

Bending the Curve: Technical Documentation

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INTRODUCTION

This document is a compilation of the technical documentation developed for the Commonwealth Fund analysis of options for reducing health spending growth entitled “Bending the Curve.” In this analysis, we provided cost analyses for 15 alternatives for reducing health care costs. We developed these analyses with the Lewin Group Health Benefits Simulation Model (HBSM) and the best available data. For each of the 15 options, we provide a narrative summary of the proposal, a review of the available research and evidence on the option and our estimates of the program’s impact over five- and ten-year periods.

The approach was to develop methodologies specific to the particular sector and stakeholders. We did this by using the appropriate literature concerning the option to develop an approach that is based on the relevant literature and data. The main areas of focus would include the following:

- Potential gains from more efficient insurance arrangements
- Payment policies that result in more efficient pricing and provide incentives to support and reward more cost-effective, high-quality care and integrated care.
- Non-financial incentives to improve performance, including public reporting and efforts to promote shared and informed decision making about care.
- Investment in information technology to promote efficient care and provide physicians with decision support to manage care well and report on performance.
- Coverage expansions and benefit improvements.

In areas where little research and/or data are available, we explored methods for bounding our estimates with theoretical limits on what the most the savings might be. As these options are targeted to specific groups or sectors of the industry, they would affect specific portions of the system, such as provider administration or insurer profits. We allocated the savings across the major payer groups including federal and state governments, employers and families.

The options that we calculated cost estimates were as follows:

- **Excess Medicare Advantage Payments** – This policy option would re-calibrate the benchmark rate to the FFS per-capita-costs, eliminating excess payment due to differences between the existing benchmark rate and the FFS per-capita-costs.
- **Strengthening Primary Care :Medicare Medical Homes** - This policy option would implement Primary Care Case Management (PCCM) in the Medicare program under the construct of the ‘Medical Home’ and increase Medicaid participation.
- **Public Health: Reducing Tobacco use Prevalence** – This policy option would use Federal tax policy to reduce the prevalence of Tobacco use in the United States.
- **Public Health: Reducing Obesity prevalence** - The intent of this proposal is to use Federal tax and regulatory policy to reduce the prevalence of obesity in the United States.

- **Medicare Blended Episode and Fee-for-Service Payment** - The intent of this policy option is to accrue savings to the Medicare program by moving to a payment system based on a blend of bundled payments for episodes of care and fee-for-service.
- **Promoting Health Information Technology** - The intent of this policy option is to use Federal policy to increase the adoption of Health Information Technology (HIT) in the United States health care system.
- **All Payer Provider Payment Methods and Rates** - This policy option would use Federal statute to create standardized and publicly available payment rates for all payers.
- **Medicare Negotiation of Prescription Drug Prices** - In this analysis we evaluate the cost impact of the policy option to give the Secretary of Health and Human Services (HHS) the authority to negotiate prices for Part D prescription drug plans.
- **Medicare Pay-for-Performance Program** - This policy option expand the Center for Medicare and Medicaid Services (CMS)/Premier Hospital Quality Incentive Demonstration (HQID) pay for performance program to all acute care hospitals.
- **Medicare area-specific spending growth limits** - The policy proposal is to change the methodology for calculating the way the annual update to the PFS and the PPS systems are administered. This option would re-calibrate the update based on the relative costliness of the region to the nation.
- **Competitive Bidding Among Medicare Plans** - The intent of this policy option is to accrue savings to Medicare by setting the rates using a competitive bidding mechanism. This would be implemented by setting the payment county benchmark rate to the lower of the Medicare Advantage average bid in a region or the National average per-beneficiary cost of providing traditional Medicare.
- **Center for Medical Effectiveness and Health Care Decision-Making** - The purpose of this policy option is to create a Center for Medical effectiveness and Health Care Decision Making that would promote promulgation of clinical guidelines and create financial incentives for physicians to implement them in practice.
- **Incentives in Health Insurance/Benefit Design to Provide Positive Incentives for Healthy Lives and Disease Management** - This policy option would use a Federal initiative to support state and private employer efforts that use benefit designs that provide positive incentives for preventive care and healthy behavior.
- **Medicare Patient Shared Decision Making : 11 conditions** - This policy option uses penalties in provider reimbursement to to promote the use of Patient Decision Aid's (PtDA).
- **Value Driven Benefit Plans: Modify Federal HSA Legislation** - The goal of this policy option is to modify the HSA such that it encourages more value driven health benefit designs, preventive care utilization, better chronic disease management, and to better target the tax preference to middle and low income families.

In addition to the stand alone analyses for each option, we estimated the combined effect of seven of the policy options. We estimated effects on aggregate spending and the different payer groups. The estimates for HIT, the Center for Clinical Effectiveness , Public Health, Medical

Home and RX Negotiations are additive. Since the Episode of care/FFS proposal will interact with the Medical Home and Medicare Advantage effects, we calculated a net effect for these three options and added them to the effects of the other four.

I. EXCESS MEDICARE ADVANTAGE PAYMENTS (ADJUSTED TO MATCH ASSUMPTIONS OF COMPETITIVE BIDDING PROPOSAL)

In 2003, the Medicare Modernization Act (MMA) created the Medicare Advantage program (MA). Medicare Advantage was designed to expand and improve upon its predecessor, Medicare + Choice (M+C) by expanding coverage choices through private health plans and provide a prescription drug benefit. To promote plan participation, provisions in the statute defined county payment rates to participating plans above the comparable fee-for-service (FFS) costs in the counties. The resulting 'excess' payment currently represents 12% over the county FFS costs.

The intent of this proposal is to return savings to the Medicare program and remove the 'excess' payment by recalibrating payment to the FFS county costs. In an analysis of current compared to proposed payment rates we estimated that the savings accrued to the Medicare program to be \$48.9 billion over 5 years and \$124.0 billion over 10 years. We estimated the savings to national health spending over 5 years to be \$19.5 billion and \$49.6 billion over 10 years. Since beneficiaries will likely face higher premiums and reduced benefits, we estimate the cost to households to be \$29.3 billion over 5 years and \$74.4 billion over 10 years.

Background

The sources of payments to MA plans in excess of the comparable FFS costs are rooted in the provisions included in the series of legislative actions that resulted in the current MA program. These provisions successively reduced the relationship with FFS costs and had the effect of increasing payment and making the program more attractive to plans.

Medicare's experience in the utilization of private health plans to expand beneficiaries' coverage choices began in 1985 when the Medicare HMO program became operational. This program allowed beneficiaries to enroll in Health Maintenance Organizations (HMOs). Under the Medicare HMO program, the plans were paid based on a rate book populated by the FFS adjusted average per capita costs (AAPCC). The AAPCCs were calculated by taking 95 percent of the estimated cost of FFS care for a Medicare beneficiary residing in the same county and adjusting it for certain risk factors associated with the beneficiary's demographics.

The intent of this approach was to tie payment to costs in the traditional Medicare program while adjusting for the health status of the enrollee and to realize a savings to the program by reimbursing at 95% of the rate the government would have incurred had the enrollee been covered in FFS. The implementation of this approach however revealed the cost to the program per enrollee actually to be higher under Medicare HMO. Research showed that because risk adjustment did not effectively account for the relatively healthier HMO enrollees, the plans on average were paid 5.7% over FFS.¹

¹ Brown RS, Clement DG, Hill JW, Retchin SM, Bergeron JW. "Do Health Maintenance Organizations Work for Medicare?" *Health Care Financing Review* 15(1): 7-23, Fall 1993.

The passage of the Balanced Budget Act of 1997 (BBA) created the Medicare + Choice (M+C) program which absorbed and made key changes to the Medicare HMO program. The first change allowed a much wider variety of health plan types to participate. The second was a move from basing payment on an adjusted FFS based rate book to a methodology largely driven by statute. In order to reduce the disparity in capitation rates across counties, the county rate was set to the maximum of: (1) a "floor" rate; (2) a 2% minimum update applied to the previous year's rate; or (3) a blended rate combining a national rate and the local rate. This restructuring of the payment system de-linked the rate book from the FFS costs of traditional Medicare.

In 2003, congress passed the Medicare Modernization Act (MMA). This legislation changed the M+C program into Medicare Advantage (MA). A key provision of MMA was the change made to the payment system. Under MMA, plan reimbursement would be determined by the relationship between the plan's bid and the benchmark rate.

The plan's bid is submitted to Medicare and represents the plans expected cost to provide the benefit. The benchmark is calculated by taking the average of the plan payment based on the payment year's rate book rates weighted by the projected enrollment in the plans' bids for the county. If the plan's bid is below the benchmark, the plan receives the bid plus 75% of the difference between the bid and the benchmark or 'savings'. The plan is required to use this 'savings' for additional benefits or premium reduction.

