

# Policy Analysis

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Routing

## *Medicaid's Soaring Cost Time to Step on the Brakes*

by Jagadeesh Gokhale

### Executive Summary

Current trends and policies imply unsustainable growth in federal Medicaid outlays. In the year 2006, federal Medicaid spending was 11.9 percent of federal general revenues and 1.5 percent of GDP. Making conservative assumptions about future growth in Medicaid enrollment and spending per beneficiary, this paper estimates that the present value of federal Medicaid outlays over the next 100 years will take up 24 percent of the present value of federal general revenues and 3.7 percent of the present value of GDP calculated over the same period.

By the end of the next 100 years, that is, in the year 2106, Medicaid's share of federal general revenues will be 48 percent—four times larger than its 11.9 percent share in 2006. In the year 2106, federal Medicaid spending as a share of GDP is estimated to be 7.4 percent—a fivefold increase from its current share of 1.5 percent. If the federal government continues to match state Medicaid outlays at the current rate, Medicaid's share of GDP in the year 2106 will become 13

percent—or one-eighth of GDP in 2106.

If current policies and trends are maintained, federal Medicaid outlays will take up 36 percent of lifetime federal general revenue taxes for males born in 2025 and 69 percent for females born in that year. For females born after 2050, almost all of their lifetime federal nonpayroll taxes will be consumed by their lifetime Medicaid benefits.

Higher tax rates cannot plausibly cover this growing spending commitment. On average, today's 35-year-old males are projected to have 15 percent of their lifetime federal general revenues returned in the form of Medicaid benefits. Maintaining that ratio for today's newborn males would require a 78 percent increase in their lifetime nonpayroll taxes. Limiting Medicaid spending growth is, thus, an essential component of putting the federal budget on a sustainable course without imposing crushing tax burdens on younger and future generations, thereby harming the prospects for future economic growth.

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**Today, as much as one-fifth (20.3 percent) of the U.S. population is dependent on Medicaid benefits at some point during the year.**

## Introduction

Federal budget watchers usually consider Social Security and Medicare the main sources of long-term budgetary concern.<sup>1</sup> But Medicaid, as projected under current policies, will also impose tremendous additional pressures on federal and state budgets. Allowing Medicaid spending to grow as in the past would either significantly crowd out spending on other government operations or increase pressure for more tax hikes. This paper mainly focuses on the impact of Medicaid spending growth on the *federal* budget.<sup>2</sup>

Medicaid consists of a collection of state-operated health care programs for individuals with (1) low incomes and assets and/or (2) high medical expenses. Many groups have strong incentives to lobby for expanding tax-financed health care subsidies for low-income and high-health-risk populations. Their success is evidenced by the progressive expansion of Medicaid over the years so that, today, as much as one-fifth (20.3 percent) of the U.S. population is dependent on its benefits at some point during the year.

Both state and federal governments finance Medicaid's outlays. Federal Medicaid outlays have been growing especially rapidly since the early 1990s. Federal financial participation for each state is determined under a "matching grant" formula. Federal outlays have increased over time as states have liberalized Medicaid eligibility rules and extended coverage to medically or economically disadvantaged groups.

To project future federal outlays, this paper first estimates Medicaid enrollment and spending per beneficiary from various years of the Current Population Survey. A cohort data set is constructed beginning with data from the 1988 CPS on Medicaid enrollment and benefits per recipient, by both age and gender. Those data provide estimates of age- and gender-specific growth rates of Medicaid enrollment and benefits per enrollee. The two growth rates are used together with the Social Security Administration's population projections by age and gender

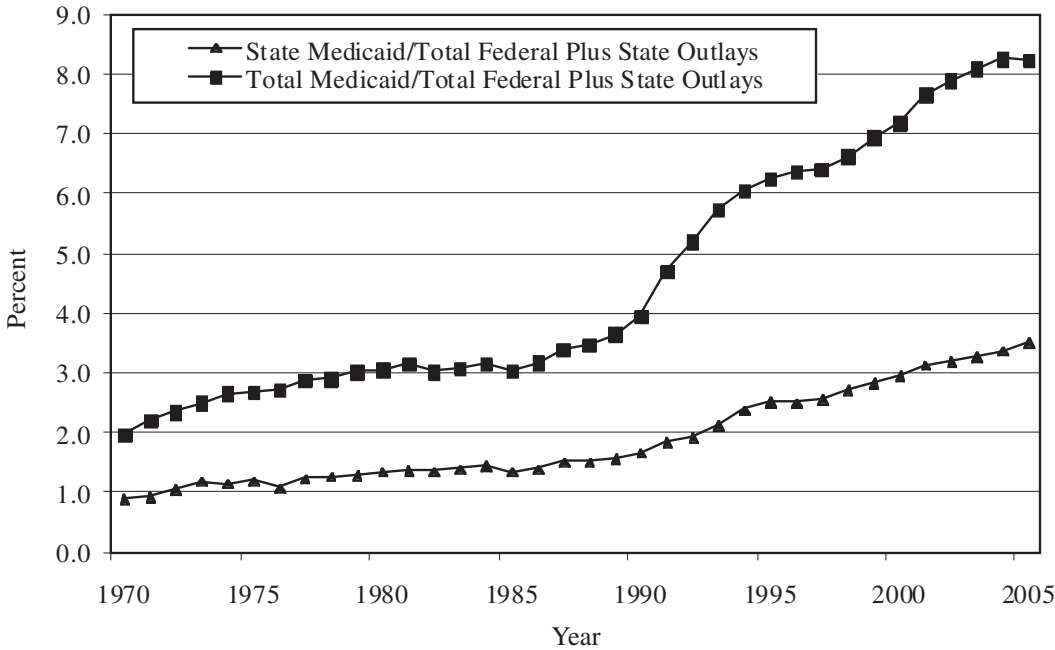
and the Congressional Budget Office's estimate of Medicaid's expenditure-to-GDP ratio in 2075 to calibrate projections of total Medicaid expenditures beyond 2075. The projection methodology yields Medicaid benefits per capita by age and gender that can be used to project (1) the extent of budget pressure that Medicaid will generate for the federal budget and (2) how large Medicaid benefits would become relative to projected federal general revenues on a cohort-by-cohort basis.

To preview the results, today's newborn males would receive about 28 percent, and females about 54 percent, of their lifetime federal nonpayroll taxes back by way of federal Medicaid benefits, per capita. If those policies and trends continue for a few more decades, federal Medicaid outlays will take up 36 percent of lifetime federal general revenue taxes for males born in 2025 and 69 percent for females born in that year. For females born after 2050, Medicaid outlays as a share of federal general revenues will be close to 100 percent.

Returning such a high share of each generation's general tax revenues by way of Medicaid benefits—a result of Medicaid's rapid outlay growth—is inconsistent with maintaining growth in other federal services at the same pace as GDP *and* maintaining taxes at current rates. However, increasing income and other nonpayroll taxes by enough to reduce Medicaid's expenditure share of nonpayroll revenues would impose implausibly large fiscal burdens on future generations.

For example, today's 35-year-olds are projected to receive 15 percent of their general revenue taxes back in the form of lifetime Medicaid benefits, on average. Ensuring that the same result holds for today's newborns would require a 78 percent increase in their lifetime nonpayroll taxes. A similar calculation for newborn females shows that their lifetime nonpayroll taxes would have to be increased by 62 percent. Those projections and calculations indicate that limiting Medicaid spending growth is necessary to place the federal budget on a sustainable course.

**Figure 1**  
**State and Total Medicaid Outlays as Shares of Total Federal Plus State Outlays**



Source: Congressional Budget Office.

The Deficit Reduction Act of 2005 enacted reductions in the growth of future Medicaid outlays of less than \$5 billion between fiscal years 2006 and 2010.<sup>3</sup> Congress further enacted a \$10 billion reduction in Medicaid outlay growth in 2006, though not without considerable resistance from the program’s supporters. However, compared to the reductions in future outlay growth required to keep the federal budget on a sustainable path, those Medicaid cuts are small potatoes. They would hardly dent future spending pressures emanating from growing enrollments and rapidly rising health care costs. The stark arithmetic of the generational results reported in this paper would remain largely unchanged.

