

**Containing the Growth of Spending in the U.S. Health System:
Methods Appendix**

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Introduction

The growth in U.S. health care spending and strategies for slowing it have become a focal point in debates over federal and state health care reform. While the problem is easy to quantify, strategies for slowing ever-rising expenditures are more controversial, and evidence of their potential effectiveness is often elusive. Our full [report](#) provides background that describes the problem and reviews the various cost containment provisions of the Affordable Care Act of 2010 (ACA). It also considers a number of options for containing the growth in health care spending in the United States and estimates possible savings. Here, we provide details on the methods used to generate the cost savings estimates. For a full discussion of the policy options and implications for national health spending, refer to the full report.

Generating baseline spending estimates

The main objective of this project is to estimate potential savings from a variety of cost containment policies. To do so, it was necessary to generate baseline spending estimates, by payer and by service for the period 2014–2023. The Office of the Actuary (OACT) at the Centers for Medicare and Medicaid Services (CMS) produced estimates of aggregate spending, by payer, reflecting the impacts of the Affordable Care Act.¹ The Actuaries projected spending through 2019 for the following payers: Medicare, Medicaid/CHIP, employer-sponsored insurance (ESI), private coverage sold through the health insurance exchanges, other private health insurance, and out-of-pocket (OOP) spending. They also include estimates of other public and other private spending, but because none of the policies that we will consider will affect such spending, we do not include these estimates in our baseline. Therefore, our estimates of total national health expenditures (NHE) are reduced by approximately 18 percent.

Many of the policies that we consider include targeted adjustments to spending by service category, such as hospitals, physicians, prescription drugs, etc. The most recent CMS expenditure projections that include adjustments for the impact of the ACA do not break out expenditures by service. Earlier spending projections from 2009 did include spending by service, but do not account for the effects of the ACA.² Therefore, in order to create a post-ACA baseline by service for each payer, we calculated the ratio of post-ACA expenditures to pre-ACA expenditures for each payer and year from 2010 to 2019. Then, we used this payer-specific ratio to adjust the pre-ACA spending projections by service. This maintains the service-specific growth rates that existed pre-reform, but adjusts total spending for each payer to equal post-ACA projections. Payers on the pre-ACA NHE projections are limited to Medicare, Medicaid, Private, and OOP, so the post-ACA estimates for ESI, exchanges, and other private health insurance are summed to calculate all private insurance spending in order to adjust the service-specific projections. We break out spending for each payer into the following categories: hospital, physician, drug, other services, and administrative costs.

Because the time frame for our policy options runs through 2023, we need to make some additional projections for the years 2020–2023. For each payer (private, Medicaid, Medicare, and OOP) and each service (hospitals, physicians, drugs, other services, and administrative costs), we use the payer- and

service-specific growth rate from 2018 to 2019 to project spending through 2020–2023. We then sum up all services and administrative costs, by payer, to generate an estimate of total expenditures for each payer for 2020–2023. The resulting service specific baseline used in our estimates is shown in table A1.

Estimating policy options

For each policy option, we generated estimates of the effects of the policy on the level and/or growth rate of spending for targeted populations. Such estimates were based on the available literature as well as on, in some cases, assumptions that we believe to be reasonable and conservative. These effects were then applied to the baseline spending estimates to generate the expected savings from each policy option. The estimated savings to Medicare may be understated because the Medicare baseline reflects current law with regard to the sustainable growth rate (SGR) mechanism. Medicare’s spending growth will actually be higher than projected, however, assuming that current physician fees are maintained or increased and not allowed to fall by the amount required by the SGR mechanism. Further details on the methods for estimating savings from each specific policy option are found in the following sections.

Cap and phase out the tax exclusion for employer-sponsored insurance

Some analysts and observers believe that health care expenditure growth can be tied to consumers spending too little of their own money for care, since many are shielded from the true cost of their care by health insurance. Relatedly, they feel that federal tax provisions are significant contributors to the problem of overinsurance.³ Contributions to employer-sponsored insurance (ESI) are not taxed as income for workers receiving such benefits. The structure of this tax benefit suggests that many, particularly those with higher incomes, will be inclined to want more of their employment compensation package through health insurance benefits than they would if ESI contributions were treated the same as cash wages. Such employees may prefer more benefits and coverage options with lower cost-sharing requirements (e.g., out-of-pocket maximums, deductibles, co-payments, and co-insurance) than they otherwise would. If this is the case, lower cost-sharing requirements will tend to increase covered individuals’ use of medical services and increase costs, all else being equal.

The empirical evidence on the effect of repealing or limiting the tax exclusion has been focused on the tax revenue implications or on the implications for the probability that an employer will offer health insurance to its employees. Estimates are not available for the effect on total health care spending or even health care spending by those affected by the tax. As Katherine Swartz explains in her synthesis of the literature on the effect of cost-sharing on health care spending, we should consider three segments of the population when identifying the potential for cost-sharing approaches to lower overall health care spending.⁴ The first group consists of the lowest-spending half of the population, which accounts for only 3.0 percent of total health spending. Increasing cost-sharing for this group may have some effect on lowering their spending, but because their share of spending is so low, decreasing their spending will have no discernible effect on total health care costs. The second group consists of the top

10 percent of spenders; their spending accounts for about 65 percent of total health care spending. In this group, 15 percent of costs were spent on those between the 90th and 95th percentiles and 50 percent on those in the 96th to 100th percentiles. Both populations have high medical needs, with medical decisions driven more by physicians than patients. Even with the higher deductibles and co-payments that are typical today, the vast majority of spending associated with these populations would occur once out-of-pocket maximums associated with health insurance apply, thus making their spending largely insensitive to price, particularly for the top 5 percent. The third group, whose spending falls between the 50th and 90th percentiles of the health care spenders, are those who have the greatest potential to change their utilization of health care services due to less comprehensive policies. This group, together with the lowest-spending half of the population, accounts for roughly of 35 percent of total health care spending.

We calculated the spending percentiles for all nonelderly individuals using a four-year MEPS sample to determine the spending thresholds that delineate the 50th, 90th, and 95th percentiles of spending. We then determined the aggregate spending by individuals reporting any ESI coverage within each category. We find that 35.7 percent of ESI expenditures are below the 90th percentile and we assume that we can save 10 percent on these individuals. We also find that 15 percent of ESI expenditures are between the 91st and 95th percentiles and we assume savings of 5 percent on this group. We assume no savings on the top 5 percent of spenders. This results in a savings estimate of 4.3 percent of all ESI expenditures from capping the tax exclusion. Savings estimates for this option are reported in table A2.

Malpractice reform

Medical malpractice is frequently cited as a major cause of high health care costs. Mello and colleagues conclude that the medical liability system accounts for 2.4 percent of health care spending.⁵ There are two mechanisms to achieve savings. The first is placing caps on noneconomic damages that will reduce malpractice premiums paid by physicians and hospitals and thus reduce charges for services. Other tort reforms have not been proven to have any effect on malpractice premiums.⁶ The second is lowering the risk of malpractice suits to reduce the amount of defensive medicine and reduce unnecessary utilization, thereby reducing health care costs.