Much of the differential in the benchmark and the FFS per-capita costs are most heavily influenced by changes in the MA rate book that de-link per capita costs from rates. In the rebasing year of the rate book, The Office of the Actuary at CMS sets a 5 year moving average of county FFS per-capita-costs as the base for the rate book. Statutory adjustments mandated by the BBA are applied establishing floor rates and rates that blend local with national per-capita-costs for certain counties. After the rebasing year, the rate book is grown to reflect the growth in Part A and Part B Medicare expenditures with a minimum update of 2%. In addition, the rate is reset to the FFS cost in the county, if it would yield a higher rate.² Finally, Indirect Medical Education (IME) expenditures were included in the 5 year moving average used for the base year. Since, IME payments are made directly to teaching hospitals on behalf of MA plans for MA beneficiaries as direct payments by Medicare, this inclusion inflates the rate book and is projected forward each year in the rate.

Policy Proposal and Rationale

The policy proposal is to change the methodology for calculating payment to Medicare Advantage (MA) plans. The rationale for this proposal is as follows. Currently, payments to plans are determined by the relationship between the benchmark rate and the plan's bid. As we discussed earlier, the benchmark rate is derived directly from the MA rate book which since the passage of the Balanced Budget Act of 1997 (BBA), and subsequent legislation, has consistently moved away from the FFS per-capita-costs of the benefit in traditional Medicare such that the plans are now on average paid 12% over the expected cost to provide the Medicare benefit in

² MEDPAC, April 2004, *M+C payment rates compared with county Medicare per capita fee-for-service spending*, MEDPAC.

FFS. This proposal would re-calibrate the benchmark rate to the FFS per-capita-costs, eliminating excess payment due to differences between the existing benchmark rate and the FFS per-capita-costs.

Cost Savings

To perform the analysis, we compare MA payments using the statutory benchmark and a benchmark re-calibrated to county FFS per-capita-costs. We further adjusted the benchmark by excluding IME payments and all other post BBA provisions, and include adjustments for risk.³ We projected payments under the two payment scenarios for 2008 to 2017 period.

In Figure 1, we estimate the effects of the proposal on Medicare, national health spending, and households over the 10 year time horizon. Given the structure of the payment mechanism, we expect that any savings accrued to Medicare would also result in a decrease in national health spending and an increase in the cost to households. Since lowering the benchmark reduces the differential between the benchmark rate and the plan's bid, plans will have fewer funds to allocate to premium reduction or a richer benefit. To the degree beneficiaries re-purchase lost benefits, there would be a cost to households. To the extent that beneficiaries elect to forgo re-purchasing lost benefits, there would be a savings accrued to national health spending. Research has shown that in the event of a loss of coverage, utilization declines by 40% to 45%.⁴ Thus we have allocated 60% of the savings to Medicare to an increase to the cost to households and 40% to savings accrued to national health spending

In 2008, we estimate the savings to Medicare to be \$7.5 billion. We estimate the savings to Medicare over 5 years to be \$48.9 billion and \$124.0 billion over 10 years. We estimate the increased cost to households to be \$29.3 billion over 5 years and \$74.4 billion over 10 years. We estimate the savings to national health spending to be \$19.5 billion over 5 years and \$49.6 billion over 10 years.. This would suggest that although there is a savings to the Medicare program, that savings comes largely at the expense of the beneficiary.

Also, given the experience with M+C we expect that there would be some decline in plan participation. The payment system recommended in this policy proposal is very similar to the pre-BBA approach. Under the Average Adjusted Per Capita Costs (AAPCCs) based payment system, plans tended to withdraw from low payment counties and counties with highly variable per capita costs. Although difficult to predict, this move of MA beneficiaries back into FFS may create additional cost savings to Medicare and national health spending with additional costs to households.

³ We used the methodology developed by MEDPAC to remove IME payment by deflating the FFS rate by a factor of $1-(0.65 \times \text{GME})$. GME is the county graduate education factor.

⁴ Lurie N, Ward NB, Shapiro MF, Gallego C, Vaghaiwalla R, Brook RH. 1986. Termination of Medi-Cal benefits. A follow-up study one year later. *N Engl J Med* 1986 May 8;314(19):1266-8

Figure 1
Effects of Medicare MA Payment reductions
(in billions)

Year	Payment MMA Benchmark a/	Payment FFS Benchmark b/	Projected Savings to Medicare	Projected Savings to Medicare (Cum.)	Projected Costs to House-holds	Projected Costs to House-holds (Cum.)	Projected Savings to National Health Spending	Projected Savings to National Health Spending (Cum.)
2008	86.4	78.9	7.5	7.5	4.5	4.5	3.0	3.0
2009	100.8	92.1	8.8	16.3	5.3	9.8	3.5	6.5
2010	113.4	103.5	9.8	26.1	5.9	15.7	3.9	10.4
2011	125.1	114.3	10.9	37.0	6.5	22.2	4.3	14.8
2012	136.9	125.0	11.9	48.9	7.1	29.3	4.8	19.5
2013	148.5	135.6	12.9	61.8	7.7	37.1	5.2	24.7
2014	160.2	146.2	13.9	75.7	8.3	45.4	5.6	30.3
2015	172.2	157.2	15.0	90.6	9.0	54.4	6.0	36.3
2016	185.2	169.1	16.1	106.7	9.6	64.0	6.4	42.7
2017	198.9	181.6	17.3	124.0	10.4	74.4	6.9	49.6

a. MMA benchmark rates can be found at

<http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/RSD/list.asp#TopOfPage>

b. FFS benchmark calculated using projected 2007 county per capita costs. Costs and IME carveout factors can be found at

<http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/RSD/list.asp#TopOfPage> MA enrollment projections were taken from the Fact Sheet for CBO's March 2007 Baseline: Medicare.

Source: Lewin Group Estimates.

II. STRENGTHENING PRIMARY CARE -MEDICARE MEDICAL HOMES

Evidence exists showing that as the role of the primary care physician in the delivery of medical care increases, health outcomes improve and costs decline.⁵ The experience in the Medicaid program of strengthening the role of the primary care physician has shown significant cost savings.⁶ Primary care case management (PCCM) programs have been a central mechanism for supporting the primary care physician as the coordinator of medical care in Medicaid programs for many years.

The intent of this proposal is to implement PCCM in the Medicare program under the construct of the 'Medical Home' and increase Medicaid participation. Offering enhanced benefits at no additional premium, beneficiaries could enroll in a 'Medical Home' as an alternative to traditional fee-for-service or Medicare Advantage. The primary care physician would coordinate all care and authorize specialty referrals. We estimate savings to the Medicare program under two enrollment scenarios. First, we assume mandatory enrollment of the entire fee-for-service population. The second scenario projects enrollment assuming beneficiaries are enticed into the program by receiving 50 percent of the savings Medicare accrues from PCCM. Under the first scenario, we estimate savings to national health spending to be \$60.0 billion over 5 years and \$193.5 billion over 10 years. In the second scenario, we estimate savings to national health spending to be \$6.1 billion over 5 years and \$31.7 billion over 10 years.

We also estimate savings to the Medicaid program under two enrollment scenarios. First, we assume mandatory enrollment for 50 percent of the Medicaid fee-for-service population. The second scenario assume mandatory enrollment for 75 percent of the Medicaid fee-for-service population. Under the first scenario, we estimate savings to national health spending to be \$10.8 billion over 5 years and \$35.5 billion over 10 years. In the second scenario, we estimate savings to national health spending to be \$16.8 billion over 5 years and \$55.5 billion over 10 years.

Background

Numerous studies have demonstrated the important role that the primary care physician plays in improving health outcomes and controlling medical costs. In the typical PCCM Medicaid model, primary care physicians provide a 'Medical home' where beneficiaries receive the majority of their primary care and obtain referrals to specialty care. Although beneficiaries are required to receive services and referrals through their primary care physician, referrals may be made to any Medicaid-enrolled provider. In addition, primary care physicians are responsible for hospital admissions and obtaining prior authorization for elective inpatient and outpatient procedures. For providing a medical home to beneficiaries, participating primary care physicians are paid traditional fee-for-service rates plus an additional per patient, per month fee

⁵ Starfield, B. 2005. *Contribution of Primary Care to Health Systems and Health*. The Milbank Quarterly, Vol. 83, No. 3 2005 (p.-457-502).

⁶ E.T. Momany et al, "A Cost Analysis of the Iowa Medicaid Primary Care Case Management Program," *HSR: Health Services Research* 41:4, Part I (August 2006).

for enrolled beneficiaries. Medicaid programs have experienced both improved health outcomes and cost savings.⁷ Currently, 26 percent of Medicaid enrollees participate in PCCM.⁸

Medicare currently has some limited experience with PCCM. In 2001, CMS implemented a demonstration to enroll certain chronically ill beneficiaries in coordinated care programs that shared many of the features of PCCM.⁹ In 2002, Medicare began the Medicare Coordinated Care Demonstration (MCCD). This demonstration created medical homes for a sample of chronically ill Medicare beneficiaries. In the 2004 evaluation of the demonstration, Mathematica reported preliminary findings.¹⁰ Although they had no analysis on costs, they did report physician survey results that showed participating physicians had difficulty in meeting enrollment targets. They also showed that after one year under coordinated care, physicians and enrollees were happy with the program.