### Projecting Medicaid’s Future Cost

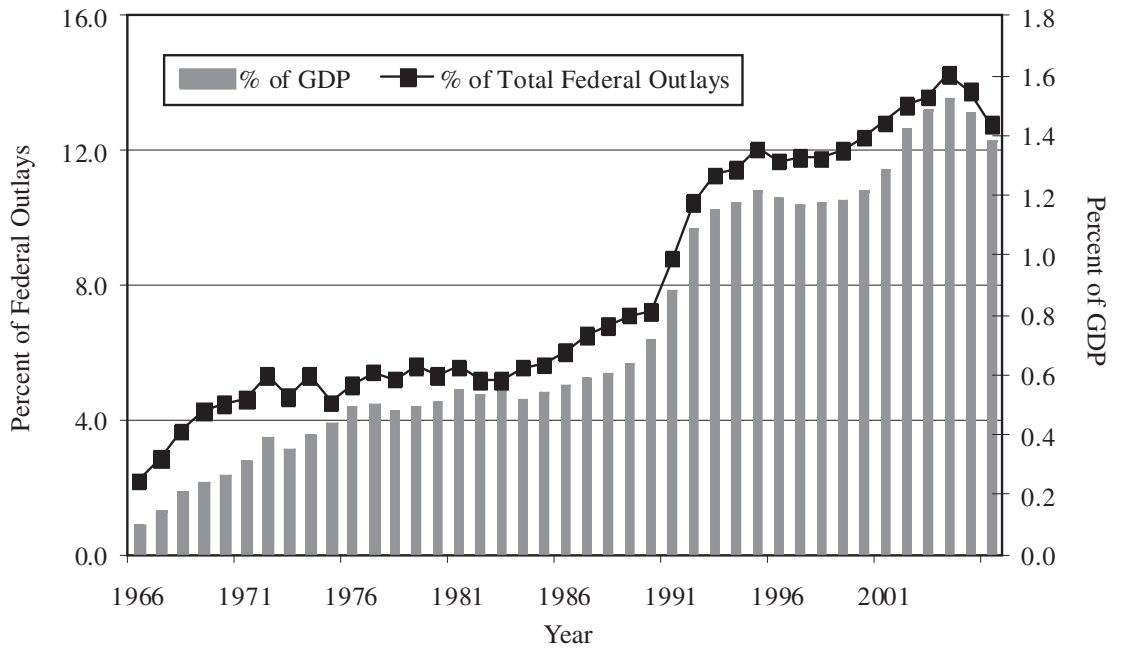
Many groups have strong incentives to lobby for expanding Medicaid, including health care providers, estate planners advising

clients about how to qualify for Medicaid’s valuable long-term care and nursing home benefits, and employers and insurers wishing to improve the health risk characteristics of private insurance purchasers. State governments also typically seek to maximize federal Medicaid matching contributions.

Figure 1 shows the historical growth of both state and total Medicaid outlays as shares of total federal and state spending. The figure clearly shows that most of the post-1990 surge in the share of total Medicaid spending in total government (federal and state) spending is from exploding *federal* Medicaid outlays. Changes in federal financial participation rules—Disproportionate Share Hospital reimbursements without caps—allowed states to claim additional Medicaid reimbursements from the federal government.<sup>4</sup> States’ incentives to increase access to federal funds through that mechanism were strengthened because of the severe budget crunch and steep increases in Medicaid enrollments caused by the 1991 recession. According to the historical

**Most of the post-1990 surge in Medicaid spending as a share of total government spending is from exploding federal Medicaid outlays.**

**Figure 2**  
**Federal Medicaid Outlays as a Percentage of Total Federal Outlays and as a Percentage of GDP**



Source: Congressional Budget Office.

account by John D. Klemm of the Office of the Actuary at the Centers for Medicare and Medicaid Services, Medicaid enrollment grew by 12.2 percent during 1991–92 alone.<sup>5</sup>

Another reason for high Medicaid spending growth was steep increases in per beneficiary outlays during and after the 1991 recession. According to Klemm, Medicaid spending growth per enrollee was 9.7 percent during 1991–92, after adjusting for inflation. Although growth in Medicaid spending per beneficiary was relatively low during the mid-1990s, continued increases in enrollment kept growth in overall Medicaid spending higher than that in overall government spending. As Figure 1 shows, Medicaid spending continued to grow as a share of total government spending throughout the 1990s.

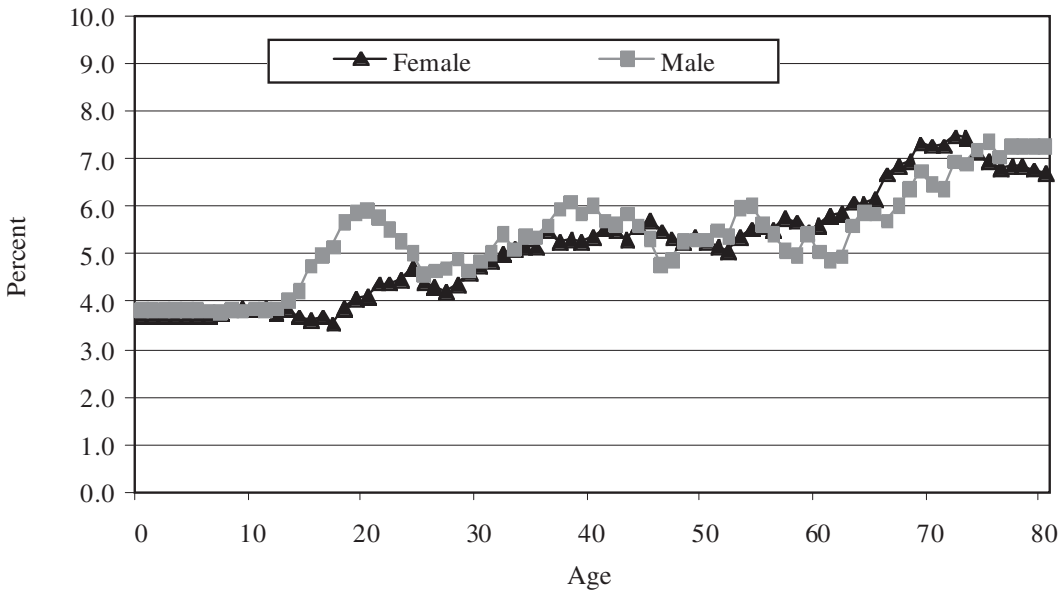
Figure 2 shows that federal Medicaid outlays ratcheted upward during the 1991 and 2001 economic recessions but did not recede to prerecession levels after the recessions ended.<sup>6</sup> That implies that federal policies to

liberalize Medicaid eligibility and benefits that were enacted during the last two recessions became permanently entrenched in the corpus of Medicaid rules. This paper takes the underlying trend in Medicaid’s enrollment and benefit growth by age and gender as a fundamental building block for projecting future Medicaid outlays.

Medicaid’s spending projections are constructed on the basis of two age- and gender-specific profiles—Medicaid spending per enrollee and Medicaid enrollment as a share of the population. In addition, the average *growth* by age and gender of Medicaid enrollments and spending per beneficiary are calculated from the CPS’s March supplements released between 1988 and 2005.<sup>7</sup> That span of years includes two economic recessions. Hence, the average growth rates of spending per beneficiary and Medicaid enrollment as a share of the population calculated across that time span should adequately capture effects across years of economic recessions and booms.

**Federal policies to liberalize Medicaid eligibility and benefits that were enacted during the last two recessions became permanently entrenched in the corpus of Medicaid rules.**

**Figure 3**  
**Average (geometric) Growth of Medicaid Benefits per Recipient per Year by Age and Gender: 1987–2004**



Source: Author’s calculations based on the Current Population Survey.

Even if the share of beneficiaries in the population were constant in the future, Medicaid spending would increase as a share of GDP over time: Figure 3 shows that the annual nominal growth rates of Medicaid spending per beneficiary exceed annual growth in GDP per capita (4.2 percent) for most age and gender categories. Factoring in growth in the share of the population enrolled in Medicaid (see Figure 4) would make the growth in total Medicaid outlays even more rapid.