The evidence on the impact of tort reforms is somewhat mixed. There is evidence from some states where tort reforms in fact reduced malpractice claims, which in turn have reduced malpractice premiums paid by health care providers.⁷ The biggest impact seems to come from caps on malpractice awards, particularly, awards for pain and suffering.⁸ The Congressional Budget Office (CBO) has estimated that a \$250,000 cap on noneconomic damages would reduce physician malpractice premiums by 25.0 to 30.0 percent.⁹ The CBO has estimated that this would result in savings of about 0.3–0.4 percent of national health spending for 2007.¹⁰

Estimates of state tort reforms on defensive medicine have varied. One study suggests savings of about 4.0 percent, primarily from cutting hospital spending.¹¹ Other studies find much smaller savings in the range of 0.0–0.3 percent of health spending.¹² Sloane and Chepke have estimated the cost of defensive

medicine at about 1.0 percent of health spending.¹³ Even if the impact of reform on defensive medicine is closer to 0.5 percent of total health spending, the savings coupled with savings from malpractice premiums and the related impact of defensive medicine on health care costs could result in savings of around 1.0 percent of national health expenditures.¹⁴

Based on the available evidence, we therefore assume that the effect of malpractice reform (caps on awards for noneconomic damages) on premiums and on the practice of defensive medicine could result in savings of 0.9 percent of national health expenditures. We assume that such savings would be phased in, with savings of 0.1, 0.3, 0.5, and 0.7 percent in the first four years and savings of 0.9 percent in each of the next six years. Savings are distributed across payers (Medicare, Medicaid, and private) according to the baseline distribution of total spending, where private spending includes both private insurance and OOP spending. Table A3 reports cost savings for this option.

Disease prevention

Disease prevention is a traditional focus of public health agencies, but until the passage of the ACA, it was largely ignored in policy focused on health care financing. To a large extent, this stems from a lack of a strong evidence base on the savings that could be achieved through disease prevention activities delivered by traditional health care providers. The ACA includes provisions supporting coverage of certain evidence-based preventive services that can be delivered by traditional providers and reimbursed like other clinical services, but there is no criterion that the services have expected cost savings.

The options we consider here are in a different class of disease prevention activity from those addressed by the ACA. Two of the options described (a cigarette tax and a sweetened beverage tax) would be implemented entirely outside of the health system, and the other (an asthma trigger reduction intervention), while it relies on the health care delivery system to identify recipients, consists of nonmedical interventions implemented outside of that system. Based on a systematic review of the literature on their effectiveness, two of the interventions (cigarette tax and asthma trigger reduction) have been recommended by the Task Force on Community Preventive Services, a panel of independent nonfederal public health and prevention experts appointed by the director of the Centers for Disease Control and Prevention.¹⁵ The third has not undergone a review by the Task Force, but evidence assembled by researchers at the U.S. Department of Agriculture suggests price sensitivity in the consumption of sweetened beverages, as well as effects on caloric balance that would result in weight reductions.

Ormond, Waidmann, and Spillman provide us with savings estimates for the three public health interventions; an asthma trigger reduction, a cigarette tax, and a sweetened beverage tax. All three options rely on a model developed by Urban Institute (UI) researchers that used the Medical Expenditure Panel Survey—Household Component (MEPS) to estimate the relationship between health care spending and behavioral, demographic, and disease characteristics, and to simulate the effects of

changes in those characteristics.¹⁶ Their analysis generates a percent savings for Medicare, Medicaid, Private, and OOP spending for each year (2011–2020) for each intervention.

Because the MEPS data used to generate the savings estimates are limited to the noninstitutionalized population, we apply the savings estimates only to the non–nursing home portion of our baseline spending projections. Estimates of nursing home spending, by payer, from the CMS Actuaries are subtracted from our baseline estimates to obtain a revised baseline for this option. Applying the UI public health savings estimates is then relatively straightforward. We use the percent savings generated by the models for each intervention, by payer, and apply them to the revised baseline, with nursing home spending excluded. Because year-by-year savings estimates for the cigarette tax are each relative to the year the tax is first implemented, we take the 2011–2020 estimates and apply them to our 2014–2023 baseline. For the other options, we apply the 2014–2020 estimates to our 2014–2020 baseline and use the estimates from 2020 to predict the savings for 2021–2023. Savings estimates from the disease prevention options can be found in table A4.

Chronic care management

A very high share of health care spending in the United States is attributable to people with multiple chronic conditions. There are about 9.0 million people dually eligible for both Medicare and Medicaid, a large number of whom have multiple chronic conditions. We have estimated that the cost for Medicare/Medicaid dual eligibles was \$304.5 billion in 2010—\$164.7 billion for Medicare and \$140.3 billion for Medicaid.¹⁷ This is about 15 percent of total U.S. health care spending. There are also a large number of disabled individuals receiving Medicaid who are not dual eligible, whose expenditures are estimated at \$116.5 billion in 2010.¹⁸ There are also 2.3 million Medicare beneficiaries who are not dual eligible but who have five or more chronic conditions. They account for another \$145.3 billion, of which \$96.8 billion is paid by Medicare.¹⁹ There are a large number of individuals who have private insurance with five or more chronic conditions as well. In total, these individuals with disabilities and/or multiple chronic conditions account for approximately \$635 billion in 2010, about 30 percent of personal health care spending.²⁰

A number of these individuals suffer from a lack of care coordination. Many go to several different providers with little obvious coordination of their care. Moreover, the split of responsibility between Medicare and Medicaid adds to inefficiency and unnecessary spending. We estimate the potential savings from implementing chronic care management programs for several categories of chronically ill and disabled individuals. This required first generating baseline spending projections for the following categories of individuals: dual eligibles, with and without long-term care spending; Medicaid-only disabled individuals, with and without long-term care spending; Medicare-only beneficiaries with five or more chronic conditions, and ESI-covered individuals with five or more chronic conditions.

Calculating spending on dual eligibles, by both Medicare and Medicaid, required several steps. First, we used 2007 Medicaid Statistical Information System (MSIS) data to estimate Medicaid expenditures on dual eligibles, both aged and disabled, for three groups: those with institutional long-term care

spending, those with noninstitutional long-term care spending, and those with no long-term care spending. We then used a 2003 linked MSIS–Medicare Current Beneficiary Survey (MCBS) dataset from Coughlin and Waidmann that combined Medicaid and Medicare data to estimate spending on Medicaid acute care services, total Medicare spending, and Medicaid drug spending for dual eligibles. Using this data, we generated the ratio of Medicare expenditures plus Medicaid drug spending to Medicaid acute care spending, by age and by long-term care (LTC) spending status.²¹ This ratio is then used to estimate Medicare spending on dual eligibles by multiplying the ratio by the estimates of Medicaid spending from the 2007 MSIS for aged and disabled dual eligibles, with institutional, noninstitutional, and no LTC spending. We grew the spending estimates to 2010 using CMS estimates of the growth in Medicare spending between 2007 and 2010. The estimates are also adjusted to reflect information on the total spending on dual eligibles by Medicare and Medicaid. We projected Medicaid expenditures through 2023 for each group of dual eligibles by CBO projections for the aged (5 percent) and disabled (6 percent), respectively. We projected Medicare expenditures to 2023 using CBO projections (6.8 percent). We also calculated Medicaid spending on the non-dual disabled in 2007, grew it to 2010, and then projected these estimates to 2023 using CBO projections (6 percent).

Medicare spending for non-duals is based on analysis of the Medical Expenditure Panel Survey (MEPS). We obtained an estimate of the amount of spending in 2008 on Medicare beneficiaries with five or more chronic conditions. This estimate includes spending by supplemental private insurance and OOP spending. We grew this to 2010, and to 2023, using estimates of the projected growth in Medicare, private, and OOP spending from the CMS actuaries. Similarly, for ESI expenditures on the chronically ill, we used data from the 2008 MEPS on expenditures on those with ESI and five or more chronic conditions, by firm size. These estimates also include OOP spending. We grew expenditures from 2008 to 2010, and to 2023, using the projected growth in ESI and OOP expenditures from the CMS actuaries.