Momany *et al.* (2006) modeled the 1991 to 1998 experience of the Iowa Medicaid program with PCCM. In this program, Medicaid beneficiaries were required to either enroll in a managed care plan or a PCCM practice if one was available in their county. The authors compared costs net administration in each year of PCCM to an estimate of the cost of the program without PCCM. They showed annual savings to the program in each year starting at 1.5 percent and increasing to 9.8 percent in 1998.

Policy Proposal and Rationale

The policy proposal is to create a 'Medical Home' alternative in the Medicare program modeled on the PCCM programs. The beneficiaries would receive additional benefits such as 24-hour coverage, telephone/email consultation, care management and coordination, and patient education and counseling. By encouraging fee-for-service beneficiaries to enroll, it is the objective of the proposal to improve health outcomes and realize the savings that have been observed in state Medicaid PCCM programs. When we prepared our Medicare and Medicaid estimates we assumed two enrollment scenarios for each program. In the first Medicare scenario, we assume mandatory enrollment of the entire fee-for-service population. The second scenario projects enrollment assuming beneficiaries are enticed into the program by receiving 50 percent of the savings Medicare accrues from PCCM. The rate of enrollment was modeled after the experience in the Medicare managed care programs. We assume 4 percent of eligibles for initial enrollment and an increase to 18 percent of eligibles by 2017¹¹. In the first Medicaid scenario, we assume mandatory enrollment of 50 percent of Medicaid fee-for-service

⁷ Cotter JJ, McDonald KA, Parker DA, et al. Effect of different types of Medicaid managed care on childhood immunization rates. *Eval Health Prof.* Dec 2000;23(4):397-408. Rossiter LF, Whitehurst-Cook MY, Small RE, et al. The impact of disease management on outcomes and cost of care: a study of low-income asthma patients. *Inquiry.* Summer 2000;37(2):188-202. Silberman P, Poley S, Slifkin R. Innovative Primary Care Case Management Programs Operating in Rural Communities: Case Studies of Three States. http://www.schr.unc.edu/research_programs/rural_program/wp76.pdf.

⁸ Medicaid Enrollment in Comprehensive Managed Care Plans by Type. <http://statehealthfacts.org>.

⁹ Report found at: <http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=263>

¹⁰ Mathematica Policy Research, Inc. Report to Congress (2004). Coordinating Care for Medicare Beneficiaries of 15 Demonstration Programs, their patients, and providers.

¹¹ CMS managed care enrollment reports at: http://www.cms.hhs.gov/HealthPlanRepFileData/02_SC.asp#TopOfPage

population. In the second Medicaid scenario, we assume mandatory enrollment of 75 percent of Medicaid fee-for- service population.

Cost Savings

To estimate the savings to national health spending of implementing the ‘Medical Home’ alternative in Medicare and Medicaid, we adjust the CMS national health expenditure projections to reflect potential savings of PCCM. As discussed above, Momany *et al.* projected savings that increased from 1.5 percent in 1991 to 9.8 percent in 1998. The average annual savings over the period of their estimates was 3.8 percent. We projected the savings to national health expenditures by excluding the 9.8 percent savings in the final year and used a Whittaker graduation technique to trend Momany’s estimates.¹² We estimated a trend in annual savings that increased to 4.5 percent in 2012 and remained constant through 2017. Using this approach we projected an average annual savings of 3.6 percent. To incorporate a 4 dollar rather than a 2 dollar payment rate to physicians we reduced the savings by 8 percent each year.

Under the first Medicare scenario, we estimate the savings (*Figure 1*) to Medicare to be \$48.1 billion over 5 years and \$155.4 billion over 10 years. We estimate the savings to national health spending to be \$60.0 billion over five years and \$193.5 billion over ten years. Since PCCM generates savings by improving utilization management and health outcomes, beneficiaries and payers providing wrap around coverage to Medicare beneficiaries would also accrue savings.

We estimate savings to the payer groups (*Figure 2*) as follows. We estimate the savings to out-of-pocket expenses at \$5.3 billion over 5 years and \$17.1 billion over 10 years. We estimate the savings to household insurance premiums to be \$2.0 billion over 5 years and \$6.3 billion over 10 years. We estimated the savings to private employers to be \$2.8 billion over 5 years and \$9.1 billion over 10 years. We estimated the combined savings of the Medicare program and reduction in Federal retiree expenses to the Federal government to be \$48.6 billion over 5 years and \$156.9 billion the 10 year period. We estimate the savings to State and Local governments to be \$1.3 billion over 5 years and \$4.1 billion over 10 years.

Under scenario two, because enrollment is graduated and the savings are shared, the savings are smaller and accrue at a slower pace. We estimate the savings (*Figure 3*) to Medicare spending to be \$3.5 billion over 5 years and \$21.3 billion over 10 years. We estimate the savings to national health spending to be \$6.1 billion over 5 years and \$31.7 billion over ten years (*Figure 4*).

We estimate the distribution of the savings to the payer groups (*Figure 5*) as follows. The savings to out-of-pocket expenses were \$.38 billion over 5 years and \$2.34 billion over 10 years. We estimated the savings to household insurance premiums to be \$3.70 billion over 5 years and \$16.91 billion dollars over 10 years. We estimated savings to private employers to be \$.19 billion and \$1.16 billion over ten years. We estimated the Federal government’s savings to be \$1.76 billion over 5 years and \$10.82 billion dollars over 10 years. We estimated the savings to State and Local governments to be \$.09 billion over 5 years and \$.53 billion over 10 years.

¹² London, D., *Graduation: The revision of Estimates*, Chapter 4. Actex Publication, Winsted, Connecticut.

Under the first Medicaid scenario, we estimate the savings (*Figure 6*) to Medicaid and national health spending to be \$10.8 billion over five years and \$35.5 billion over ten years. We estimate the federal government to save \$6.1 billion over 5 years and \$20.3 billion over 10 years. We estimate State and Local governments to save \$4.6 billion over 5 years and \$15.3 billion over 10 years (*Figure 7*).

Under the second Medicaid scenario, we estimate the savings (*Figure 8*) to Medicaid and national health spending to be \$16.8 billion over five years and \$55.5 billion over ten years. We estimate the federal government to save \$9.2 billion over 5 years and \$30.4 billion over 10 years. We estimate State and Local governments to save \$7.6 billion over 5 years and \$25.1 billion over 10 years (*Figure 9*).

Figure 1
Projected Savings to Medicare and National Health Spending from Implementing PCCM in the Medicare Program (100 percent Enrollment Scenario)
(in billions)

Year	Projected Medicare expenditures ^{a/}	Projected Medicare Expenditures under PCCM	Projected Savings to Medicare under PCCM ^{b/}	Projected Savings to Medicare under PCCM (Cum.)	Projected Savings to National Health Spending	Projected Savings National Health Spending (Cum.)
2008	\$473.6	\$470.0	\$3.6	\$3.6	\$4.5	\$4.5
2009	509.0	503.7	5.3	8.9	6.6	11.1
2010	545.6	536.6	9.0	17.9	11.2	22.3
2011	602.0	588.7	13.3	31.2	16.5	38.8
2012	610.3	593.4	16.9	48.1	21.1	60.0
2013	680.2	662.0	18.2	66.3	22.7	82.7
2014	739.7	720.0	19.7	86.0	24.6	107.3
2015	805.8	784.5	21.3	107.3	26.5	133.8
2016	907.3	884.2	23.1	130.4	28.7	162.5
2017	1,024.8	999.8	25.0	155.4	31.0	193.5

a/Medicare expenditure projections were taken from the Fact Sheet for CBO's March 2007 Baseline: Medicare.

b/The savings were calculated using the trended Monomy *et al* percent savings for 1991-1997. The 1998 9.8% savings was excluded from the trend. The trend leveled off at a 4.5% savings. The average savings over the projection was 3.6%.

Figure 2
Projected Savings to Payer Groups from Implementing PCCM in the Medicare Program.
(100 percent Enrollment Scenario)
(in billions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer savings (Cum.)	Federal Savings	Federal Savings (cum.)	State and Local	State and Local (Cum.)
2008	\$0.4	\$0.4	\$0.1	\$0.1	\$0.2	\$0.2	\$3.6	\$3.6	\$0.1	\$0.1
2009	0.6	1.0	0.2	0.4	0.3	0.5	5.4	9.0	0.1	0.2
2010	1.0	2.0	0.4	0.7	0.5	1.0	9.1	18.1	0.2	0.5
2011	1.5	3.4	0.5	1.3	0.8	1.8	13.4	31.5	0.4	0.8
2012	1.9	5.3	0.7	2.0	1.0	2.8	17.1	48.6	0.5	1.3
2013	2.0	7.3	0.8	2.7	1.1	3.9	18.4	67.0	0.5	1.8
2014	2.2	9.5	0.8	3.5	1.2	5.1	19.9	86.9	0.5	2.3
2015	2.3	11.8	0.9	4.4	1.2	6.3	21.5	108.4	0.6	2.9
2016	2.5	14.3	0.9	5.3	1.3	7.7	23.3	131.7	0.6	3.5
2017	2.7	17.1	1.0	6.3	1.4	9.1	25.2	156.9	0.6	4.1

Source: Lewin Group Estimates.