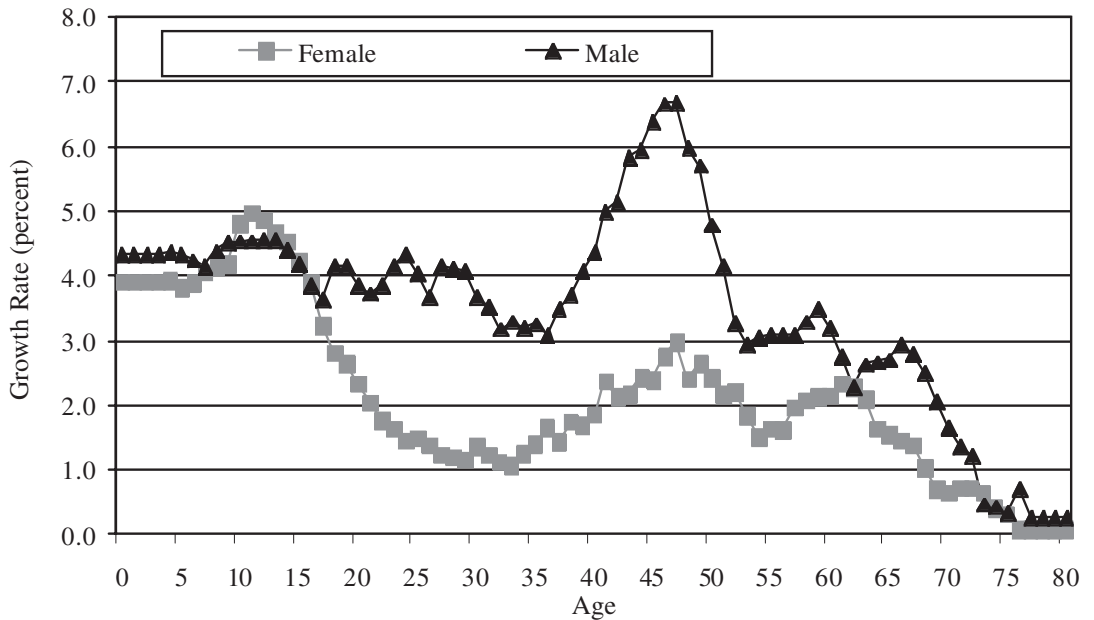
The projections of federal Medicaid spending made in this paper should be viewed as conservative. For Medicaid to be at all sustainable, growth in its aggregate outlays must eventually be slowed to a rate equal to or less than GDP growth. In making long-term projections, therefore, the age-gender growth rates of spending per recipient and the age-gender growth rates of the shares of the population enrolled in Medicaid must both be reduced. The projections constructed here assume that growth of future Medicaid enrollments and of benefits per enrollee would be

gradually decreased—even though federal and state governments have shown little inclination to do so. Damping factors are applied to the two growth rate profiles by age and gender so that annual federal Medicaid spending growth eventually equals annual GDP growth. Thus, the federal Medicaid spending projections reported here are conservative—smaller than they would be if growth in enrollment and spending per beneficiary continued at their historical rates.

If future Medicaid income and asset eligibility limits were indexed to inflation but individuals and households experienced real income growth, the fraction of the population eligible for Medicaid benefits would decline over time. However, federal and state policymakers may make Medicaid’s eligibility tests less restrictive and cause the Medicaid-eligible population share to stay constant or even increase in the future—as has occurred in the past. The outlay projections developed here conservatively assume that the *growth* in the population of Medicaid eligibles would decline at a constant rate of 11.3 percent per year and

**Annual nominal growth rates of Medicaid spending per beneficiary exceed annual growth in GDP per capita (4.2 percent) for most age and gender categories.**

**Figure 4**  
**Average (geometric) Medicaid Enrollment Growth per Year by Age and Gender:**  
**1987–2004**



Source: Author’s calculations based on the Current Population Survey.

**Table 1**  
**Perspectives on Current Federal Medicaid Outlays and Enrollment**

Federal Medicaid Outlays as a Share of Federal General Revenue, 2006 (percent)	Federal Medicaid Outlays as a Share of GDP, 2006 (percent)	Medicaid Enrollees as a Share of Total Population, 2006 (percent)
11.9	1.5	20.3

Source: Author’s calculations.

**Projections are based on conservative assumptions relative to historical experience in which Medicaid outlays have doubled as a share of GDP since the early 1980s.**

gradually approach zero. That growth-damping rate is calibrated to ensure that the total beneficiary population does not exceed 25 percent of the total population—slightly larger than the current aggregate share of recipients of 20.3 percent. Sensitivity tests are conducted to show how the terminal-year (2106) population share of beneficiaries would change under different growth-damping assumptions.

The application of a similar damping factor to growth in the level of spending per beneficiary is more problematic because of uncertainties about future health care price inflation, medical service utilization, and the impact of

technological advances on those factors. In the projections reported below, it is assumed that growth in spending per recipient will gradually approach the growth rate of GDP. Again, this is a conservative assumption relative to historical experience in which Medicaid outlays have doubled as a share of GDP since the early 1980s. It implies that annual Medicaid outlays will eventually consume a constant fraction of GDP—as the population-age structure stabilizes and the two growth factors closely approximate their respective asymptotic values. The damping of the growth of spending per beneficiary is calibrated to yield a federal Medicaid outlay share of GDP



**Table 2**  
**Sensitivity of Federal Medicaid Outlays to Alternative Assumptions about Growth-Damping Factors**

Experiment #	Growth-Damping Factor on Benefits per Recipient ( $\partial_B$ )†	Growth-Damping Factor on Medicaid Enrollment as a Share of Population ( $\partial_R$ )†	Federal Medicaid Outlays as a Share of GDP in 2075 (%)	Federal Medicaid Outlays as a Share of GDP in 2106 (%)	Federal Medicaid Outlays as a Share of General Revenues in 2106 (%)	Present Value of Federal Medicaid Outlays through 2106 (trillions of constant 2006 dollars)	Present Value of Federal Medicaid Outlays as a Share of the Present Value of GDP, through 2106 (%)	Present Value of Federal Medicaid Outlays as a Share of the Present Value of General Revenues, through 2106 (%)	Maximum Share of Population Enrolled in Medicaid through 2106 (%)
			1	2	3	4	5	6	7
1 (base case)	0.8*	11.3**	5.3***	7.4	47.9	21.1	3.7	23.6	25.0
2	0.8	14.3	5.1	7.2	46.4	20.4	3.6	22.8	23.8
3	0.8	8.3	5.6	7.8	50.6	22.3	3.9	24.9	27.5
4	1.0	11.3	5.0	6.7	43.3	20.4	3.6	22.8	25.0
5	0.6	11.3	5.6	8.3	53.9	21.9	3.9	24.5	25.0
6	0.8	100.0	4.6	6.5	42.3	18.2	3.2	20.3	20.3
7	100.0	11.3	2.6	2.7	17.6	13.5	2.4	15.1	25.0
8	100.0	100.0	2.2	2.3	14.6	11.3	2.0	12.6	20.3

Source: Author’s calculations.

† A value of  $x$  percent means the corresponding *growth rate* is reduced by  $x$  percent each year.

\* Calibrated to yield CBO’s estimate of Medicaid outlays as a share of GDP in 2075 (i.e., 5.3 percent).

\*\* Calibrated to ensure that Medicaid beneficiaries remain less than 25 percent of the population by 2106.

\*\*\* CBO benchmark value.

in 2075 equal to that projected by the CBO (5.3 percent).<sup>8</sup> Medicaid’s spending commitment is evaluated under projections through the next 100 years. The generational calculations of Medicaid’s fiscal incidence are based on projections extended further beyond 2106.<sup>9</sup> See Appendix for details of calculations.

## Results

Table 1 shows current Medicaid expenditures as a share of both GDP and federal general revenues and current Medicaid enrollment as a share of population. Row 1 of Table 2 shows Medicaid’s projected cost under base-case assumptions in various ways: as a share of GDP in 2106 (column 2) and federal general revenues in 2106 (column 3); in present value terms (column 4) through 2106; and as ratios

to the present values of GDP and federal general revenues through the year 2106 (columns 5 and 6). Column 7 shows the maximum share of Medicaid recipients in the total population through the projection horizon of 2106.