With baseline spending estimates for the chronically ill and disabled in place, we applied a series of enrollment and savings assumptions to generate estimates of the cost savings from chronic care management programs for the targeted populations. The total savings rate is the product of the enrollment and savings rate. The policy is phased in by taking one-third of the total savings in year 1 (2014) and two-thirds of the total savings in year 2. We use the following enrollment and savings assumptions for the specified categories of individuals:

	Enrollment Rate	Savings Rate
Duals with any LTC spending	$\frac{2}{3}$	7 percent
Duals with no LTC spending	$\frac{1}{2}$	7 percent
Non-dual disabled with LTC spending	$\frac{2}{3}$	5 percent
Non-dual disabled with no LTC spending	$\frac{1}{2}$	5 percent
Medicare chronically ill	$\frac{1}{2}$	5 percent
ESI chronically ill	$\frac{1}{4}$	5 percent

In order to determine to which payers the savings accrue, we make several assumptions that reflect the fact that most savings from successful chronic care management programs are on acute care services and that these services are paid for primarily by Medicare:

- 70 percent of the savings on dual long-term care beneficiaries is Medicare; the remainder is Medicaid.
- 80 percent of savings on dual beneficiaries with no long-term care is Medicare and the remainder is Medicaid.
- Savings on the non-dual disabled is all Medicaid.
- 67 percent of the Medicare chronically ill savings is Medicare; the remainder is private.

Savings estimates for this policy option can be found in Table A5.

End of life care

Health care at the end of life is very expensive. There is an opportunity to reduce spending without having to deny care, even care that provides small benefit relative to costs. Between 27.2 and 30.6 percent of Medicare expenditures in a given year were for the 5 percent of beneficiaries who died during that year,²² and this share of Medicare spending has been quite constant over a couple of decades.²³ One study found that spending for the last 60 days of life accounted for 52 percent and spending for the last 30 days accounted for 40 percent of total spending for the patient's last year of life.²⁴ About half of spending in the last month was for hospital care, and one in five patients died in an intensive care unit (ICU). Of those who died in an ICU, their average stay was about 13 days.²⁵

There is substantial and growing evidence that much end-of-life spending is not sought by patients and is counter to patients' and their families' expressed preferences.²⁶ End-of-life care is also often associated with *worse* outcomes in terms of quality of remaining life.²⁷ Overall, there is evidence that patients with various terminal conditions may not be well informed about the costs and benefits of treatment, and that physicians may prescribe treatments known to be ineffective.²⁸ There are several potential options to reduce the excess costs of medical care at the end of life, while improving the quality of that care.

Currently, hospital palliative care teams and units have been shown to improve pain management and physical symptoms as well as family satisfaction with the care their loved one is receiving.²⁹ Although access to palliative care has increased substantially over recent years, its availability can be further encouraged through broader deployment, which can be promoted through basic reimbursement for palliative care activities. While hospice is covered by Medicare, there is evidence that it is more accessible in some geographic regions than others. In addition, there is significant evidence that hospice is brought into care too late to have its maximal benefit—with services often being initiated within the last few days of life.³⁰ Encouraging providers to discuss hospice earlier and working to standardize access geographically could increase use.

We estimate significant savings from modest approaches to alter clinical decisions for patients at the end of life. The last year of life costs represent more than 25 percent of Medicare spending, so a 5.0 percent reduction in end-of-life costs would save Medicare 1.25 percent. A complete set of savings estimates for this option are found in Table A6.

Bundled payments

The current fragmented fee-for-service payment system could be replaced by a payment system designed to incentivize coordination of care across settings, thus decreasing costs and increasing quality of care. Bundled payments represent such an approach by replacing discrete payments for each service and provider with a global payment for all providers and services related to a particular episode or condition. In the context of acute and procedural episodes (e.g., hip replacement), a bundled payment would include reimbursement for an inpatient or outpatient episode and related care provided in other settings for a specified interval of time. A bundled payment for a chronic condition would cover all care related to that condition for a specified period (e.g., 12 months).

To estimate potential systemwide savings from implementing bundled payments, we base per-episode savings estimates on the PROMETHEUS Payment model.³¹ The model uses clinical guidelines and expert opinions to create a budget for an entire care episode, which includes all covered services bundled across all providers, adjusted for the severity and complexity of each patient's condition.³²

We estimate potential savings for six inpatient procedural episodes, three outpatient procedural episodes, and one acute medical episode. The selected episodes are:

- Inpatient Procedural: bariatric surgery, coronary artery bypass graft surgery (CABG), hip replacement, knee replacement, hysterectomy, and percutaneous coronary intervention (PCI, commonly referred to as coronary angioplasty).
- Outpatient Procedural: colonoscopy, gallbladder surgery, and knee arthroscopy.
- Acute Medical: acute myocardial infarction (AMI).

Given the nature of the episodes, all savings are modeled for the adult population, 18 and older. We model these savings under a scenario where bundled payments are the exclusive method for reimbursement for the selected episodes in Medicare, Medicaid, and private insurance plans in the exchange, but cover only 20 percent of private plans outside the exchange.³³ First, we estimate the per-patient savings that can be achieved from using a bundled payment for each episode. Second, we estimate the incidence of the episodes among each payer (i.e., the number of patients who have the episode in a given year). An episode with high per-patient savings but a relatively low incidence will generate a relatively small amount of savings to the entire system. On the other hand, an episode with modest per-patient savings and a high incidence in the population could generate sizable savings. We present savings estimates as if the potential savings are realized through a four-year transition. In 2014, we assume that only one-quarter of the potential savings would be realized, with an additional one-

quarter added in each of the next three years. For the remaining six years of the study period, there would be full savings.

Our primary data sources are the data packages provided by PROMETHEUS Payment for each episode and condition. PROMETHEUS applied their payment model algorithms to a 2005–2006 claims database of a commercially insured population with 4.7 million covered lives. For each episode, the data packages give the level and distribution of typical and potentially avoidable complication (PAC) spending by type of service (inpatient, outpatient, professional, pharmacy) within that commercially insured population. The packages, called “playbooks,” are available on the PROMETHEUS payment web site.³⁴ To increase comparability across insurance plans, the playbook data report spending by the insurance carrier and patient (e.g., co-payments) together. Thus, we cannot isolate insurer and household baseline spending or savings.

We used the PROMETHEUS data to estimate average baseline spending and average bundled payments for each episode in private insurance plans. We calculate average baseline spending as mean typical spending plus mean potentially avoidable spending, and average bundled payment rates as mean typical spending plus half of mean potentially avoidable spending.³⁵

We then applied unique price adjustments to these estimates from private insurers, by type of service, to arrive at comparable estimates for Medicare and Medicaid. We used price adjusters for inpatient, physician, and outpatient services, consistent with price differences between Medicare, Medicaid, and private insurers reported in the literature. For inpatient services we assumed that private payments are 135 percent of Medicare, and Medicaid payments are 95 percent of Medicare.³⁶ For physician services, we assumed private payments are 123 percent of Medicare and Medicaid payments are 72 percent of Medicare.³⁷ For outpatient services, we assumed Medicare payments are 5 percent less than private payments, and Medicaid payments are 1 percent less than Medicare.³⁸ We made no price adjustments for pharmacy claims.

We obtained payer-specific prevalence estimates for the most recent data year available from the 2008 Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample for AMI, bariatric surgery, CABG, hip replacement, knee replacement, and PCI; and the 2006 HCUP and 2006 National Survey of Ambulatory Surgery (NSAS) for colonoscopy, gallbladder surgery, hysterectomy, and knee arthroscopy. We then inflated average payments derived from the PROMETHEUS playbook data from 2005–2006 dollars to dollars of the year the most recent prevalence estimate for that episode or condition was available (2006, 2008, or 2009), using detailed price inflation adjustments to account for the distribution of type of service within each episode or condition. For this, we used the CPI-U for inpatient, physician services, outpatient, and prescription drugs. We then multiplied the prevalence estimates by adjusted average payments in that year’s dollars to arrive at total spending for that condition, by payer.

We projected spending under bundled payments out to 2014 using payer-service specific growth rates derived from the CMS Actuary’s projections.³⁹ The potential savings for each episode and condition is the difference between projected baseline spending and projected spending under bundled payments. Since we cannot distinguish between insurer and household spending in the PROMETHEUS data, the

savings estimates represent total savings to the health care system (including spending by insurance companies and households). A full set of savings estimates from this policy option are included in table A7.

