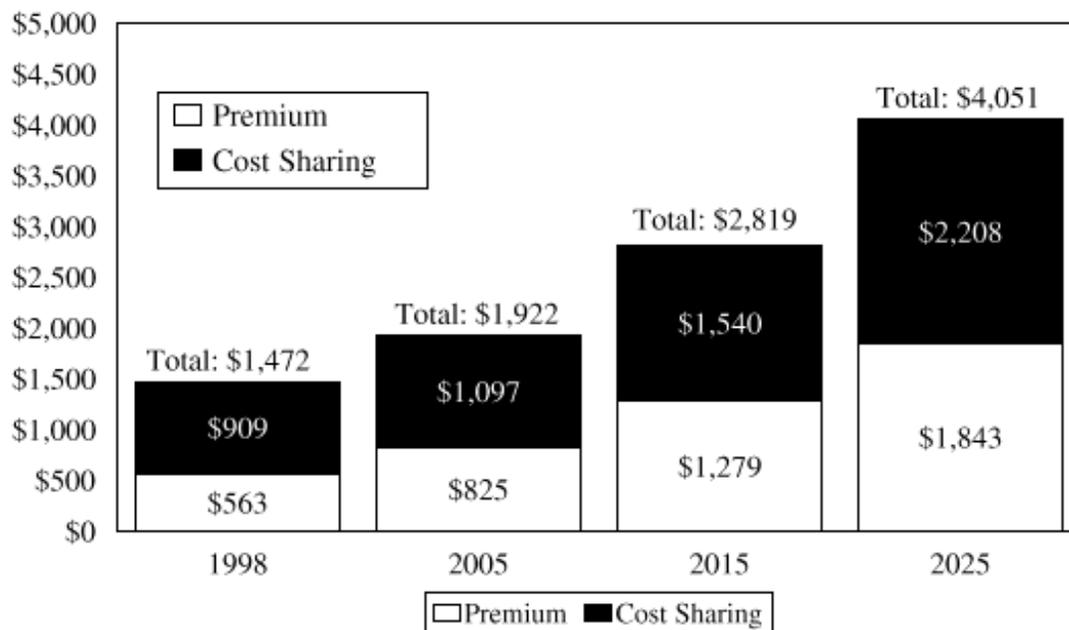
Source: Urban Institute analysis of National Health Expenditures, 1998 Trustees' Report, and 1998 Commission Report.

Chart B.1
Real Rates of Aggregate and Per Capita Growth in Medicare Expenditures, Commission Baseline (1970-2025)



Source: Urban Institute analysis of National Health Expenditures and 1998 Commission Baseline.

Chart B.2
Projections of Medicare Beneficiaries' Average Per Capita Liabilities in 1998 Dollars, Commission Baseline



Source: Urban Institute analysis of the 1998 Commission Baseline.

Other Publications by the Authors

- Marilyn Moon

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