Under the projections described earlier, Medicaid would consume an implausibly large share of GDP over the next 100 years. The present value of federal Medicaid outlays projected through 2106 equals \$21.1 trillion, or 3.7 percent of the present value of GDP over that period.<sup>10</sup> By 2106 annual federal Medicaid outlays are estimated to reach 7.4 percent of annual GDP. If the federal government were to continue to match state Medicaid outlays at the current rate, total Medicaid spending would consume roughly one-eighth of GDP (13.0 percent) by 2106.

Medicaid likewise would consume an implausibly large share of federal general rev-

**By 2106 annual federal Medicaid outlays would equal 47.9 percent of annual federal general revenues.**

enues. In 2006 federal spending on Medicaid amounted to \$180.9 billion.<sup>11</sup> Federal general revenues—that is, total receipts less social insurance taxes—equaled \$1,517.0 billion in that year,<sup>12</sup> making federal Medicaid spending equal to 11.9 percent of federal general revenues. If program outlays followed the base-case projections described above, Medicaid would soak up almost a quarter of federal revenues through 2106 (row 1 column 6) in present value terms. By 2106 annual federal Medicaid outlays would equal 47.9 percent of annual federal general revenues (row 1, column 3).<sup>13</sup> That implies a fourfold increase in federal Medicaid outlays as a share of federal general revenues. An increase of that magnitude would either require a corresponding reduction in other government outlays financed out of general revenues if increasing federal taxes proved infeasible or, as is likely, be counterproductive because of its negative impact on overall economic growth.

Table 2 also shows how sensitive these estimates are to alternative rates of damping the growth of beneficiaries' share in the population and spending per recipient. Curbing enrollment growth at a slightly faster pace than under the base case yields only modest savings. Row 2 of the table shows that reducing the growth of the population share of Medicaid enrollees at a constant rate of 14.3 percent per year rather than 11.3 percent per year reduces Medicaid enrollees as a share of the population in 2106 from 25 percent to 23.8 percent. That change reduces the present value of Medicaid outlays over the next 100 years by only \$700 billion, from \$21.1 trillion to \$20.4 trillion, and makes the present value of federal Medicaid spending equal to 3.6 percent of the present value of GDP, as opposed to 3.7 percent under the base case (compare values in rows 1 and 2 for column 5). As a share of the present value of general revenues (column 6), the present value of federal Medicaid spending equals 22.8 percent—only slightly smaller than the 23.6 percent under the base case of row 1.

Curbing per beneficiary spending growth at a slightly faster rate has only a modest effect

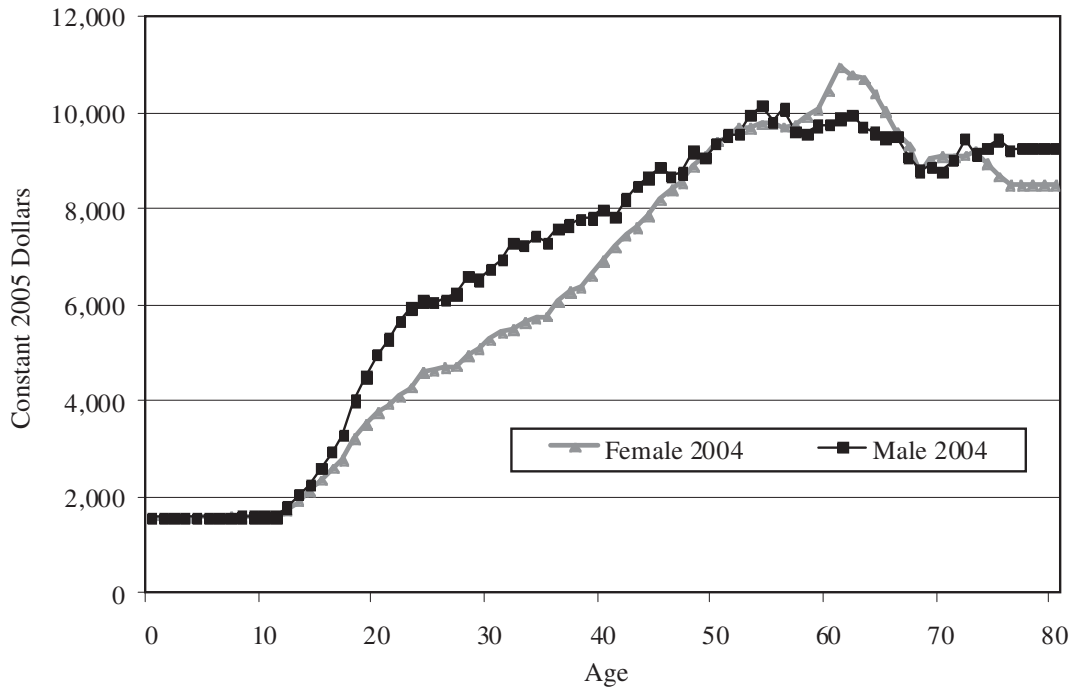
on Medicaid outlays. Row 4 of Table 2 shows that the present value of savings on federal Medicaid outlays would again amount to just \$700 billion (relative to the base case) if growth in spending per recipient were damped at 1.0 percent per year instead of 0.8 percent per year under the base case.

Row 8 of Table 2 shows the impact of immediately curbing growth in both Medicaid enrollments and benefits per enrollee for all age and gender groups. Despite the dramatic reduction in projected Medicaid spending growth, Medicaid spending over the next 100 years remains as high as \$11.3 trillion. And federal Medicaid outlays as a share of federal general revenues (column 3) increase to 14.6 percent by 2106, higher than Medicaid's 2006 share of 11.9 percent of federal general revenues. This growth in Medicaid's share of federal general revenues occurs because freezing both enrollment shares and benefits would not eliminate the impact of population aging on Medicaid spending. In future years, the fraction of the population in age groups incurring higher Medicaid costs would increase gradually (see Figure 5). In addition, as the baby boomers who are currently in their 40s and 50s become older, they will move into age groups with higher Medicaid enrollment rates (see Figure 6). In present value terms, however, freezing both enrollments and benefits per recipient at current levels makes the present value ratio of federal Medicaid spending to federal revenues only slightly higher (12.6 percent) than its 2006 ratio (11.9 percent).

How large a contributor to higher federal costs is growth in Medicaid benefits per enrollee? Row 6 of Table 2, which shows the impact of freezing only enrollment shares by age and gender, provides the answer. Under this scenario, the present value of federal Medicaid outlays increases by \$6.9 trillion—to \$18.2 trillion from the \$11.3 trillion estimate when both growth factors are immediately reduced to zero (row 8). In this case, the present value of federal Medicaid spending would be 20.3 percent of the present value of federal general revenues. Alternatively, rising enrollment shares alone (row 7) contribute