Strengthening the exchanges

The ACA establishes insurance exchanges that will open in 2014 to individuals and small groups.⁴⁰ These exchanges have the potential to focus insurance competition on the provision of affordable, high-quality care and lower insurance-related overhead costs. If they meet expectations, insurance exchanges will make it much easier to compare insurance choices, sign up for coverage, and stay enrolled. Although the ACA establishes a solid foundation, several supporting policies would strengthen the exchanges' ability to inform choice, reduce complexity, and focus competition among health insurance plans, leading to improved access and quality and lower costs. We discuss four policies that could build on the ACA to strengthen exchanges:⁴¹

- Standardizing benefits provided within exchange plan levels.
- Requiring small businesses participating in the exchange to make fixed contributions to employee coverage.
- Requiring drug manufacturers to pay a minimum rebate on brand-name drugs covered under exchange plans.
- Stronger negotiation with health insurers participating in the exchange.

Each of these four policies offers opportunities to promote competition and reduce costs within the exchanges. In order to estimate cost savings from these policies, we had to estimate the baseline amount of private spending in the small group and individual exchanges from 2014–2023. The CMS projections include an estimate of individual exchange spending, but the CMS estimates include small group exchange spending in an aggregate ESI category. We therefore use an estimate from the Urban Institute's Health Insurance Policy Simulation Model (HIPSM) of the proportion of ESI spending, by firm size, to distribute total ESI spending across the small- and large-group markets. For consistency with the Actuary's assumptions with respect to the individual exchanges, we assume that all small group spending is in the exchange. There is no residual small group or individual market. Based on these adjustments, we then calculate total exchange spending as the sum of the small group and individual markets.

Because two of the specific policies in this option rely on generating more competition between plans in the exchange, we also needed an estimate of the proportion of exchange spending in relatively "competitive" health insurance markets. We identified the market share held by the largest insurers in each state from an AMA report.⁴² We then determined the proportion of the total U.S. population living in states where the top two insurers had a market share of 70 percent or greater and found that 31 percent of the population is living in states with these more concentrated markets. This estimate is then used to distribute total exchange spending into competitive (69 percent) and noncompetitive (31 percent) markets.

We then estimated the proportion of all private spending in the exchange and applied that proportion to private spending on each service type to determine exchange spending on hospitals, physicians, and prescription drugs. This provides an estimate of exchange-based drug spending for the drug rebate policy.

We make the following conservative assumptions regarding savings from the four policies within the exchange:

Policy	Savings assumptions
Standardizing benefits provided within exchange plan levels	Reduces exchange spending by 5 percent in competitive markets
Requiring drug manufacturers to pay a minimum rebate on brand-name drugs covered under exchange plans	Saves 12 percent on exchange drug spending
Stronger negotiation with health insurers participating in the exchange	Limits exchange spending growth to the growth rate of GDP + 1 percent in competitive markets
Requiring small businesses participating in the exchange to make fixed contributions to employee coverage	Reduces exchange spending in the small group market by 3 percent

While we believe that these four policies could be implemented simultaneously, we do not assume that the savings estimates are mutually exclusive. In order to generate an estimate of the total potential savings from implementing all four policies, we assume a reduction of one-third off the sum of the savings from the four options. Savings estimates from this combination of policies can be found in table A8.

Public plan

During the health care reform debate, the notion of the public option became extremely controversial. Some saw the public option as a way to put cost containment pressure on the health care system, responding to the growing concentration in the provider and insurance markets. For others, a public plan became a way to move toward a government-run health care system. In our view, the public option should be thought of as a means to increase competitive pressures.⁴³ A public option would likely have lower administrative costs than private plans and establish or negotiate provider payment rates at lower levels than private payers are able or willing to pay today. The public plan we have envisioned would be designed to follow traditional Medicare principles in many respects, but would differ in other ways. The public option would be a national plan that would compete in health insurance exchanges.

For this option, we again need an estimate of baseline private spending in the small group and individual exchanges. As in the exchange policy option described previously, we used an estimate of the proportion of ESI spending, by firm size, to distribute total ESI spending across the small- and large-group markets. Spending in the small group market is then added to the Actuary’s estimates of individual exchange spending to generate total exchange spending. We assume no residual small group or individual market. We also calculate the proportion of private spending in the exchange for each year and use this proportion to distribute baseline private spending by service category (i.e., hospitals, physicians, drugs, and administrative costs), across exchange and nonexchange plans. We also make an assumption that half of all exchange spending will be through the public plan as a result of its competitive pricing.

For purposes of estimating savings, we assumed that the public plan would pay physicians and hospitals halfway between Medicare and commercial rates and would save 5 percent through negotiations with prescription drug manufacturers. A public plan would also generate 5 percent savings on administrative costs. We also assumed that private plans in the exchange would achieve savings in the presence of a public option by being able to bargain more effectively with providers. We assumed that private plans would be able to achieve roughly 40 percent of the savings achieved by the public plan, in part because private plans with greater leverage would remain viable in the presence of a public option. Details on the service-specific savings estimates are found in the table below. All estimates that reflect a reduction in physician rates incorporate a 30 percent volume offset.

	Savings for public plan (%)	Savings in private exchange plans (%)
Hospitals	14.8	5.6
Physicians	6.5 (4.5 with volume offset)	2.5 (1.7 with volume offset)
Drugs	5.0	1.9
Administrative costs	5.0	1.9

We made two alternative assumptions: (1) that the public plan affects the level of expenditures as described above, and (2) that it not only affects the level of spending but also slows the growth in expenditures to the rate of growth in GDP+1 percent. The fees would be set so that, after an assumption about expected volume growth, increases in price and volume would achieve an expenditure target equal to the growth in GDP+1 percent.⁴⁴ Savings estimates from these options are reported in table A9 (level only) and A10 (level and growth).

Exchange-based rate setting

An alternative to a public option would be to have exchanges themselves negotiate rates with providers. The plans participating in the exchanges would be required to pay no more than these negotiated rates, but they would be free to negotiate lower rates if possible. The underlying reason for exchange-based rate setting is the same as for the public option. Health care markets are by and large not competitive;

they are not able to bring about adequate control over health care costs, with the concentration in the insurance and the hospital industries being a major contributor to health care cost growth.

Our approach to estimating savings from exchange-based rate setting is the same as that described above for the public option, with two exceptions. First, we do not assume any administrative cost savings for this option, and second, all insurers participating in the exchange would benefit from the lower rates detailed above for the public plan. Savings estimates from these policies are reported in Tables A11 (level only) and A12 (level and growth).

All-payer rate setting

Probably the most dramatic approach to cost containment would be to establish an all-payer rate-setting system. This could be done in a number of ways. It could be adopted nationally or just in states where health care costs are growing considerably faster than the growth in GDP. The argument for an all-payer rate-setting system is that it is simply not possible to control the rate of growth in health expenditures by affecting only the payments under federal programs such as Medicare and Medicaid. Control over rates in these programs without control over the rest of the system would simply reduce access to federally financed programs. It could also invite cost shifting by strong providers in markets with weak payers. In an all-payer rate-setting system, payments would be set to establish expenditure growth targets. Adoption of an all-payer rate-setting system would be an acknowledgement that the degree of concentration in the insurance and hospital industries is incompatible with controlling health care costs.

We produced estimates for two options for an all-payer rate-setting system. Both will improve Medicaid rates relative to private and Medicare rates but still achieve additional savings relative to projected increases by slowing the rate of growth relative to the baseline. In both options, rate and fee increases will be set to achieve an expenditure target. In other words, the policy would project volume growth and set fees or rates to achieve the expenditure target.