Figure 3
Projected savings in Medicare Expenditures from implementing PCCM in the Medicare program.
(projected enrollment scenario)
(dollars in billions)

Year	Projected Medicare Expenditures ^{a/}	Projected Enrollment of Medicare Eligibles in PCCM ^{b/} (Percent)	Projected Medicare expenditures under PCCM	Projected Savings in Medicare expenditures under PCCM ^{c/}	Projected Savings in Medicare expenditures under PCCM (Cum.)
2008	\$473.6	4.0%	\$473.4	\$0.2	\$0.2
2009	509.0	5.0	508.7	0.3	0.4
2010	545.6	5.0	545.1	0.5	0.9
2011	602.0	7.0	601.1	0.9	1.9
2012	610.3	9.0	608.7	1.6	3.5
2013	680.2	12.0	677.9	2.3	5.7
2014	739.7	14.0	736.7	3.0	8.7
2015	805.8	16.0	802.2	3.6	12.3
2016	907.3	17.0	903.2	4.1	16.4
2017	1024.8	18.0	1019.9	4.9	21.3

a/Medicare expenditure projections were taken from the Fact Sheet for CBO's March 2007 Baseline: Medicare.

b/We used the initial enrollment and growth for 2008-2016 experienced by Medicare Managed care in the 1992-2000 period.

c/The savings were calculated using the trended Monomy et al percent savings for 1991-1997. The 1998 9.8% savings was excluded from the trend. The average savings over the projection was 3.6%.

Figure 4
Savings to the Medicare program, Beneficiaries and National Health Spending from implementing PCCM in the Medicare program.
(projected enrollment scenario)
(dollars in billions)

Year	Projected Savings to Medicare under PCCM	Projected Savings to Medicare under PCCM (Cum)	Projected Savings to Beneficiary under PCCM	Projected Savings to Beneficiary under PCCM (Cum)	Projected Savings to National Health Spending under PCCM	Projected Savings to National Health Spending under PCCM (Cum)
2008	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	\$0.3
2009	0.1	0.2	0.1	0.2	0.5	0.8
2010	0.2	0.5	0.2	0.5	1.0	1.8
2011	0.5	0.9	0.5	0.9	1.7	3.5
2012	0.8	1.7	0.8	1.7	2.6	6.1
2013	1.1	2.9	1.1	2.9	3.5	9.6
2014	1.5	4.3	1.5	4.3	4.4	14.0
2015	1.8	6.1	1.8	6.1	5.1	19.1
2016	2.1	8.2	2.1	8.2	5.8	24.9
2017	2.4	10.6	2.4	10.6	6.8	31.7

Source: Lewin Group Estimates.

Figure 5
Distribution of Projected Savings to Payer Groups from Implementing PCCM in the Medicare Program.
(Projected Enrollment Scenario)
(in billions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer Savings (Cum.)	Federal Savings	Federal Savings (cum.)	State and Local	State and Local (Cum.)
2008	\$0.02	\$0.02	\$0.22	\$0.22	\$0.01	\$0.01	\$0.08	\$0.08	\$0.00	\$0.00
2009	0.03	0.04	0.34	0.56	0.01	0.02	0.13	0.21	0.01	0.01
2010	0.05	0.10	0.61	1.17	0.03	0.05	0.25	0.46	0.01	0.02
2011	0.10	0.20	1.02	2.19	0.05	0.10	0.48	0.94	0.02	0.05
2012	0.18	0.38	1.51	3.70	0.09	0.19	0.82	1.76	0.04	0.09
2013	0.25	0.63	1.89	5.58	0.13	0.32	1.16	2.92	0.06	0.15
2014	0.33	0.96	2.28	7.87	0.16	0.48	1.51	4.42	0.07	0.22
2015	0.39	1.35	2.64	10.51	0.19	0.68	1.81	6.24	0.09	0.31
2016	0.45	1.80	2.97	13.48	0.22	0.90	2.09	8.33	0.10	0.41
2017	0.54	2.34	3.43	16.91	0.26	1.16	2.49	10.82	0.12	0.53

Source: Lewin Group Estimates.

Figure 6
Projected Savings to Medicaid and National Health Spending Increased Implementation of PCCM in
the Medicaid Program
(50 percent Enrollment Scenario)
(in billions)

Year	Projected Medicaid expenditures ^{a/}	Projected Medicaid expenditures under PCCM ^{b/}	Projected Savings to Medicaid under PCCM ^{c/}	Projected Savings to Medicaid under PCCM (Cum.)	Projected Savings to National Health Spending	Projected Savings National Health Spending (Cum.)
2008	\$362.0	\$361.2	\$0.8	\$0.8	\$0.8	\$0.8
2009	390.2	389.1	1.1	1.9	1.1	1.9
2010	421.0	419.0	2.0	3.9	2.0	3.9
2011	455.2	452.2	3.0	6.9	3.0	6.9
2012	492.4	488.5	3.9	10.8	3.9	10.8
2013	533.0	528.8	4.2	15.0	4.2	15.0
2014	577.1	572.6	4.5	19.5	4.5	19.5
2015	625.2	620.3	4.9	24.4	4.9	24.4
2016	677.0	671.7	5.3	29.8	5.3	29.8
2017	733.2	727.4	5.8	35.5	5.8	35.5

a/Medicaid expenditure projections were taken from the CMS National Health Expenditures Report found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>.

b/The share taken as FFS Medicaid spending was taken from the Fact Sheet for CBO's March 2007 Baseline:Medicaid.

c/The savings were calculated using the trended Monomy *et al* percent savings for 1991-1997. The 1998 9.8% savings was excluded from the trend. The trend leveled off at a 4.5% savings. The average savings over the projection was 3.6%. Savings were applied to FFS Medicaid spending.

Figure 7
Projected Savings to the Federal, State and Local Governments from Increased Implementation of
PCCM in the Medicaid Program.
(50 percent Enrollment Scenario)
(in billions)

Year	Federal Savings ^{a/}	Federal Savings (cum.)	State and Local Savings ^{a/}	State and Local Savings (Cum.)
2008	\$0.4	\$0.4	\$0.3	\$0.3
2009	0.7	1.1	0.5	0.8
2010	1.1	2.2	0.9	1.7
2011	1.7	3.9	1.3	3.0
2012	2.2	6.1	1.7	4.6
2013	2.4	8.5	1.8	6.4
2014	2.6	11.1	2.0	8.4
2015	2.8	13.9	2.1	10.5
2016	3.0	17.0	2.3	12.8
2017	3.3	20.3	2.5	15.3

a/We derived the savings split between Federal (.57) and State (.43) from the CMS NHE05 historical estimates. Report found at:
http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage.

Source: Lewin Group Estimates.

Figure 8
Projected Savings to Medicaid and National Health Spending Increased Implementation of PCCM in
the Medicaid Program
(75 percent Enrollment Scenario)
(in billions)

Year	Projected Medicaid expenditures ^{a/}	Projected Medicaid expenditures under PCCM ^{b/}	Projected Savings to Medicaid under PCCM ^{c/}	Projected Savings to Medicaid under PCCM (Cum.)	Projected Savings to National Health Spending	Projected Savings National Health Spending (Cum.)
2008	\$362.0	\$360.9	\$1.1	\$1.1	\$1.2	\$1.2
2009	390.2	388.5	1.7	2.9	1.8	3.0
2010	421.0	418.0	3.0	5.8	3.1	6.1
2011	455.2	450.7	4.5	10.3	4.7	10.7
2012	492.4	486.6	5.8	16.1	6.1	16.8
2013	533.0	526.7	6.3	22.4	6.6	23.3
2014	577.1	570.3	6.8	29.3	7.1	30.4
2015	625.2	617.8	7.4	36.6	7.7	38.1
2016	677.0	669.0	8.0	44.7	8.3	46.4
2017	733.2	724.5	8.7	53.3	9.0	55.5

a/Medicaid expenditure projections were taken from the CMS National Health Expenditures Report found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>.

b/The share taken as FFS Medicaid spending was taken from the Fact Sheet for CBO's March 2007 Baseline:Medicaid.

c/The savings were calculated using the trended Monomy *et al* percent savings for 1991-1997. The 1998 9.8% savings was excluded from the trend. The trend leveled off at a 4.5% savings. The average savings over the projection was 3.6%. Savings were applied to FFS Medicaid spending.

Figure 9
Projected Savings to the Federal, State and Local Governments from Increased Implementation of
PCCM in the Medicaid Program.
(50 percent Enrollment Scenario)
(in billions)

Year	Federal Savings ^{a/}	Federal Savings (cum.)	State and Local Savings ^{a/}	State and Local Savings (Cum.)
2008	\$0.6	\$0.6	\$0.5	\$0.5
2009	1.0	1.6	0.8	1.3
2010	1.7	3.3	1.4	2.7
2011	2.6	5.9	2.1	4.8
2012	3.3	9.2	2.7	7.6
2013	3.6	12.8	3.0	10.5
2014	3.9	16.7	3.2	13.7
2015	4.2	20.9	3.5	17.2
2016	4.6	25.5	3.8	21.0
2017	4.9	30.4	4.1	25.1

a/We derived the savings split between Federal (.57) and State (.43) from the CMS NHE05 historical estimates. Report found at:
http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage.
 Source: Lewin Group Estimates.