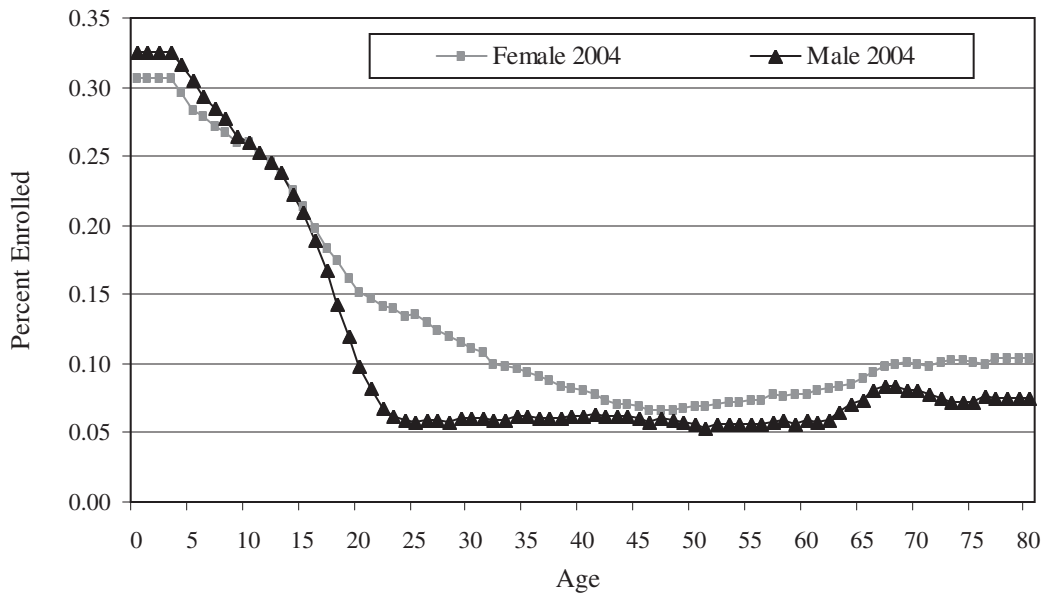


**Figure 5**  
Average Medicaid Benefits per Beneficiary by Age and Gender



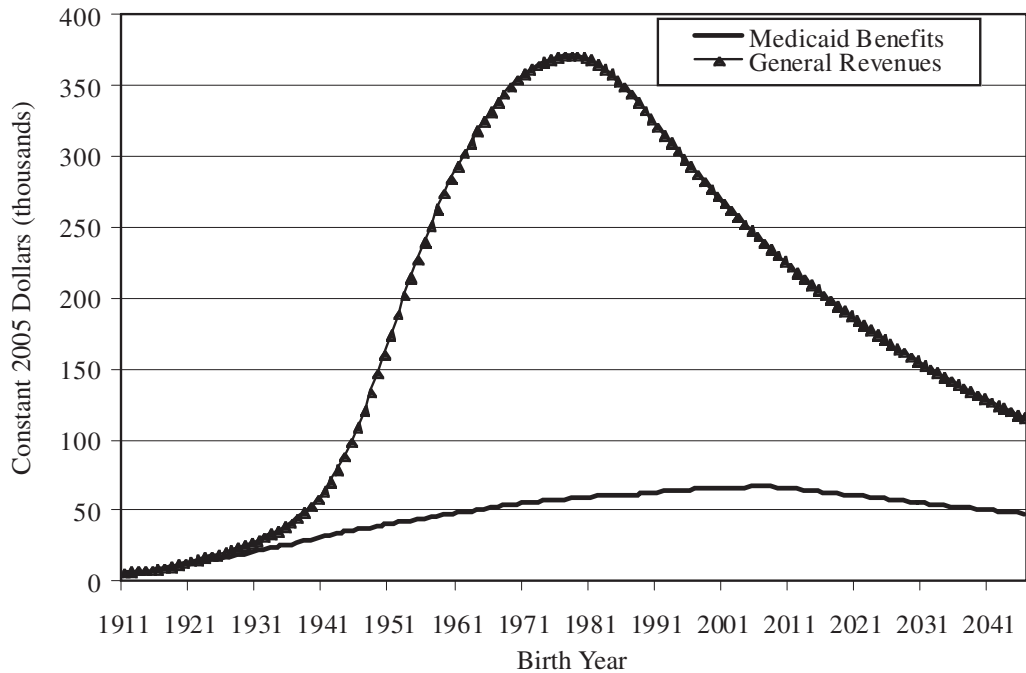
Source: Author's calculations based on the Current Population Survey.

**Figure 6**  
Average Medicaid Enrollment Shares in the Population by Age and Gender



Source: Author's calculations based on the Current Population Survey.

**Figure 7**  
**Profiles of Lifetime Medicaid Benefits and General Revenue Base—Males (present values as of 2006)**



Source: Author’s calculations.

only an additional \$2.2 trillion to the present value of Medicaid costs (column 4) compared to the scenario where growth in both enrollment and per beneficiary spending is immediately reduced to zero. These results suggest that consistently holding down Medicaid spending per enrollee is likely to be critically important for controlling both federal and overall Medicaid spending.

### Medicaid’s Future Bite: A Generational Perspective

Congress funds the federal portion of Medicaid entirely out of general revenues. Unlike Social Security and Medicare Part A, Medicaid lacks a dedicated revenue source and does not have even a notional trust fund. As a result, it is not possible to estimate an “unfunded obligation” for Medicaid. However, it is possible to calculate the present value of the program’s projected spending over a certain time

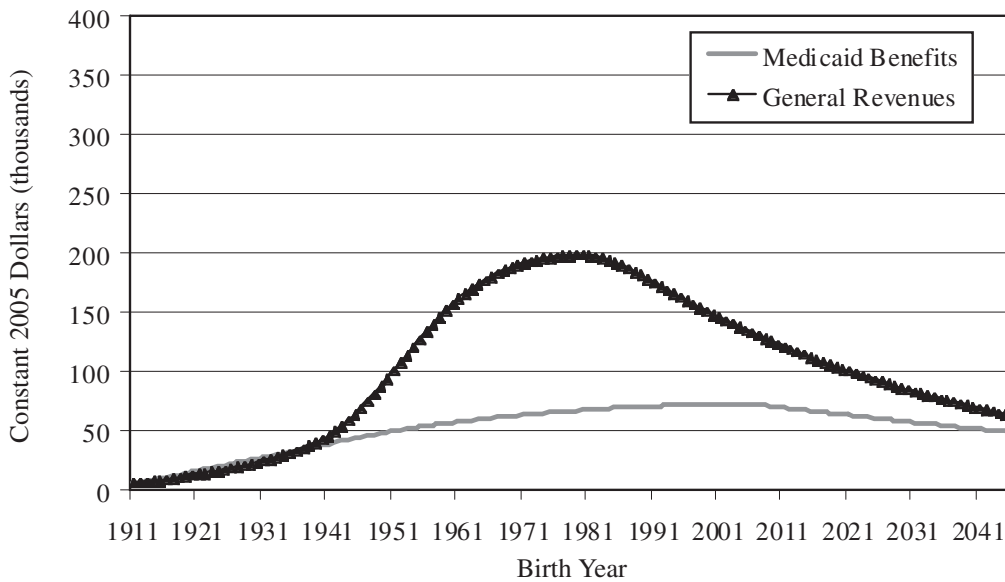
horizon to obtain an idea about how large the federal government’s “spending commitment” under Medicaid is.

As was noted in an earlier section, even if Medicaid enrollments and benefits per enrollee were frozen at current levels (in real terms), the federal “commitment” to fund Medicaid over the next 100 years would involve outlays of \$11.3 trillion in present value. That could be considered an absolute lower bound to the federal Medicaid spending commitment. However, under base-case assumptions, wherein the growth of enrollments and benefits per recipient are dampened gradually, that spending commitment could amount to almost \$21 trillion in present value over the next 100 years.

This section analyzes Medicaid’s spending commitment along generational lines using base-case projections. It calculates the commitment on account of cohorts distinguished by birth year and gender on a prospective basis—the present value of Medicaid benefits received *per capita* over the remaining lifetime

**Under base-case assumptions, the Medicaid spending commitment could amount to almost \$21 trillion in present value over the next 100 years.**

**Figure 8**  
**Profiles of Lifetime Medicaid Benefits and General Revenue Base—Females (present values as of 2006)**



Source: Author’s calculations.

of each cohort. The cohorts included in the analysis are all those alive in 2006 (males and females aged 0 through 100) and those that would be born through the year 2050.

Like most transfers, federal general revenues can also be allocated to different cohorts by age and gender. Since Medicaid benefits are financed out of general revenues, a comparison of prospective lifetime general revenue tax payments with prospective lifetime Medicaid benefits for each cohort reveals each cohort’s net (projected) contribution to funding federal non-Medicaid public services and other entitlement expenditures.

Figures 7 and 8 show the lifetime (present value) profiles of non-social-insurance taxes and Medicaid benefits mentioned above for male and female cohorts. They show that those born prior to 1941 (aged 65 or older today) would contribute relatively little to federal general revenues prospectively. Not surprisingly, the figures show that for today’s retirees, future lifetime Medicaid benefits alone would roughly equal or exceed their future general revenue taxes. For example,

females born in 1931 (aged 75 in 2006) would contribute \$25,400 to federal general revenues in present value during their remaining lifetimes but they would receive \$27,600 in present value federal Medicaid benefits per capita. Males born in 1931 would receive about \$21,800 in present value federal Medicaid benefits but would contribute about \$29,300 in present value to federal general revenues.