Expenditure growth targets in this option are always a function of GDP growth rates. Because both GDP and expenditure growth rates reflect population growth, however, we need to calculate enrollment-adjusted GDP growth targets for each payer. For instance, if Medicare spending is growing by 8 percent and GDP growth is at 4.6 percent, restricting Medicare growth to 4.6 percent is not realistic if increased enrollment is driving much of the Medicare spending growth. In order to calculate these enrollment-adjusted targets, we first calculate enrollment growth rates for each payer based on the CMS Actuary's coverage estimates. We also calculate GDP growth and overall population growth based on the 2009 NHE projections.⁴⁵ Each payer is then assigned an enrollment-adjusted GDP growth target that accounts for enrollment growth in a given year. So, if GDP is growing at 4.6 percent, and population growth is growing at 0.9 percent, and Medicare enrollment is growing at 3 percent, the enrollment-adjusted GDP growth target for Medicare in that year will be $(1.046/1.009)*1.03$, or 6.8 percent. This effectively removes the effect of overall population growth from GDP growth and replaces it with payer-specific

growth. These enrollment-adjusted GDP growth targets are then used as the basis for any expenditure growth rate adjustments.

In some cases, we estimate fee reductions to physicians, which require an estimate of the behavioral response by physicians. CMS assumes a 30 percent volume/intensity response to price reductions for physician services.⁴⁶ This means that 30 percent of any savings from a physician fee reduction will be offset by increases in volume and intensity.

Details of the expenditure growth targets, by payer and service, for our two all-payer rate setting options are summarized in the table below.

	Option A	Option B
Hospitals		
Medicare	GDP	GDP
Medicaid	GDP + 1	5 percent rate increase, GDP
Private	GDP	GDP
Physicians		
Medicare	GDP + 1	GDP + 1
Medicaid	GDP + 2	18 percent rate increase, GDP + 1
Private	GDP	GDP
Pharmaceuticals		
Medicare	GDP + 1	GDP + 1
Medicaid	No change	No change
Private	GDP + 1	GDP + 1
Note: All GDP growth targets reflect adjustments for payer-specific enrollment growth.		

Total savings estimates are generated by summing the savings from each service-specific policy. Savings estimates from these policies are found in tables A13 (option A) and A14 (option B).

Conclusion

It is indisputable that health care spending that grows significantly faster than the growth in the economy is a serious national problem. In our full [report](#), we discuss various contributors to health care cost growth and argue that the Affordable Care Act contains provisions for controlling health care costs. We also suggest that there a number of additional polices that could be adopted in the effort to contain costs. We discuss 10 policies in detail in the full report along with their associated savings estimates, while this appendix provides additional details on the methods used to generate the estimates. Several of these policies are alternatives to one another (e.g., public option and exchange-based rate setting), and others interact so that estimates are not additive. All things considered, however, it seems possible to achieve savings of 5 to 10 percent over and above the savings that would occur if policies included in the ACA are successful.

Notes

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⁹ Congressional Budget Office, *Limiting Tort Liability for Medical Malpractice* (Washington, DC: Congressional Budget Office, 2004), <http://www.cbo.gov/ftpdocs/49xx/doc4968/01-08-MedicalMalpractice.pdf>.

¹⁰ Ibid.

¹¹ D. P. Kessler and M. McClellan, “Do Doctors Practice Defensive Medicine?” *Quarterly Journal of Economics* 111, no. 2 (1996): 353–90.

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³³ Implicit in this is the assumption that providers would agree to accept bundled payments for the patients to whom they apply or that they would be required to do so. Providers may resist payments at the levels we consider here and, as such, payment rates would need to be increased to preserve access. This would mean that potential savings would be reduced and that the estimates we present below would need to be viewed as an upper bound on the potential savings from acute and procedural bundled payments.

³⁴ See PROMETHEUS playbook estimates, available at prometheuspayout.org.

³⁵ A similar methodology, using an older version of the same PROMETHEUS data, was used by RAND to estimate potential savings from applying bundled payments to private plans in Massachusetts. The authors did not model savings for Medicare and Medicaid. See Eibner et al. (2009).

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³⁸ There were no reliable estimates in the literature regarding price differentials for outpatient services. These numbers represent our conservative best guess.

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⁴⁰ States have the option to open exchanges to groups with more than 100 employees beginning in 2017.

⁴¹ See full report for policy details.

⁴² American Medical Association, “Competition in Health Insurance: A Comprehensive Study of U.S. Markets—2008 update.” This report used market shares as of 2006 with nine states missing information. This information was supplemented with the previous year’s report to reduce missing states to four.

⁴³ J. Holahan and L. J. Blumberg, *Is the Public Option a Necessary Part of Health Reform?* (Washington, DC: The Urban Institute, 2009).

⁴⁴ When adjusting growth rates to GDP targets, we adjust the targets for the effects of population growth and enrollment growth as described in the section on all-payer rate setting.

⁴⁵ Because all of these projections are only available through 2019, we use the average of the growth rates for 2017–2019 to project enrollment, population, and GDP growth for 2020–2023.

⁴⁶ <https://www.cms.gov/ActuarialStudies/downloads/PhysicianResponse.pdf>.