III. PUBLIC HEALTH: REDUCING TOBACCO USE PREVALENCE

The intent of this proposal is to use Federal tax policy to reduce the prevalence of Tobacco use in the United States. Although the share of total sales has declined, cigarette sales represent 92 percent of all tobacco sales. Estimates of the impact of smoking on national health expenditures have been as high as 14 percent.¹³ A reduction in the prevalence of smoking alone would result in significant savings to national health expenditures.

This proposal would reduce Tobacco use prevalence by raising the federal excise tax on cigarettes from \$.39 cents to \$2.39 per pack of cigarettes. A proportionate tax increase would also be levied on other tobacco products. These funds would be used to fund Federal and State sponsored cessation programs to reduce prevalence. We estimate the savings to national health expenditures resulting from the tax increases and programs to be \$64.3 billion over 5 years and \$190.5 billion over 10 years. We estimate the new revenue to the federal government to be \$150.4 billion over 5 years and \$294.4 billion over 10 years. As a result of the declines in consumption, states lose \$16.5 billion over 5 years and \$32.2 billion over 10 years.

Background

Cigarette consumption in the United States peaked in 1980 at 631.5 billion and has since declined to 378.6 billion cigarettes per year.¹⁴ Currently the federal tax on cigarettes is \$.39 cents per pack. The median state tax on cigarettes across the United States is \$.80 cents per pack.¹⁵ Chaloupka *et al.* (2000) has estimated that for every 10 percent increase in the cost of a pack of cigarettes, consumption declines by 4 percent.¹⁶ Given the current average retail price of \$4.27,¹⁷ the proposed tax increase would result in an 18.8 percent decline in consumption above the current rate of decline of the trend in smoking prevalence. A proportional increase in the federal taxes on cigars and other tobacco results in a 2.5 percent decline in cigar consumption and a .01 percent decline in other tobacco products. Other tobacco products including snuff, pipe tobacco, chewing tobacco and “roll-your-own” tobacco products comprise 4.1 percent of total tobacco sales.¹⁸

Farrelly *et al.* (2003) developed an estimate of the elasticity of cigarette consumption and expenditures on smoking cessation programs. They reported that for every \$6 dollars per capita spent on smoking cessation programs, tobacco consumption declines .00008 percent.¹⁹ If the projected revenue generated from the tax increases is used to fund cessation programs, we estimate an average decrease in consumption of .16 percent per year.

¹³ Report found at: http://www.cdc.gov/nchs/ppt/hpdata2010/focusareas/fa27_tobaccopres.ppt#297,1,Slide 1

¹⁴ 1993 -1996 US Department of Agriculture 1997-2005 Alcohol & Tobacco Tax and Trade Bureau, Bureau of the Census

¹⁵ Rate summary found at: <http://www.taxadmin.org/FTA/rate/cigarette.html>

¹⁶ Chaloupka F, The-Wei Hu, Warner K, Jacobs R, Yurekli (2000). *The taxation of tobacco products*. Report found at <http://www1.worldbank.org/tobacco/tcdc/237IO272.PDF>

¹⁷ Report found at: <http://tobaccofreekids.org/research/factsheets/pdf/0234.pdf>

¹⁸ Sales data at: <http://www.ers.usda.gov/Briefing/Tobacco/Data/table21.pdf>

¹⁹ Farrelly MC, Pechacek T, Chaloupka F. “*The impact of tobacco control program expenditures on aggregate cigarette sales: 1981-2000*”, *Journal of Health Economics* 22 (2003)

We estimate the combined affects of the tax increases and cessation programs to produce savings to national health expenditures. After 5 years however, the rate of savings decreases to become a net cost to national health expenditures after 15 years. Barendregt et al. (1997) estimated that health care costs decline in the first 15 years following cessation. As the non-smokers live longer however, the costs of age related illness exceeds the savings attributed to smoking cessation after 15 years. They extrapolated their findings on a 100% smoking cessation scenario. Based on that extrapolation, in the first year of cessation, they showed a 1 percent reduction in national health spending. They estimated savings to increase to 2.5 percent by the 5th year and by the 10th year, savings had slowed back to less than 2 percent.²⁰

Cost Estimates

The methodology for calculating the estimates of net costs were as follows. We compared national health expenditure projections both before and after the imposition of the tax and implementation of cessation programs. We calculated an adjusted projection of national health spending which accounts for the reduction of health care costs attributable to smoking. We used the expected savings rate schedule described above (Barendregt *et al.*) adjusted to reflect the combined reductions in consumption due to the taxes and cessation programs rather than 100 percent cessation (*Figure 1*).

We compared a projection of national health spending with the adjusted projection to determine the savings to national health spending.²¹ Federal and state revenues were calculated using a projection of tobacco sales adjusted for reduced consumption due to the tax.²² We projected 2008 tobacco sales by reducing consumption in 2007 by 18.8 percent plus a 1 percent decline in prevalence. Tobacco sales were projected from 2008 incorporating the decline in sales attributable to estimated consumption declines induced by cessation programs. This was in addition to the historic decline of a 1 percent per year decline in prevalence.²³

We estimate savings to national health expenditures (*Figure 1*), to be \$64.3 billion over 5 years and \$190.5 billion over 10 years. The savings distributed to the payer groups (*Figure 2*) were as follows. We estimated the savings to out-of-pocket to be \$7.9 billion over 5 years and \$23.5 billion over 10 years. We estimate the savings to household insurance premiums over 5 years to be \$8.6 billion and \$25.4 billion over 10 years. We estimated savings to private employers to be \$13.0 billion over 5 years and \$38.5 billion over 10 years. We estimated the savings accrued to the Federal government to be \$23.0 billion over 5 years and \$68.2 billion over 10 years. We estimated savings to State and Local governments to be \$11.8 billion over 5 years and \$34.9 billion over 10 years. The revenues to the Federal government are estimated to be 150.4 billion over 5 years and \$294.4 billion over 10 years (*Figure 3*). Declining consumption caused estimated revenue from state taxes on tobacco to decline \$16.5 billion over 5 years and \$32.2 billion over 10 years.

²⁰ Barendregt JJ, Bonneux L Van Der Maas PJ. "The Health Care Costs of Smoking.", *The New England Journal of Medicine*, October 1997.

²¹ Report found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

²² Report found at http://www.cdc.gov/tobacco/sgr/sgr_2000/TobaccoTaxation.pdf

²³ Smoking Prevalence rates found at: http://www.cdc.gov/tobacco/research_data/adults_prev/prevali.htm

Figure 1
Combined Effects of Federal Tax Increases on Tobacco products and Smoking Cessation programs
on National Health Expenditures
(dollars in billions)

Year	National Health Expenditure Projection before Tobacco Tax ^{a/}	Unadjusted Reduction in National Health Expenditure due to Tobacco Tax (Percent) ^{b/}	Adjusted Reduction in National Health Expenditure due to Tobacco Tax (Percent)	Adjusted Reduction in National Health Expenditure due to Cessation Programs (Percent)	National Health Expenditure Projection with Tobacco Tax and Cessation Program	National Health Expenditure Projected Savings ^{c/}	National Health Expenditure Projected Savings (Cum.)
2008	\$2,420.00	1.0%	0.19%	0.00%	\$2,415.5	\$4.5	\$4.5
2009	2,596.00	2.0	0.38	0.02	2,585.8	10.2	14.7
2010	2,776.40	2.3	0.43	0.05	2,763.0	13.4	28.2
2011	2,966.40	2.5	0.47	0.09	2,949.8	16.6	44.7
2012	3,173.40	2.6	0.49	0.13	3,153.8	19.6	64.3
2013	3,395.80	2.6	0.48	0.17	3,373.8	22.0	86.3
2014	3,628.60	2.4	0.45	0.21	3,604.6	24.0	110.3
2015	3,874.60	2.2	0.41	0.25	3,849.1	25.5	135.8
2016	4,136.90	1.9	0.36	0.28	4,110.6	26.3	162.1
2017	4,418.21	1.8	0.34	0.30	4,389.8	28.4	190.5

a/ CMS National Health Expenditure projections found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>. We calculated the projection for 2017 by holding the CMS National Health Expenditures growth rate for 2016 constant.

b/Percent reductions in health spending under 100% cessation scenario.

c/Savings in year_t = (adjusted percent reduction_t due to tax + adjusted percent reduction_t due to cessation) * national health expenditure estimate_t.