Those born between the mid-1960s and the mid-1990s (aged between 15 and 45 today, or the post-baby boom generations) would bear the largest prospective general revenue tax burdens in present value. That is because those generations are currently in or are approaching their highest earning and tax-paying years. For example, in present value terms, males born in 1975 (aged 31 in 2006) would pay \$369,300 per capita, and females born in the same year would pay \$197,100 per capita, in non-social-insurance taxes. The present values of their lifetime Medicaid benefits, however, are estimated at only \$57,500 (males) and \$65,700 (females).

For today’s 31-year-old males, remaining

**People born between the mid-1960s and the mid-1990s would bear the largest prospective general revenue tax burdens in present value.**

**Females born in 2006 would pay \$133,500 in federal general revenue taxes per capita and would receive \$71,900 in federal Medicaid benefits per capita—making lifetime Medicaid benefits account for 53.9 percent of their lifetime federal general revenue contributions.**

lifetime Medicaid benefits equal 15.6 percent of remaining lifetime federal non-social-insurance tax payments. For today's 31-year-old females, that ratio equals 33.3 percent. The much higher ratio for females relative to males arises because females receive larger prospective federal Medicaid benefits and receive them for longer periods because of their longer life expectancy. Moreover, females' lower prospective labor force participation, earnings, and federal general revenue tax payments imply smaller present values of lifetime general tax payments.

Figures 7 and 8 show that the present values of prospective federal general revenue taxes and prospective federal Medicaid benefits are much smaller for today's children and taxpayers to be born in the future than are those of today's young adults and middle-aged generations. The present value of federal general revenue taxes per capita declines for later-born generations. For example, today's children will not begin to earn and pay taxes for another decade or longer. However, the present value of lifetime federal Medicaid benefits declines for each successive birth cohort at a much slower rate than does the present value of lifetime federal non-social-insurance taxes. That's because children receive sizable federal Medicaid benefits per capita, mainly because of their high Medicaid enrollment rates. Thus, future generations will receive substantial benefits soon after they are born.

The slower decline in the present value of federal Medicaid benefits relative to the decline in federal non-social-insurance taxes at progressively younger ages implies that federal Medicaid benefits would loom much larger as a share of general revenue tax payments for younger and future generations. For example, in present value terms, females born in 2006 would pay \$133,500 in federal general revenue taxes per capita and would receive \$71,900 in federal Medicaid benefits per capita—making lifetime Medicaid benefits account for 53.9 percent of their lifetime federal general revenue contributions.

As Figures 7 and 8 show, base-case projections of Medicaid costs imply that the present

value of federal Medicaid benefits as a share of the present value of nonpayroll tax payments escalates for females born still later. For those born soon after 2050, lifetime Medicaid benefits would consume almost *100 percent* of their federal nonpayroll taxes!<sup>14</sup> Stated differently, unless Medicaid's outlay growth is constrained substantially or additional revenues are generated without constraining overall economic growth (which appears to be impossible), the general revenue payments by successive generations will be increasingly devoted to Medicaid outlays, with little left over for financing other government operations, including federal courts, national defense, infrastructure construction, scientific research, education, and so on. These results make it clear that the base-case projections of Medicaid enrollment and benefit growth (which are conservative relative to historical experience) are far from sustainable.

## Conclusion

Medicaid is a safety net program whose financial design provides incentives to private individuals, medical care providers, and state governments to drive outlays continually upward—as evidenced by sustained increases in enrollments, costs per enrollee, and the rising share of national output consumed by the program.

Federal Medicaid expenditures have grown much faster than inflation. Growth in the share of the population that is enrolled in Medicaid and growth in Medicaid spending per enrollee have together caused a sustained increase in Medicaid outlays as a share of GDP during the last several decades.

Federal (and state) Medicaid outlays usually surge during recessions when income losses increase Medicaid enrollment. Medicaid's current share of federal non-social-insurance revenues equals 11.9 percent, up from 4.9 percent in 1985. As a share of GDP, Medicaid outlays did not recede to their prerecession level in the aftermaths of the last two recessions (1991 and 2001).<sup>15</sup> That's because increases in

Medicaid enrollments and benefits per enrollee did not revert sufficiently after the recessions ended. Medicaid outlays have ratcheted upward as a share of GDP—rising from 0.5 percent in 1985 to 1.5 percent today.

Current Medicaid policies and recent trends imply unsustainable future growth of Medicaid outlays. When federal Medicaid outlays are projected under conservative assumptions, the present value of the federal government’s spending commitment over the next 100 years equals at least \$11 trillion and could be as high as \$21 trillion. Under those projections, an increasing share of federal general revenues would be consumed by federal Medicaid outlays. Medicaid’s current 11.9 percent share of federal general revenues would quadruple to one-half of federal general revenues in another 100 years. Such a rapid increase in Medicaid’s share of the federal budget would force cutbacks in other federal spending or require substantial tax hikes to finance them. But using tax increas-

es as a solution to future budget shortfalls is unlikely to work as they would impair future generations’ incentives to work and shift economic activity to informal, nontaxed sectors.

Viewed through the lens of generational analysis—with Medicaid costs and non-social-insurance taxes calculated as present values on a cohort-by-cohort basis—projected federal Medicaid outlays would return an implausibly large part of younger and future generations’ general revenue payments to them—again indicating severe pressure on the federal budget to find resources for funding other operations.

Applying the brakes on Medicaid’s outlay growth should be an urgent priority for policymakers. Unless efforts to scale back Medicaid costs and federal outlays become more vigorous than those recently enacted, and unless those new efforts are sustained, Medicaid will compound the budget crunch already brewing on account of other entitlement programs. In that case, the federal budget and the entire U.S. economy would be primed for a nasty crash.

**Medicaid’s current 11.9 percent share of federal general revenues would quadruple to one-half of federal general revenues in another 100 years.**

## **Appendix: Projecting Federal Medicaid Outlays**

Medicaid’s spending projections are constructed on the basis of two age- and gender-specific growth rates: (1) Medicaid spending per enrollee and (2) Medicaid enrollment as a share of the population. Both growth rates are calculated from the CPS’s March supplements released between 1988 and 2005.<sup>16</sup> This span of years includes two economic recessions. Hence, the average growth rates of spending per beneficiary and Medicaid enrollment as a share of population adequately capture effects across years of economic recessions and booms.

To facilitate comparison of the federal government’s Medicaid spending commitment, total federal general revenues and GDP are also projected. In the case of federal revenues, age-gender profiles of nonpayroll tax payments are derived from microdata sources on the incidence of income, property, sales, excise, and other taxes.<sup>17</sup> GDP per capita is projected by first estimating GDP per person in 2006—by allocating 2006 GDP (\$13.2 trillion) uniformly across the 2006 population—and applying the base case’s labor productivity growth rate of 2.1 percent per year to derive future GDP per capita. The age-gender profiles of general revenues and GDP per capita are each combined with population projections provided by the Social Security Administration to estimate aggregate general revenues and aggregate GDP for future years.

To avoid inconsistencies with official projections of Medicaid spending, the outlays projected here are calibrated to match the Congressional Budget Office’s 2075 estimate of Medicaid’s spending share of GDP. To that end, GDP is also projected assuming long-term nominal growth of per capita GDP of 4.2 percent per year. That growth rate is consistent with annual growth in productivity of about 2.0 percent and consumer price inflation of about 2.2



percent—both of which are adopted by the CBO in its latest long-term economic assumptions.<sup>18</sup> Population projections of the Social Security Administration—extended beyond their terminal year (2080) using final year fertility, mortality, and immigration assumptions—are used to project total GDP beyond 2080.

Using a 4 percent real discount rate (which implies a 6.2 percent nominal discount rate), the estimated present value of GDP through 2106 equals \$566 trillion. Using a similar methodology, the present value of non-social-insurance taxes (including taxes on personal and corporate income and excise, customs, and other taxes) is estimated to be \$89.0 trillion through the year 2106.

The latest data on Medicaid enrollment and benefits available from the CPS pertain to the year 2004 (from the CPS March survey released in 2005).<sup>19</sup> Figures 3 and 4 show the average annual (geometric) growth rates of Medicaid enrollments and benefits per recipient by age and gender, calculated between 1987 and 2004 (from CPS March surveys released between 1988 and 2005). These growth rates are based on the real value of benefits—that is, after deflating each survey year’s benefits by that year’s consumer price index (normalized to set the CPI for 2006 = 1.0).