Appendix Tables

Table A1: Baseline spending projections, by payer and service, 2014–2023 (in billions)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Total National Health Expenditures, Except Other Private/Public	2509.4	2742.4	2957.7	3167.8	3382.8	3605.0	3857.1	4127.5	4417.5	4728.6	5062.4	38,048.8
		9.29%	7.85%	7.10%	6.79%	6.57%	6.99%	7.01%	7.03%	7.04%	7.06%	
GDP Growth		5.50%	5.10%	4.70%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	
Population Growth		0.88%	0.87%	0.83%	0.86%	0.85%	0.81%	0.84%	0.84%	0.84%	0.84%	
Private Insurance	1025.3	1145.4	1235.1	1327.6	1419.5	1486.4	1575.5	1670.0	1770.2	1876.5	1989.2	15,495.4
Annual Percent Change in Private Expenditures		11.71%	7.83%	7.49%	6.92%	4.71%	5.99%	6.00%	6.00%	6.00%	6.01%	
Annual Percent Change in Private Enrollment		3.40%	1.11%	1.55%	1.23%	0.05%	0.29%	0.52%	0.52%	0.52%	0.52%	
Claims	897.1	1001.3	1078.5	1156.4	1232.6	1288.2	1363.9	1444.2	1529.1	1619.1	1714.5	13,427.9
Hospitals	334.9	375.7	406.0	436.7	465.4	485.4	512.0	540.2	569.9	601.2	634.2	5,026.7
Annual Percent Change in Hospital Spending		12.17%	8.07%	7.56%	6.56%	4.30%	5.50%	5.50%	5.50%	5.50%	5.50%	
Physicians	316.4	351.9	378.5	405.9	433.3	453.0	479.9	508.3	538.4	570.3	604.1	4,723.4
Annual Percent Change in Physician Spending		11.20%	7.56%	7.24%	6.75%	4.56%	5.92%	5.92%	5.92%	5.92%	5.92%	
Drugs	125.0	138.5	148.2	158.1	169.2	178.4	191.1	204.7	219.2	234.8	251.5	1,893.7
Annual Percent Change in Drug Spending		10.77%	7.00%	6.69%	7.03%	5.40%	7.11%	7.11%	7.11%	7.11%	7.11%	
Other	120.7	135.2	145.8	155.7	164.7	171.5	181.0	191.0	201.6	212.8	224.7	1,784.0
Annual Percent Change in Other Spending		12.03%	7.84%	6.80%	5.78%	4.11%	5.55%	5.55%	5.55%	5.55%	5.55%	
Administrative costs	128.2	144.1	156.6	171.2	186.9	198.2	211.6	225.8	241.1	257.4	274.7	2,067.5
		12.40%	8.67%	9.32%	9.20%	6.03%	6.75%	6.75%	6.75%	6.75%	6.75%	
Medicare Baseline	604.8	626.1	682.1	726.1	778.1	836.4	897.9	964.0	1035.0	1111.2	1193.2	8,850.1
Annual Percent Change in Medicare spending		3.52%	8.94%	6.45%	7.16%	7.49%	7.35%	7.36%	7.36%	7.37%	7.38%	
Annual Percent Change in Medicare enrollment		2.95%	2.86%	2.78%	3.07%	2.80%	3.07%	2.98%	2.98%	2.98%	2.98%	
Claims	574.4	594.4	647.7	689.3	738.7	794.2	852.8	915.7	983.4	1056.1	1134.2	8,406.6
Hospitals	280.8	292.9	321.8	343.9	368.1	394.2	421.5	450.6	481.8	515.1	550.7	4,140.6
Annual Percent Change in Hospital Spending		4.30%	9.90%	6.86%	7.01%	7.12%	6.91%	6.91%	6.91%	6.91%	6.91%	
Physicians	116.8	117.8	123.8	129.2	138.6	150.0	162.4	175.9	190.4	206.1	223.2	1,617.5
Annual Percent Change in Physician Spending		0.91%	5.09%	4.39%	7.20%	8.29%	8.26%	8.26%	8.26%	8.26%	8.26%	
Drugs	76.7	80.5	89.6	97.1	105.4	114.7	124.7	135.6	147.5	160.4	174.4	1,229.8
Annual Percent Change in Drug Spending		4.94%	11.32%	8.34%	8.54%	8.83%	8.75%	8.75%	8.75%	8.75%	8.75%	
Other	100.2	103.2	112.4	119.0	126.7	135.3	144.2	153.6	163.7	174.5	186.0	1,418.7
Annual Percent Change in Other Spending		3.04%	8.95%	5.86%	6.48%	6.74%	6.57%	6.57%	6.57%	6.57%	6.57%	
Administrative costs	30.4	31.7	34.4	36.8	39.4	42.2	45.1	48.2	51.6	55.2	59.0	443.5
		4.40%	8.38%	7.02%	6.98%	7.06%	6.96%	6.96%	6.96%	6.96%	6.96%	
Medicaid Baseline	557.7	657.3	716.6	779.4	832.7	900.8	977.9	1,061.7	1,152.8	1,251.9	1,359.6	9,690.8
Annual Percent Change in Medicaid Spending		17.86%	9.02%	8.76%	6.84%	8.18%	8.56%	8.57%	8.58%	8.59%	8.61%	
Annual Percent Change in Medicaid Enrollment		34.84%	1.20%	-0.59%	-2.38%	0.97%	1.21%	-0.07%	-0.07%	-0.07%	-0.07%	
Claims	512.9	604.5	659.1	716.8	765.8	828.4	899.4	976.5	1,060.4	1,151.6	1,250.8	8,913.3
Hospitals	187.6	218.7	236.0	253.9	268.2	286.7	307.9	330.7	355.2	381.4	409.7	3,048.4
Annual Percent Change in Hospital Spending		16.62%	7.89%	7.56%	5.65%	6.90%	7.40%	7.40%	7.40%	7.40%	7.40%	
Physicians	60.6	71.0	76.7	82.7	87.4	93.5	100.5	107.9	116.0	124.6	133.9	994.3
Annual Percent Change in Physician Spending		17.10%	8.01%	7.78%	5.75%	6.95%	7.45%	7.45%	7.45%	7.45%	7.45%	
Drugs	31.8	37.4	40.6	43.8	46.4	49.7	53.6	57.7	62.1	66.9	72.0	530.2
Annual Percent Change in Drug Spending		17.49%	8.48%	8.02%	5.93%	7.10%	7.68%	7.68%	7.68%	7.68%	7.68%	
Other	232.9	277.4	305.8	336.4	363.7	398.5	437.4	480.2	527.1	578.7	635.2	4,340.4
Annual Percent Change in Other Spending		19.10%	10.26%	10.00%	8.12%	9.55%	9.78%	9.78%	9.78%	9.78%	9.78%	
Administrative Costs	44.8	52.8	57.5	62.6	66.9	72.4	78.5	85.2	92.4	100.3	108.8	777.5
		17.88%	8.93%	8.95%	6.84%	8.19%	8.48%	8.48%	8.48%	8.48%	8.48%	

Table A1: Baseline spending projections, by payer and service, 2014–2023 cont'd (in billions)

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Total</u>
Out of Pocket (OOP)	321.6	313.6	323.9	334.7	352.5	381.4	405.8	431.8	459.5	489.0	520.4	4,012.5
Annual Percent Change in OOP Spending		-2.49%	3.28%	3.33%	5.32%	8.20%	6.40%	6.40%	6.41%	6.42%	6.43%	
Hospitals	25.4	24.7	25.5	26.4	27.7	29.8	31.3	32.9	34.6	36.3	38.2	307.3
Annual Percent Change in Hospital Spending		-3.00%	3.11%	3.54%	5.14%	7.43%	5.12%	5.12%	5.12%	5.12%	5.12%	
Physicians	59.6	58.5	61.0	64.1	68.6	75.3	81.1	87.5	94.3	101.6	109.5	801.6
Annual Percent Change in Physician Spending		-1.97%	4.36%	5.13%	6.93%	9.75%	7.79%	7.79%	7.79%	7.79%	7.79%	
Drugs	54.4	52.7	54.0	55.7	58.8	63.9	68.5	73.4	78.6	84.2	90.3	680.2
Annual Percent Change in Drug Spending		-3.18%	2.54%	3.01%	5.61%	8.76%	7.14%	7.14%	7.14%	7.14%	7.14%	
Other	182.1	177.7	183.4	188.5	197.4	212.4	224.9	238.0	252.0	266.7	282.4	2,223.5
Annual Percent Change in Other Spending		-2.38%	3.18%	2.80%	4.71%	7.60%	5.86%	5.86%	5.86%	5.86%	5.86%	

Source: Authors' calculations based on data from Centers for Medicare and Medicaid Services, Office of the Actuary.

Table A2: Savings from capping the tax exclusion, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,697.5	2,909.6	3,117.7	3,330.4	3,550.6	3,799.4	4,066.2	4,352.5	4,659.7	4,989.4	37,473.1
Change in total spending for all payers	-44.9	-48.1	-50.1	-52.4	-54.4	-57.7	-61.2	-64.9	-68.9	-73.0	-575.6
Savings as a % of baseline total spending for all payers	-1.6%	-1.6%	-1.6%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%	-1.4%	-1.5%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-44.9	-48.1	-50.1	-52.4	-54.4	-57.7	-61.2	-64.9	-68.9	-73.0	-575.6
Savings as a % of baseline spending for private insurance	-3.9%	-3.9%	-3.8%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%

Note: This option assumes savings of 10 percent on those below the 90th percentile and savings of 5 percent on those in the 91st–95th percentile.

Table A3: Savings from malpractice reform, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,739.7	2,948.8	3,152.0	3,359.1	3,572.6	3,822.4	4,090.3	4,377.7	4,686.0	5,016.9	37,765.5
Change in total spending for all payers	-2.7	-8.9	-15.8	-23.7	-32.4	-34.7	-37.1	-39.8	-42.5	-45.5	-283.3
Savings as a % of baseline total spending for all payers	-0.1%	-0.3%	-0.5%	-0.7%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.7%
Change in spending for Medicare	-0.6	-2.0	-3.6	-5.4	-7.5	-8.1	-8.7	-9.3	-10.0	-10.7	-65.9
Savings as a % of total spending for Medicare	-0.1%	-0.3%	-0.5%	-0.7%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.7%
Change in spending for Medicaid	-0.7	-2.1	-3.9	-5.8	-8.1	-8.8	-9.6	-10.4	-11.3	-12.2	-72.2
Savings as a % of baseline spending for Medicaid	-0.1%	-0.3%	-0.5%	-0.7%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.7%
Change in private spending	-1.5	-4.7	-8.3	-12.4	-16.8	-17.8	-18.9	-20.1	-21.3	-22.6	-145.2
Savings as a % of baseline private spending	-0.1%	-0.3%	-0.5%	-0.7%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.7%

Notes: Savings are distributed across payers according to the baseline distribution of total spending. Private spending includes private insurance and OOP spending.