Figure 2
Savings to Payers Groups Resulting from Tobacco Tax Increases and Smoking Cessation programs
(in billions)

Year	Out-of-pocket savings	Out-of-pocket savings (Cum.)	Savings to Household insurance premiums	Savings to Household insurance premiums (Cum.)	Savings to Private Employers	Savings to Private Employers (Cum.)	Savings to Federal govt.	Savings to Federal govt. (Cum.)	Savings to State and Local govt	Savings to State and Local govt. (Cum.)
2008	\$0.6	\$0.6	\$0.6	\$0.6	\$0.9	\$0.9	\$1.6	\$1.6	\$0.8	\$0.8
2009	1.3	1.8	1.4	2.0	2.1	3.0	3.7	5.3	1.9	2.7
2010	1.7	3.5	1.8	3.8	2.7	5.7	4.8	10.1	2.5	5.2
2011	2.0	5.5	2.2	6.0	3.3	9.0	5.9	16.0	3.0	8.2
2012	2.4	7.9	2.6	8.6	4.0	13.0	7.0	23.0	3.6	11.8
2013	2.7	10.6	2.9	11.5	4.5	17.5	7.9	30.9	4.0	15.8
2014	3.0	13.6	3.2	14.7	4.8	22.3	8.6	39.5	4.4	20.2
2015	3.1	16.7	3.4	18.1	5.2	27.5	9.1	48.6	4.7	24.9
2016	3.2	20.0	3.5	21.6	5.3	32.8	9.4	58.0	4.8	29.7
2017	3.5	23.5	3.8	25.4	5.7	38.5	10.2	68.2	5.2	34.9

Source: Lewin Group Estimates.

Figure 3
Combined Effects of Federal Tax Increases on Tobacco Products and Smoking Cessation Programs
on Federal and State Revenue
(in billions)

Year	Projected Federal Revenue From Tobacco Tax	Projected Federal Revenue From Tobacco Tax (Cum.)	Projected Loss in State Revenue ^a	Projected Loss in State Revenue (Cum.)
2008	\$31.0	\$31.0	\$3.4	\$3.4
2009	30.7	61.7	3.3	6.7
2010	29.8	91.5	3.3	10.0
2011	29.6	121.0	3.3	13.3
2012	29.4	150.4	3.2	16.5
2013	29.1	179.5	3.2	19.7
2014	29.0	208.5	3.2	22.9
2015	28.8	237.3	3.1	26.0
2016	28.6	265.9	3.1	29.1
2017	28.5	294.4	3.1	32.2

a/We assumed an average state tax of 1\$ per pack of cigarettes.
Source: Lewin Group Estimates.

IV. PUBLIC HEALTH: REDUCING OBESITY PREVALENCE (THREE SCENARIOS: NO GROWTH, -.40 GROWTH RATE, AND .20 GROWTH RATE)

The intent of this proposal is to use Federal tax and regulatory policy to reduce the prevalence of obesity in the United States. The share of national health expenditures attributed to obesity has been estimated to be 6.25 percent.²⁴ Reduction in the prevalence of obesity would result in significant savings to national health expenditures. The proposal includes a \$.01 tax on sweetened soft drinks, restrictions on the use of trans-fats in eating establishments, enforcement of existing US Department of Agriculture (USDA) dietary guidelines and a sweetened soft drink ban in schools. In addition, the revenue from this tax would be used to fund state run obesity abatement programs. We estimate Federal revenues from the tax to be \$5.7 billion over 5 years and \$11.4 billion over 10 years. We estimate savings to national health spending under three different impact scenarios.

The first scenario assumes the combined effect of the programs would reverse the trend in obesity prevalence. We estimate the savings to national health spending under this assumption to be \$244.6 billion over 5 years and \$1,130.4 billion over 10 years. The second scenario assumes the programs would halt the growth in obesity prevalence. The savings to national health spending under this scenario are \$83.3 over 5 years and \$471.7 billion over 10 years. The final scenario assumes the effect of the programs is to reduce the growth in obesity prevalence to half the historic rate. We estimated savings from this scenario to be \$61.9 billion over 5 years and \$282.6 billion over 10 years.

Background

Since the 1980's, obesity among adults has risen significantly in the United States. The latest data from the National Center for Health Statistics show that 30 percent of U.S. adults 20 years of age and older are obese. Since 1980, the percentage of young people that are overweight has more than tripled. Among children and adolescents aged 6-19 years, 16 percent are considered overweight. The causes for these increases are linked to a combination of factors including increased caloric intake and a decline in physical activity, particularly for people under age 19.²⁵

Policy Proposal and Rationale

This proposal would reduce rates of obesity through state run obesity abatement programs funded by a .01 cent tax per 12 oz. of sugar-sweetened soft drink. Eligibility for the funding would be contingent on the states enacting the following policies. These would include a ban on the use artificial trans-fats in the preparation of any menu item and caloric disclosure requirements in restaurants. In schools, sugar sweetened soft drinks would be banned, enforcement of current US Department of Agriculture (USDA) regulations and guidelines would be required, and meals would have to be made available that are consistent with the USDA Dietary Guidelines for Americans.

²⁴ Thompson et al, "The Medical-Care Cost Burden of Obesity", The International Association for the Study of Obesity. Obesity Reviews 2, 189-197, 2001

²⁵ Report found at: <http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/obesity.htm>

Cost Savings

The methodology for calculating the estimates of revenues and savings was as follows. The Center for Disease Control (CDC) reported obesity prevalence increased from 18.3 percent of the population in 1998 to 23.9 percent in 2005.²⁶ This increase in prevalence corresponded to a .4 percent annual growth rate in the share of the national health expenditures attributable to the population who are obese.

Thompson et al (2001) estimated that medical costs attributable to the overweight and obese ranged 5.5 and 7 percent.²⁷ We assume that the proportion of health expenditures attributed to obesity increased in proportion to the growth in the population that is obese. Between 1998 and 2005 the obesity prevalence increased from 18.3 percent 23.9 percent. Using this trend, we estimated an average annual increase in the prevalence rate of .4 percent. We assume that the share of costs attributable to obesity increase at the same rate as the prevalence rate.

We have no evidence to support the calculation of the direct effects of the abatement programs. However, for illustrative purposes we estimate the combined effects of the programs under the three impact scenarios we discuss above. In the first scenario, we reverse the .4 percent growth in the share of the national health expenditure attributable to obesity. In the second scenario we hold the share of national health expenditures attributable to obesity to the 2008 projected level of 9.1 percent.²⁸ Finally, in the third scenario we slow the growth of the share of national health expenditures attributable to obesity to one half the historic rate (.20 percent). In all three scenarios we assume there would be a behavioral offset of 30 percent to offset the decline in utilization due to the reduced morbidity associated with obesity.²⁹

Federal revenues were calculated using a projection of total sweetened soft-drink sales. Although sales of soft-drinks are expected to continue to increase, sales of sweetened soft drinks are declining at a rate of .58 percent per year.³⁰ As a result, annual revenues from the tax will decline over time. Projected revenues to the Federal government are \$5.7 billion over 5 years and \$11.4 billion over 10 years.

The savings (*Figure 1*) estimated from a reversal of the growth trend in the share of costs attributable to obesity are as follows. We estimate the savings to national health expenditures to be \$244.6 billion over 5 years and \$1,130.4 billion over ten years. The savings (*Figure 2*) to the other payer groups are as follows. We estimate savings to out-of-pocket to be \$30.1 billion over 5 years and \$139.3 billion over 10 years. We estimate savings to household insurance premiums to be \$32.6 billion over 5 years and \$150.6 billion over 10 years. We estimate private employers to save \$49.5 billion over 5 years and \$228.6 billion over 10 years. Our estimates of the savings

²⁶ Prevalence trends found at: <http://apps.nccd.cdc.gov/brfss/Trends/trendchart.asp?qkey=10010&state=US> 2005 obesity prevalence found at: <http://www.cdc.gov/mmwrR/preview/mmwrhtml/mm5536a1.htm>

²⁷ Thompson et al, "The Medical-Care Cost Burden of Obesity", The International Association for the Study of Obesity. Obesity Reviews 2, 189-197, 2001

²⁸ The 2005 Thompson review midpoint rate of 6.25 percent grown by the increase in the rate of obesity prevalence.

²⁹ We assume that providers would change behavior to increase volume similarly to behavior changes resulting from rate reductions. Report found at: <http://www.cms.hhs.gov/ReportsTrustFunds/downloads/TechnicalPanelReport2000.pdf>

³⁰ Beverage Digest. Press Release March 6, 2006: http://www.beverage-digest.com/pdf/top-10_2006.pdf Center for Science in the Public Interest. How Soft Drinks are Harming Americans' Health. Jacobson M., Washington, DC.

to the Federal government are \$87.5 billion over 5 years and \$404.6 billion over 10 year. We estimate state and local governments save \$44.8 billion over 5 years and \$207.3 billion over ten years.

The savings (*Figure 3*) estimated from holding the share of national health expenditures attributable to obesity to the 2008 level of 9.1 percent are as follows. We estimate the savings to national health expenditures to be \$83.3 billion over 5 years and \$471.7 billion over 10 years. The savings (*Figure 4*) to the other payer groups are as follows. We estimate out-of-pocket savings to be \$10.3 billion over 5 years and \$58.1 billion over 10 years. We estimate savings to household insurance premiums to be \$11.1 billion over 5 years and \$62.9 billion over 10 years. We estimate private employers to accrue savings of \$16.8 billion over 5 years and \$95.4 billion over 10 years. We estimate the Federal government save \$29.8 billion over 5 years and \$168.9 billion over 10 year. We estimate State and local governments to save \$15.3 billion over 5 years and \$86.5 billion over ten years.