The average growth rates (by age and gender) of benefits per recipient (shown in Figure 3) are first used to increase average benefits per recipient over two years to generate estimated age-gender profiles of average Medicaid benefits for 2006 (shown in Figure 5). In essence, for each age and gender category, the average 2004 benefit per recipient is multiplied by the square of one plus the growth rate of benefits per recipient for the same age-gender category—that is,  $b_{a,s,2006} = b_{a,s,2004} \times (1 + g_{a,s})^2$ , where  $b_{a,s,2006}$  represents benefits per recipient of age  $a$  and gender  $s$  in 2006 and  $g_{a,s}$  represents the annual growth of benefits per recipient of age  $a$  and gender  $s$ . A similar operation on average enrollment by age and gender in 2004 (shown in Figure 6) using average age-gender enrollment growth rates (shown in Figure 4) yields average age-gender enrollment profiles for 2006.

Survey reports of Medicaid enrollment and benefits are known to contain underreporting biases. Survey respondents may be unwilling to report being covered under Medicaid for several reasons. Underreporting of coverage may occur because of the stigma associated with welfare receipt, because of a lack of awareness of coverage, or because respondents are covered under multiple health insurance plans and tend to forget about their coverage under Medicaid. Benefit levels may be underreported if respondents do not recall benefits claimed early during the previous year.

To correct for underreporting of enrollment and benefits, the 2006 age-gender profiles of average enrollments and benefits per recipient, as derived above, are benchmarked to national aggregates. First, the fraction of the total population enrolled in Medicaid in 2006 is estimated using CPS data. It is the sum over all age and gender categories of the product of enrollment shares in 2006 (calculated above) and the U.S. resident population in 2006 as provided by the Social Security Administration. That share (12.9 percent) turns out to be much smaller than the ratio of the official CBO estimate of total Medicaid enrollees to the 2006 population (20.3 percent).<sup>20</sup> Hence, each age-gender enrollment share,  $r_{a,s,2006}$ , is multiplied by the ratio  $20.3/12.9 = 1.58$  to obtain age-gender enrollment share profiles benchmarked to CBO’s official estimate of the nationwide Medicaid enrollment rate.<sup>21</sup>

Second, the 2006 age-gender profiles of average benefits per recipient are used to calculate weighted aggregate Medicaid outlays for 2006,  $CPS\_M_{2006}$ , as the sum across all age and gender categories of the product of three age- and gender-specific items:

1. the age- and gender-specific population,  $p_{a,s,2006}$ ,
2. the fraction receiving Medicaid benefits,  $r_{a,s,2006}$  as calculated earlier, and

3. benefits per recipient,  $b_{a,s,2006}$ .

That is,

$$CPS\_M_{2006} = \sum_{a=0}^{100} \sum_{s=m,f} P_{a,s,2006} r_{a,s,2006} b_{a,s,2006} \quad (1)$$

The value of  $CPS\_M_{2006}$  so calculated equals \$267.7 billion. Although this value refers to total individually reported (federal plus state) benefits, it is unlikely to equal actual officially reported state plus federal Medicaid outlays. That's because the above correction for underreporting refers to enrollments, not to benefits received by enrollees. All that's required here, however, is to calibrate the average benefit profiles by age and gender to reflect just *federal* Medicaid spending. Hence, each value of the average benefit profile by age and gender,  $b_{a,s,2006}$ , is rescaled by the ratio of the officially reported federal Medicaid outlay for 2006 to  $CPS\_M_{2006}$ . Total federal Medicaid outlays for 2006 reported by the Congressional Budget Office equal \$189.5 billion, making the benchmarking ratio equal to 0.709.<sup>22</sup> In other words, the average enrollee's reported benefits will be changed to correct for underreporting and to rescale benefit profiles by age and gender to be consistent with just federal spending on Medicaid.

Next, federal Medicaid outlays are projected for years beyond 2006. To obtain total Medicaid outlays for 2007, for example, 2006's benefits per recipient and enrollment shares by age and gender are first multiplied by annual growth rates of spending per recipient and enrollment shares by age and gender, respectively. Next, total enrollments for 2007 are obtained by multiplying the resulting enrollment shares by age and gender by the 2007 population counts by age and gender.<sup>23</sup> Finally, total enrollments by age and gender are multiplied by spending per recipient (by age and gender) for 2007 (obtained from the prior calculation). Spending for each age and gender is summed to yield a projection of total federal Medicaid outlays for 2007. Projections for future periods proceed in a similar manner.

Thus, projecting Medicaid outlays,  $M_t$  for a future year  $t > 2006$  under the calibration described earlier involves the following computation:

$$M_t = \sum_{a=0}^{100} \sum_{s=m,f} P_{a,s,t} (r_{a,s,t-1} \Delta_{R,t}) (b_{a,s,t-1} \Delta_{B,t}) \quad (2)$$

where

$$\Delta_{R,t} = [1 + (1 - \delta_R)^{t-2006} R_{a,s}]$$

and

$$\Delta_{B,t} = [1 + \bar{G} + (1 - \delta_B)^{t-2006} (B_{a,s} - \bar{G})] \text{ for } s = m, f.$$

Here,  $B_{a,s}$  represents *growth* in Medicaid benefits per recipient by age and gender as shown in Figure 3, and  $R_{a,s}$  represents *growth* in the share of Medicaid enrollees in the population by age and gender as shown in Figure 4. Note that the constant damping rates applied to enrollment-share growth and to growth in benefits per beneficiary— $\delta_R$  and  $\delta_B$ , respectively—are both set to exceed zero. As a result, the gross damping factor on enrollment shares,  $\Delta_{R,t}$  asymptotes to unity and the gross damping factor on benefits per beneficiary,  $\Delta_{B,t}$  asymptotes to the

annual (gross) growth rate of GDP,  $(1 + \bar{G})$ , where  $\bar{G}$  is the annual net growth rate of GDP. This calibration of enrollment and benefit growth rates together with the estimation procedure for aggregate federal Medicaid spending described earlier yields a projection of nominal Medicaid spending that can be extended as far into the future as required. Here, present values of spending are calculated through 2106. The generational calculations reported below use projections of per capita Medicaid benefits beyond 2106.

The time series of projected total federal Medicaid outlays derived through this procedure is discounted using a nominal interest rate of 6.2 percent per year. That implies a real discount rate of about 4 percent per year, given the earlier assumption on long-term inflation (2.2 percent per year). This real discount rate is about 50 basis points larger than the government's real long-term interest rate (roughly 3.5 percent). That 50 basis point premium on the discount rate could be interpreted as accounting for the uncertainty associated with continuing current Medicaid policy. Applying a higher discount rate to find present values implies smaller dollar estimates. However, note that the higher (premium inclusive) discount rate is applied to all future dollar flows: Medicaid benefits, future general revenues, and GDP. Hence, results expressed in terms of ratios (for example, the present value of Medicaid spending as a share of the present value of GDP) would not be changed because of a higher discount rate. However, the dollar estimates of the present value of federal Medicaid outlays reported here may be said to err on the conservative side, as they are smaller than if no risk premium were included in the long-term government interest rate.

It would obviously be desirable to translate the two growth-dampening factors used in constructing the projections into actual policy instruments. Doing so in the case of Medicaid is difficult, however, because each state's Medicaid program has unique features and policy controls. The only uniform policy lever that could be adjusted is the federal matching rate formula (FMAP). Congress could adjust FMAP rates to yield the same reductions in federal outlay growth as under the alternatives reported here. However, state governments would decide whether that reduced growth would come primarily from slower enrollment growth or slower growth in benefits per enrollee.<sup>24</sup> Alternatively, Congress could abandon open-ended matching grants and cap the federal contribution to each state's Medicaid program.<sup>25</sup>

## Notes

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1. The recently released annual reports of the Social Security and Medicare trustees suggest that under current policies, those two programs' cumulative deficits amount to \$89.5 trillion in present value. See *2007 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*, available at <http://www.ssa.gov/OACT/TR/index.html>; and the *2007 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Insurance Trust Funds*, available at <http://www.cms.hhs.gov/reportstrustfunds/>.