Table A4: Savings from disease prevention, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,727.6	2,941.6	3,149.9	3,363.6	3,584.6	3,833.9	4,102.3	4,390.4	4,699.4	5,031.1	37,824.4
Change in total spending for all payers	-14.8	-16.1	-17.9	-19.2	-20.4	-23.2	-25.2	-27.1	-29.1	-31.4	-224.4
Savings as a % of baseline total spending for all payers	-0.5%	-0.5%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
Change in spending for Medicare	-2.4	-2.5	-2.8	-3.0	-3.1	-3.4	-3.8	-4.1	-4.4	-4.8	-34.4
Savings as a % of total spending for Medicare	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%
Change in spending for Medicaid	-7.5	-8.4	-9.4	-10.1	-11.0	-13.1	-14.3	-15.6	-16.9	-18.3	-124.6
Savings as a % of baseline spending for Medicaid	-1.1%	-1.2%	-1.2%	-1.2%	-1.2%	-1.3%	-1.4%	-1.3%	-1.3%	-1.3%	-1.3%
Change in private spending	-4.9	-5.2	-5.7	-6.1	-6.3	-6.7	-7.0	-7.4	-7.8	-8.3	-65.3
Savings as a % of baseline private spending	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%

Note: Private spending includes private insurance and OOP spending.

Table A5: Savings from chronic care management, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,733.4	2,938.6	3,137.4	3,350.6	3,570.8	3,820.7	4,088.8	4,376.4	4,684.9	5,016.0	37,717.5
Change in total spending for all payers	-9.0	-19.1	-30.4	-32.2	-34.2	-36.4	-38.7	-41.1	-43.7	-46.4	-331.3
Savings as a % of baseline total spending for all payers	-0.3%	-0.6%	-1.0%	-1.0%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%
Change in spending for Medicare	-5.1	-10.8	-17.2	-18.3	-19.4	-20.7	-22.0	-23.4	-24.9	-26.4	-188.2
Savings as a % of total spending for Medicare	-0.8%	-1.6%	-2.4%	-2.4%	-2.3%	-2.3%	-2.3%	-2.3%	-2.2%	-2.2%	-2.1%
Change in spending for Medicaid	-3.1	-6.5	-10.4	-11.0	-11.7	-12.4	-13.1	-13.9	-14.8	-15.7	-112.6
Savings as a % of baseline spending for Medicaid	-0.5%	-0.9%	-1.3%	-1.3%	-1.3%	-1.3%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%
Change in spending for private insurance	-0.8	-1.8	-2.8	-2.9	-3.1	-3.3	-3.5	-3.8	-4.0	-4.3	-30.4
Savings as a % of baseline spending for private insurance	-0.1%	-0.1%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%

Notes: In this option, private insurance savings include some OOP savings for Medicare and privately insured with 5+ chronic conditions. Therefore the savings as a percentage of baseline private insurance spending are somewhat overstated. The distribution of savings across payers is based on the following assumptions: (1) 70 percent of the savings on dual long-term care beneficiaries is Medicare, the remainder is Medicaid; (2) 80 percent of savings on dual beneficiaries with no long-term care is Medicare and the remainder is Medicaid; (3) savings on the non-duals is all Medicaid; (4) 67 percent of the Medicare chronically ill savings is federal, the remainder is private. These assumptions reflect the fact that most savings from chronic care management are on acute care services and that these services are paid for primarily by Medicare.

Table A6: Savings from reforming end-of-life care, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,734.6	2,949.2	3,158.7	3,373.1	3,594.5	3,845.9	4,115.4	4,404.5	4,714.7	5,047.5	37,938.1
Change in total spending for all payers	-7.8	-8.5	-9.1	-9.7	-10.5	-11.2	-12.0	-12.9	-13.9	-14.9	-110.6
Savings as a % of baseline total spending for all payers	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Baseline spending for Medicare	626.1	682.1	726.1	778.1	836.4	897.9	964.0	1035.0	1111.2	1193.2	8850.1
Post-reform spending for Medicare	618.3	673.6	717.0	768.4	825.9	886.7	951.9	1022.0	1097.4	1178.3	8739.5
Change in spending for Medicare	-7.8	-8.5	-9.1	-9.7	-10.5	-11.2	-12.0	-12.9	-13.9	-14.9	-110.6
Savings as a % of total spending for Medicare	-1.2%	-1.3%	-1.2%	-1.3%	-1.3%	-1.3%	-1.2%	-1.2%	-1.2%	-1.2%	-1.2%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for private insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note: This assumes that 25 percent of Medicare spending is on end-of-life care and that savings of 5 percent are possible, resulting in savings on Medicare spending of 1.25 percent.

Table A7: Savings from bundled payments, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014–2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,740.5	2,953.5	3,161.0	3,372.9	3,594.4	3,845.8	4,115.4	4,404.6	4,714.8	5,048.0	37,950.9
Change in total spending for all payers (savings)	-1.9	-4.2	-6.8	-9.9	-10.6	-11.3	-12.1	-12.9	-13.8	-14.4	-97.9
Savings as a % of baseline total spending for all payers	-0.1%	-0.1%	-0.2%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%
Change in spending for Medicare	-1.3	-2.7	-4.4	-6.2	-6.7	-7.2	-7.7	-8.3	-8.9	-9.3	-62.8
Savings as a % of total spending for Medicare	-0.2%	-0.4%	-0.6%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-0.7%
Change in spending for Medicaid	-0.2	-0.4	-0.7	-1.0	-1.0	-1.1	-1.2	-1.3	-1.4	-1.4	-9.6
Savings as a % of baseline spending for Medicaid	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Change in spending for private insurance	-0.5	-1.0	-1.8	-2.7	-2.8	-3.0	-3.2	-3.3	-3.5	-3.7	-25.5
Savings as a % of baseline spending for private insurance	0.0%	-0.1%	-0.1%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%

Notes: Savings by payer are total savings for covered individuals and include OOP savings. Savings as a percent of baseline spending by payer are therefore overstated.

Table A8: Savings from strengthening the exchanges, 2014–2023

<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,726.2	2,938.1	3,145.5	3,357.5	3,578.9	3,827.7	4,094.3	4,380.2	4,686.9	5,015.9	37,751.2
Change in total spending for all payers	-16.2	-19.6	-22.3	-25.3	-26.1	-29.4	-33.2	-37.3	-41.7	-46.6	-297.6
Savings as a % of baseline total spending for all payers	-0.6%	-0.7%	-0.7%	-0.7%	-0.7%	-0.8%	-0.8%	-0.8%	-0.9%	-0.9%	-0.8%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-16.2	-19.6	-22.3	-25.3	-26.1	-29.4	-33.2	-37.3	-41.7	-46.6	-297.6
Savings as a % of baseline spending for private insurance	-1.4%	-1.6%	-1.7%	-1.8%	-1.8%	-1.9%	-2.0%	-2.1%	-2.2%	-2.3%	-1.9%

Note: This reflects the sum of savings on implementing standardized benefit packages, a minimum rebate for drugs, a fixed contribution for small employers, and aggressive negotiation with insurers, less 33 percent, for expected overlap in savings from the individual policies.

Table A9: Savings from a public option, 2014–2023

	<i>Impacts on level of spending only</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,725.0	2,938.5	3,145.7	3,358.0	3,578.7	3,829.2	4,097.9	4,386.2	4,695.5	5,027.4	37,782.1
Change in total spending for all payers	-17.4	-19.2	-22.1	-24.8	-26.3	-27.9	-29.5	-31.3	-33.1	-35.1	-266.6
Savings as a % of baseline total spending for all payers	-0.6%	-0.6%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%	-0.7%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-17.4	-19.2	-22.1	-24.8	-26.3	-27.9	-29.5	-31.3	-33.1	-35.1	-266.6
Savings as a % of baseline spending for private insurance	-1.5%	-1.6%	-1.7%	-1.7%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%	-1.7%

Note: These estimates reflect an option that impacts the level of spending only.