The savings (*Figure 5*) estimated from slowing the growth of the share of national health expenditures attributable to obesity to .20 percent are as follows. We estimate the savings to national health expenditures to be \$61.1 billion over 5 years and \$282.6 billion over ten years. The savings (*Figure 6*) to the other payer groups are as follows. We estimate savings to out-of-pocket to be \$7.5 billion over 5 years and \$34.8 billion over 10 years. Our estimates of savings to household insurance premiums are \$8.1 billion over 5 years and \$37.7 billion over 10 years. We estimate private employers to accrue savings of \$12.4 billion over 5 years and \$57.2 billion over 10 years. We estimate The Federal government is estimated to save \$21.9 billion over 5 years and \$101.2 billion over 10 year. Finally, we estimate State and local governments to save \$11.2 billion over 5 years and \$51.8 billion over ten years.

Figure 1
Effects on National Health Expenditures of Obesity Abatement Proposals
Scenario 1: Obesity growth rate reverses
(in billions)

Year	Medical Expenses Attributed to Overweight and Obesity under Current Law ^{a/}	Medical Expenses Attributed to Overweight and Obesity after Obesity Abatement	National Health Expenditure Projected Savings	National Health Expenditure Projected Savings (Cum.)	Projected Federal Revenue From Soft drink tax	Projected Federal Revenue From Soft drink tax (Cum.)
2008	\$219.0	\$199.7	\$13.6	\$13.6	\$1.15	\$1.15
2009	245.3	203.8	29.1	42.6	1.15	2.29
2010	273.5	206.8	46.6	89.3	1.14	3.44
2011	304.1	209.1	66.4	155.7	1.14	4.58
2012	338.0	211.0	88.9	244.6	1.14	5.72
2013	375.2	212.2	114.1	358.7	1.14	6.86
2014	415.5	212.3	142.2	500.9	1.14	8.00
2015	459.1	211.2	173.6	674.5	1.14	9.14
2016	506.8	208.9	208.5	883.0	1.14	10.28
2017	\$558.9	\$205.4	\$247.4	\$1,130.4	\$1.14	\$11.42

a/Costs were calculated by multiplying CMS National Health Expenditure projections * Lewin projection of the share of total national health expenditures attributable to overweight and obesity morbidity. CMS National Health Expenditures found at : <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf> We calculated the projection for 2017 by holding the CMS National Health Expenditures growth rate for 2016 constant.

Figure 2
Savings to Payer Groups from Obesity Abatement
Scenario 1: Obesity growth rate reverses
(in billions)

Year	Out-of-pocket savings	Out-of-pocket savings (Cum.)	Savings to Household Insurance premiums	Savings to Household Insurance Premiums (Cum)	Savings to Private Employers	Savings to Private Employers (Cum.)	Savings to Federal govt.	Savings to Federal govt. (Cum.)	Savings to State and Local govt	Savings to State and Local govt. (Cum.)
2008	\$1.7	\$1.7	\$1.8	\$1.8	\$2.7	\$2.7	\$4.9	\$4.9	\$2.5	\$2.5
2009	3.6	5.3	3.9	5.7	5.9	8.6	10.4	15.3	5.3	7.8
2010	5.7	11.0	6.2	11.9	9.4	18.1	16.7	32.0	8.6	16.4
2011	8.2	19.2	8.9	20.7	13.4	31.5	23.8	55.7	12.2	28.5
2012	10.9	30.1	11.8	32.6	18.0	49.5	31.8	87.5	16.3	44.8
2013	14.1	44.2	15.2	47.8	23.1	72.5	40.8	128.4	20.9	65.8
2014	17.5	61.7	19.0	66.7	28.8	101.3	50.9	179.3	26.1	91.8
2015	21.4	83.1	23.1	89.9	35.1	136.4	62.1	241.4	31.8	123.7
2016	25.7	108.8	27.8	117.7	42.2	178.6	74.6	316.1	38.2	161.9
2017	\$30.5	\$139.3	\$33.0	\$150.6	\$50.0	\$228.6	\$88.6	\$404.6	\$45.4	\$207.3

Source: Lewin Group Estimates.

Figure 3
Effects on National Health Expenditures of Obesity Abatement Proposals
Scenario 2: Obesity cost held at 2008 level of 9.1 percent of National Health Expenditures
(in billions)

Year	Medical Expenses Attributed to Overweight and Obesity under Current Law ^{a/}	Medical Expenses Attributed to Overweight and Obesity after Obesity Abatement	National Health Expenditure Projected Savings	National Health Expenditure Projected Savings (Cum.)	Projected Federal Revenue From Soft drink tax	Projected Federal Revenue From Soft drink tax (Cum.)
2008	\$219.0	\$219.0	\$0.0	\$0.0	\$1.15	\$1.15
2009	245.3	234.9	7.3	7.3	1.15	2.29
2010	273.5	251.3	15.5	22.8	1.14	3.44
2011	304.1	268.5	24.9	47.7	1.14	4.58
2012	338.0	287.2	35.5	83.3	1.14	5.72
2013	375.2	307.3	47.5	130.8	1.14	6.86
2014	415.5	328.4	61.0	191.8	1.14	8.00
2015	459.1	350.7	75.9	267.7	1.14	9.14
2016	506.8	374.4	92.7	360.4	1.14	10.28
2017	\$558.9	\$399.8	\$111.3	\$471.7	\$1.14	\$11.42

a/Costs were calculated by multiplying CMS National Health Expenditure projections * Lewin projection of the share of total national health expenditures attributable to overweight and obesity morbidity. CMS National Health Expenditures found at : <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf> We calculated the projection for 2017 by holding the CMS National Health Expenditures growth rate for 2016 constant.

Figure 4
Savings to Payer Groups from Obesity Abatement
Scenario 2: Obesity cost held at 2008 level of 9.1 percent of National Health Expenditures
(in billions)

Year	Out-of-pocket savings	Out-of-pocket savings (Cum.)	Savings to Household Insurance premiums	Savings to Household Insurance Premiums (Cum)	Savings to Private Employers	Savings to Private Employers (Cum.)	Savings to Federal govt.	Savings to Federal govt. (Cum.)	Savings to State and Local govt	Savings to State and Local govt. (Cum.)
2008	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2009	0.9	0.9	1.0	1.0	1.5	1.5	2.6	2.6	1.3	1.3
2010	1.9	2.8	2.1	3.0	3.1	4.6	5.6	8.2	2.9	4.2
2011	3.1	5.9	3.3	6.4	5.0	9.7	8.9	17.1	4.6	8.8
2012	4.4	10.3	4.7	11.1	7.2	16.8	12.7	29.8	6.5	15.3
2013	5.9	16.1	6.3	17.4	9.6	26.5	17.0	46.8	8.7	24.0
2014	7.5	23.6	8.1	25.6	12.3	38.8	21.8	68.6	11.2	35.2
2015	9.4	33.0	10.1	35.7	15.4	54.1	27.2	95.8	13.9	49.1
2016	11.4	44.4	12.3	48.0	18.7	72.9	33.2	129.0	17.0	66.1
2017	\$13.7	\$58.1	\$14.8	\$62.9	\$22.5	\$95.4	\$39.9	\$168.9	\$20.4	\$86.5

Source: Lewin Group Estimates.

Figure 5
Effects on National Health Expenditures of Obesity Abatement Proposals
Scenario 3: Obesity cost grown at .20 percent per year (half the historic rate)
(in billions)

Year	Medical Expenses Attributed to Overweight and Obesity under Current Law ^{a/}	Medical Expenses Attributed to Overweight and Obesity after Obesity Abatement	National Health Expenditure Projected Savings	National Health Expenditure Projected Savings (Cum.)	Projected Federal Revenue From Soft drink tax	Projected Federal Revenue From Soft drink tax (Cum.)
2008	\$219.0	\$214.2	\$3.4	\$3.4	\$1.15	\$1.15
2009	245.3	234.9	7.3	10.7	1.15	2.29
2010	273.5	256.8	11.7	22.3	1.14	3.44
2011	304.1	280.3	16.6	38.9	1.14	4.58
2012	338.0	306.2	22.2	61.1	1.14	5.72
2013	375.2	334.5	28.5	89.7	1.14	6.86
2014	415.5	364.7	35.6	125.2	1.14	8.00
2015	459.1	397.1	43.4	168.6	1.14	9.14
2016	506.8	432.3	52.1	220.7	1.14	10.28
2017	\$558.9	\$470.5	\$61.9	\$282.6	1.14	11.42

a/Costs were calculated by multiplying CMS National Health Expenditure projections * Lewin projection of the share of total national health expenditures attributable to overweight and obesity morbidity. CMS National Health Expenditures found at : <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf> We calculated the projection for 2017 by holding the CMS National Health Expenditures growth rate for 2016 constant.