2. The implications for state budgets can be inferred by assuming that the current federal matching rate formulas remain applicable in future years.

3. See the Deficit Reduction Act of 2005, Library of Congress, Bill number S. 1932, available at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\\_cong\\_bills&docid=fs1932enr.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=fs1932enr.txt.pdf). See also the concurrent Resolution on the Budget for Fiscal Year 2006, House of Representatives, May 18, 2005, available at <http://www.gpoaccess.gov/serialset/creports/pdf/109-62/hr109-62.pdf>.

4. Disproportionate Share Hospital payments are intended to accommodate costs of hospitals with a higher than average share of uninsured low-income patients with high health costs. Eligible hospitals receive higher reimbursement relative to those without a DSH designation. Federal DSH payments grew rapidly between 1990 and 1992 and remained at high levels thereafter.

5. See John D. Klemm, "Medicaid Spending: A Brief History," *Health Care Financing Review*, Fall 2000, Table 1, pp. 105–12.

6. As Figure 2 shows, there is a slight reduction of Medicaid outlays as a share of GDP (or federal total outlays) a few years *after* the ends of both recessions, that is, once economic recovery is in full swing. However, the reductions in outlay shares during boom years has never reduced Medicaid's outlay share to prerecession levels. There is no evidence to suggest that the reductions in Medicaid expenditures as a share of GDP that we are currently witnessing would break from that historical pattern.

7. Data on Medicaid enrollment and spending reported in each CPS survey refer to the respondent family's status during the previous year.

8. See "A 125-Year Picture of the Federal Government's Share of the Economy," Congressional Budget Office, Long-Range Policy Brief, July 1, 2002. Obviously, damping the growth of benefits per enrollee at a slightly faster rate and damping the growth of the share of enrollees at a slightly slower rate (or vice versa) would be consistent with eventually achieving growth in aggregate benefits equal to growth in GDP and achieving the CBO benchmark of Medicaid's share of GDP in 2075 (5.3 percent). The impact of altering the relative rates of damping the two growth rates results in a slightly different generational distribution of benefits relative to general revenues by cohort. However, the main conclusion—that Medicaid benefits would eventually take up an overwhelming portion of each cohort's general revenue payments—is not altered for the alternative examined later in the text.

9. Richard Kronick of the University of California, San Diego, and David Rousseau, principal analyst with the Kaiser Medicaid Commission, recently estimated Medicaid's costs for the period 2005–2045. Unfortunately, Medicaid's cost growth is unlikely to abate by the middle of this century because the youngest baby boomers will still be alive and in their eighties. Moreover, human longevity is expected to increase continually through the 21st century, implying a growing population of the oldest old who tend to be highly dependent on Medicaid's nursing home and other health benefits. Hence, rapid Medicaid enrollment growth and growth in outlays per beneficiary are both likely to continue well beyond 2045.

10. Assuming that Medicaid outlay growth is likewise reduced at the state level and federal matching grants average 57 cents per dollar of state outlays through the year 2106, the present value of total (federal and state) Medicaid outlays as a share of GDP where both are calculated through

the next 100 years would be 6.7 percent of the present value of GDP through 2106.

11. Converted to calendar year basis using data from Table 9 in CBO's historical budget tables available at <http://www.cbo.gov/budget/historical.xls>.

12. Converted to calendar year on the basis of data available from the Congressional Budget Office at [http://www.cbo.gov/Spreadsheet/7731\\_Tables.xls](http://www.cbo.gov/Spreadsheet/7731_Tables.xls).

13. The 2006 ratio of general revenues to GDP equals 12 percent. That ratio is projected to increase to about 14 percent by 2106.

14. Note that under the base case, enrollment rates for future populations would be no higher than 25 percent of the overall population. The reason for a rising share of lifetime Medicaid benefits in lifetime general revenues is population aging. Increasing longevity means a larger segment of the lifetime would be spent in retirement and a smaller share in working age groups. The impact of rising longevity is magnified by growth in benefits at annual rates faster than GDP per capita. For example, damping the growth of benefits at only 0.8 percent per year implies that the growth rate in year 100 is reduced to just 45 percent of its current value.

15. More recently, Medicaid has experienced slower outlay growth, but much of it can be attributed to shifting a rapidly growing component, Medicaid's drug outlays, to Medicare Part D. That reclassification by itself does not affect the conclusions from this analysis about the extent of financial pressure exerted on the federal budget by Medicaid's provision of health care to a growing segment of the population. Whether prescription drug coverage for this population segment were nominally covered under Medicare or Medicaid would not alter the fact that those costs would continue to exert pressure on the federal budget.

16. Data on Medicaid enrollment and spending reported in each CPS survey refer to the respondent family's status during the previous year.

17. Income tax, customs' duties, profiles by age and gender are obtained from the Current Population Survey of the Bureau of Labor Statistics; corporate and capital income tax profiles from the Survey of Consumer Finances of the Board of Governors of the Federal Reserve system; property, excise, and other indirect tax profiles are derived from the Survey of Consumer Expenditures of the Bureau of Economic Analysis.

18. See Congressional Budget Office, *Budget and Economic Outlook: Fiscal Years 2008–17*, January 2007.



19. At the time of writing, the March 2006 release of the Current Population Survey did not contain information on Medicaid benefits.

20. The CBO's estimate of Medicaid enrollment for 2006 equals 60.9 million. See "Detailed Projections for Medicare, Medicaid, and State Children's Health Insurance Program," Congressional Budget Office, March 2007. The SSA's estimate of the 2006 population equals 299.3 million (midyear estimate). The midyear estimate is appropriate because part-year enrollments occurring throughout the year are included in the CBO's estimate of total enrollees. Moreover, dividing by end-year population estimates would bias the population share of enrollees downward. But that would mean growth in Medicaid enrollments would have to be damped at a slower rate (allowing for faster future enrollment growth) to reach the target population share of enrollees of 25 percent. Hence, dividing by the midyear population provides conservative estimates of the present value of future Medicaid spending.

21. This implied rate of underreporting is somewhat higher than those found in the literature. For example, Jacob Alex Klerman, Jeanne S. Ringel, and Beth Roth indicate underreporting rates of about 30 percent for adults and 25 percent for children in the California Medicaid program. Nevertheless, assuming a higher rate of enrollment is reasonable because the underreporting problem has become more severe during the later years of the Current Population Survey. See Jacob Alex Klerman, Jeanne S. Ringel, and Beth Roth, "Underreporting of Medicaid and Welfare in the Current Population Survey," RAND Labor and Population Working Paper no. WR-169-3, March 2005. A larger correction for underreporting implies a higher population share of enrollees in the base year (2006). But that

means the assumed growth in future enrollees must be smaller to attain any given target ratio (assumed here to be 25 percent of the population). In turn, that implies that the present value of future Medicaid spending would be lower—that is, more conservative.

22. See CBO, *The Budget and Economic Outlook: Fiscal Years 2007–2016*, January 2006, Appendix F. Medicaid outlays equal \$180.6 billion for fiscal year 2006. CBO's projections place federal Medicaid outlays for the 2007 fiscal year at \$192.7 billion. Conversion to a calendar year basis yields the value of \$189.5 billion for 2005. The CBO estimates are available at <http://www.cbo.gov/budget/factsheets/2007b/medicaid.pdf>.

23. Details regarding SSA's population projections and extensions beyond 2080 are available in Jagadeesh Gokhale and Kent Smetters, *Fiscal and Generational Imbalances: New Budget Measures for New Budget Priorities* (Washington: AEI Press, 2003). An updated version of those projections from the SSA was used in this study.

24. Although this paper's main objective is to measure the pressure that Medicaid outlays would impose on the federal budget, one could also use this methodology to project the program's total (federal and state) cost. Doing so would require an assumption about future federal match rates. For example, if the federal government sustains an average match rate of 57 cents per dollar of total Medicaid spending, total projected Medicaid spending would equal federal spending divided by 0.57.

25. See, for example, Michael F. Cannon, "Medicaid's Unseen Costs," Cato Institute Policy Analysis no. 548, August 18, 2005, [http://www.cato.org/pub\\_display.php?pub\\_id=4049](http://www.cato.org/pub_display.php?pub_id=4049).



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