Table A10: Savings from a public option, 2014–2023

	<i>Impacts on level and growth of spending</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,725.0	2,935.9	3,142.6	3,354.2	3,576.2	3,824.0	4,089.7	4,374.6	4,680.2	5,008.0	37,710.6
Change in total spending for all payers	-17.4	-21.8	-25.2	-28.6	-28.8	-33.1	-37.7	-42.8	-48.4	-54.4	-338.1
Savings as a % of baseline total spending for all payers	-0.6%	-0.7%	-0.8%	-0.8%	-0.8%	-0.9%	-0.9%	-1.0%	-1.0%	-1.1%	-0.9%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-17.4	-21.8	-25.2	-28.6	-28.8	-33.1	-37.7	-42.8	-48.4	-54.4	-338.1
Savings as a % of baseline spending for private insurance	-1.5%	-1.8%	-1.9%	-2.0%	-1.9%	-2.1%	-2.3%	-2.4%	-2.6%	-2.7%	-2.2%

Note: These estimates reflect an option that impacts both the level and growth of spending.

Table A11: Savings from exchange-based rate setting, 2014–2023

	<i>Impacts on level of spending only</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,719.2	2,932.2	3,138.5	3,349.9	3,570.1	3,820.2	4,088.4	4,376.2	4,685.0	5,016.3	37,696.0
Change in total spending for all payers	-23.2	-25.5	-29.3	-32.9	-34.9	-36.9	-39.1	-41.3	-43.6	-46.1	-352.8
Savings as a % of baseline total spending for all payers	-0.8%	-0.9%	-0.9%	-1.0%	-1.0%	-1.0%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-23.2	-25.5	-29.3	-32.9	-34.9	-36.9	-39.1	-41.3	-43.6	-46.1	-352.8
Savings as a % of baseline spending for private insurance	-2.0%	-2.1%	-2.2%	-2.3%	-2.3%	-2.3%	-2.3%	-2.3%	-2.3%	-2.3%	-2.3%

Note: These estimates reflect an option that impacts the level of spending only

Table A12: Savings from exchange-based rate setting, 2014–2023

	<i>Impacts on level and growth of spending</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,719.2	2,929.7	3,135.5	3,346.3	3,567.7	3,815.2	4,080.4	4,364.9	4,670.0	4,997.3	37,626.0
Change in total spending for all payers	-23.2	-28.0	-32.3	-36.5	-37.3	-41.9	-47.1	-52.6	-58.6	-65.1	-422.8
Savings as a % of baseline total spending for all payers	-0.8%	-0.9%	-1.0%	-1.1%	-1.0%	-1.1%	-1.1%	-1.2%	-1.2%	-1.3%	-1.1%
Change in spending for Medicare	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of total spending for Medicare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for Medicaid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Savings as a % of baseline spending for Medicaid	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in spending for private insurance	-23.2	-28.0	-32.3	-36.5	-37.3	-41.9	-47.1	-52.6	-58.6	-65.1	-422.8
Savings as a % of baseline spending for private insurance	-2.0%	-2.3%	-2.4%	-2.6%	-2.5%	-2.7%	-2.8%	-3.0%	-3.1%	-3.3%	-2.7%

Note: These estimates reflect an option that impacts both the level and growth of spending.

Table A13: Savings from all-payer rate setting, 2014–2023

	<i>Option A</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,742.4	2,928.3	3,114.4	3,300.5	3,504.7	3,727.0	3,961.1	4,211.0	4,478.0	4,763.2	36,730.6
Change in total spending for all payers	0.0	-29.4	-53.4	-82.3	-100.3	-130.1	-166.4	-206.5	-250.6	-299.2	-1,318.2
Savings as a % of baseline total spending for all payers	0.0%	-1.0%	-1.7%	-2.4%	-2.8%	-3.4%	-4.0%	-4.7%	-5.3%	-5.9%	-3.5%
Change in spending for Medicare	0.0	-6.9	-4.2	-4.6	-8.8	-10.7	-13.7	-17.1	-21.0	-25.3	-112.4
Savings as a % of total spending for Medicare	0.0%	-1.0%	-0.6%	-0.6%	-1.1%	-1.2%	-1.4%	-1.7%	-1.9%	-2.1%	-1.3%
Change in spending for Medicaid	0.0	-3.6	-13.6	-24.6	-29.4	-35.7	-47.6	-60.9	-75.7	-92.0	-383.1
Savings as a % of baseline spending for Medicaid	0.0%	-0.5%	-1.7%	-3.0%	-3.3%	-3.6%	-4.5%	-5.3%	-6.0%	-6.8%	-4.0%
Change in spending for private insurance	0.0	-18.9	-35.6	-53.1	-62.1	-83.7	-105.1	-128.4	-154.0	-181.9	-822.8
Savings as a % of baseline spending for private insurance	0.0%	-1.5%	-2.7%	-3.7%	-4.2%	-5.3%	-6.3%	-7.3%	-8.2%	-9.1%	-5.3%

Note: These estimates reflect Option A: Hospital growth rates for Medicaid limited to GDP+1, Medicare and private to GDP; physician growth rates for Medicare limited to GDP+1, private to GDP, and Medicaid to GDP+2; drug growth rates for Medicare and private limited to GDP+1, Medicaid no change.

Table A14: Savings from all-payer rate setting, 2014–2023

	<i>Option B</i>										
<i>(All dollar amounts in billions)</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2014– 2023
Baseline total spending for all payers	2,742.4	2,957.7	3,167.8	3,382.8	3,605.0	3,857.1	4,127.5	4,417.5	4,728.6	5,062.4	38,048.8
Post-reform total spending for all payers	2,766.7	2,951.2	3,135.0	3,318.3	3,520.1	3,739.9	3,970.8	4,217.3	4,480.5	4,761.7	36,861.5
Change in total spending for all payers	24.3	-6.5	-32.8	-64.5	-84.9	-117.2	-156.7	-200.2	-248.1	-300.8	-1,187.2
Savings as a % of baseline total spending for all payers	0.9%	-0.2%	-1.0%	-1.9%	-2.4%	-3.0%	-3.8%	-4.5%	-5.2%	-5.9%	-3.1%
Change in spending for Medicare	0.0	-6.9	-4.2	-4.6	-8.8	-10.7	-13.7	-17.1	-21.0	-25.3	-112.4
Savings as a % of total spending for Medicare	0.0%	-1.0%	-0.6%	-0.6%	-1.1%	-1.2%	-1.4%	-1.7%	-1.9%	-2.1%	-1.3%
Change in spending for Medicaid	24.3	19.3	7.1	-6.8	-14.0	-22.8	-37.9	-54.6	-73.1	-93.6	-252.1
Savings as a % of baseline spending for Medicaid	3.7%	2.7%	0.9%	-0.8%	-1.5%	-2.3%	-3.6%	-4.7%	-5.8%	-6.9%	-2.6%
Change in spending for private insurance	0.0	-18.9	-35.6	-53.1	-62.1	-83.7	-105.1	-128.4	-154.0	-181.9	-822.8
Savings as a % of baseline spending for private insurance	0.0%	-1.5%	-2.7%	-3.7%	-4.2%	-5.3%	-6.3%	-7.3%	-8.2%	-9.1%	-5.3%

Note: These estimates reflect Option B: Hospital rates increased for Medicaid (~5%) then grow at GDP, Medicare and private grow at GDP; physician rate increase for Medicaid (~18%), then grow at GDP+1, Medicare grows at GDP + 1, and private at GDP; drug growth rates for Medicare and private limited to GDP+1, Medicaid no change.