Figure 6
Savings to Payer Groups from Obesity Abatement
Scenario 3: Obesity cost grown at .20 percent per year (half the historic rate)
(in billions)

Year	Out-of-pocket savings	Out-of-pocket savings (Cum.)	Savings to Household Insurance premiums	Savings to Household Insurance Premiums (Cum.)	Savings to Private Employers	Savings to Private Employers (Cum.)	Savings to Federal govt.	Savings to Federal govt. (Cum.)	Savings to State and Local govt	Savings to State and Local govt. (Cum.)
2008	\$0.4	\$0.4	\$0.5	\$0.5	\$0.7	\$0.7	\$1.2	\$1.2	\$0.6	\$0.6
2009	0.9	1.3	1.0	1.4	1.5	2.2	2.6	3.8	1.3	2.0
2010	1.4	2.7	1.6	3.0	2.4	4.5	4.2	8.0	2.1	4.1
2011	2.0	4.8	2.2	5.2	3.4	7.9	5.9	13.9	3.0	7.1
2012	2.7	7.5	3.0	8.1	4.5	12.4	8.0	21.9	4.1	11.2
2013	3.5	11.0	3.8	11.9	5.8	18.1	10.2	32.1	5.2	16.4
2014	4.4	15.4	4.7	16.7	7.2	25.3	12.7	44.8	6.5	23.0
2015	5.3	20.8	5.8	22.5	8.8	34.1	15.5	60.4	8.0	30.9
2016	6.4	27.2	6.9	29.4	10.5	44.6	18.7	79.0	9.6	40.5
2017	\$7.6	\$34.8	\$8.2	\$37.7	\$12.5	\$57.2	\$22.1	\$101.2	\$11.3	\$51.8

Source: Lewin Group Estimates.

V. MEDICARE BLENDED EPISODE AND FEE-FOR-SERVICE PAYMENT

In 1983, Medicare's policy toward provider payment shifted from a system based on retrospective cost reimbursement to an approach that based payment on pre-defined units of service at a pre-defined price. The reimbursement for each unit is determined by the costs of specific services and inputs to produce the services. Although this approach can contain costs by standardizing the cost of a service, there is still an incentive to provide increasingly more services and consequently drive up costs.

Welch (1998) suggested that a payment system based on a bundled payment for an episode of care could control costs. Incentives to perform services in different settings derived from different prospective payment system methodologies would be eliminated. Since a provider organization would be paid based on the expected cost of the episode rather than the cost of particular services, there would be no benefit to moving the performance of a service to a setting with a richer payment.³¹ In addition, the incentive to increase the number of services to increase reimbursement is reduced.

The intent of this proposal is to accrue savings to the Medicare program by moving to a payment system based on a blend of bundled payments for episodes of care and fee-for-service. In a comparison of payment under the current system to a system based on episodes of care, we estimated the savings to the Medicare program to be \$160.6 billion over 5 years and \$382.0 billion over 10 years. We estimated savings to national health spending to be \$96.4 billion over 5 years and \$229.2 billion over 10 years.

Background

The Physician Fee Schedule (PFS) and the Prospective Payment system both rely on a pre-defined price for a pre-defined unit of medical service. Payment to physicians and other Part B providers is based on the PFS. Medicare shifted payment for Hospital services to PPS in 1983 and since 2000 has moved Home Health agencies, Outpatient services, Hospice, and Skilled Nursing facilities to PPS. Although, the calculation of the final payment for each provider type varies, the basic approach is the same. A base rate tied to a market basket for the particular provider services is adjusted for local wage and case mix conditions.

The rate is updated annually to incorporate changes in costs reflected in changes in the provider specific market baskets as well as legislative and other policy concerns. The update is calculated and implemented nationally. In the interest of budgetary constraint, Congress placed legislative limits on updates to the PFS with the sustainable growth rate (SGR) system. The SGR links increases in the PFS to changes in GDP and has in the past authorized cuts in physician fees. Congress has circumvented the SGR and prevented the implementation of cuts.

One of the objectives of the PFS and the PPS was to reward efficient providers by providing a payment roughly based on the average costs of providing the service. High cost providers lose under the system while lower cost and presumably more efficient providers win under the

³¹ Welch, P, "Bundled Medicare Payment for Acute and Postacute Care: Would financial risk to hospitals increase if Medicare paid them a lump sum per episode of care" *Health Affairs*, (November/December 1998)

system. All providers have a financial incentive to increase the number of services they perform and consequently increase their revenue.

Policy Proposal and Rationale

The policy proposal would shift the basis for payment from particular services performed by the provider to a bundled payment for an episode of care. An episode of care is a condition defined bundle of services across provider types and settings. The cost of an episode of care is the expected cost of all services performed to treat the condition. In the acute care setting, the payment for the episode of care is based on all the care associated with the condition that triggered the hospitalization. In the ambulatory setting the cost of the episode of care would be the expected cost of all the ambulatory services associated with the condition. The payment rates would be based on the 75th percentile of the Metropolitan Statistical Area (MSA) with the lowest severity adjusted resource cost nationally.

Methodology Overview

In order to evaluate the effects of the policy proposal, we need to estimate average Medicare expenditures by MSA and episodes of care. Further, the episode of care average costs would have to be split into costs for episodes including a hospitalization and episodes restricted to an ambulatory setting. Ideally, we would use a risk adjusted episode of care grouper to assign Medicare claims into condition defined acute and ambulatory episodes of care by MSA. We could then calculate average cost of an ambulatory and acute care episode of care and identify the lowest cost MSA. We would then use the 75th percentile of the ambulatory and acute care episodes to base the episode of care payment.

To implement this methodology without access to an episode grouper, we used a study developed by the Medicare Payment Advisory Commission (MedPAC) and the 2004 Medicare Expenditure Panel Survey (MEPS) Consolidated Household file, Medical Condition file, and the Medical Event files to estimate an acute and ambulatory episode of care average cost by MSA. MedPAC developed episode of care costs by MSA using a 5 percent sample of the Medicare National Claims History (NCH) data for 2001, 2002, and 2003. They calculated two estimates of average episode of care costs by MSA using the Episode Treatment Group (ETG) developed by Symmetry Health Data systems and the Medstat Episode Group (MEG) developed by MedStat. The two groupers each organized 90 percent of the claims into risk adjusted episodes of care.³² In their report, MedPAC reported average costs for episodes of care for 13 disease condition categories using the MEP and ETG groupers. MedPAC made available to Lewin the 75th percentiles for the ETG average costs by the 13 condition categories (*Figure 1*). We used the ETG episode costs as the basis for our analysis.

³² Report to Congress: Increasing the Value of Medicare, The Medicare Payment Advisory Commission, June 2006

Figure 1
ETG Cost Distribution by 13 Condition Categories ^{a/}

Condition Category	Average Cost	75 th Percentile
Coronary Artery Disease (CAD)	\$3997.0	\$3861.4
Bacterial Pneumonia	3056.6	4797.7
Cerebrovascular Disease	2813.6	3640.8
Essential Hypertension	469.2	475.6
Congestive Heart Failure (CHF)	3160.2	3610.0
Urinary Tract Infection (UTI)	522.9	355.9
Diabetes I	1798.0	1336.9
Diabetes II	636.0	644.0
Cholecystitis	4256.4	6596.2
Prostate Cancer	2319.9	1448.0
Breast Cancer	2399.7	1629.0
Peptic Ulcer Disease	2220.4	2511.8
Sinusitis	\$231.2	\$227.8

a/Source:Report to Congress: Increasing the value of Medicare, MedPAC, June 2006

MedPAC reported the relative resource use for 7 condition categories and 13 selected MSAs (*Figure2*). The relative resource use factor represents the average cost of an episode in an MSA relative to the national average episode cost for that condition category.

Figure 2
Relative Resource Use Factors for 6 Condition Categories by Selected MSA's ^{a/}

MSA	Congestive Heart Failure	Coronary Artery Disease	Diabetes I	Diabetes II	Breast Cancer	Essential Hypertension	Bacterial Pneumonia
Boston	1.00	0.86	0.99	0.95	0.86	0.96	0.96
Chicago	1.05	1.04	1.13	1.17	1.06	1.14	1.11
Denver	0.91	1.03	1.04	0.96	1.24	0.92	1.04
Detroit	0.90	0.79	1.07	1.08	0.94	1.15	0.91
Greenville	0.91	1.24	1.21	0.91	1.02	0.87	0.80
Houston	1.16	1.04	1.13	1.16	1.02	1.20	1.11
Kansas	1.31	0.98	0.96	0.99	0.79	1.13	0.96
Miami	0.99	0.66	1.06	1.28	0.82	1.20	1.16
Minneapolis	1.00	1.28	0.72	0.88	1.14	0.87	0.76
New York	0.86	0.65	1.41	1.11	1.01	1.13	1.12
Orange County	1.01	0.76	1.17	1.31	0.98	1.00	1.03
Philadelphia	1.11	0.78	1.09	1.07	0.81	1.05	1.08
Phoenix	0.81	0.91	0.95	1.05	1.08	0.94	0.78

a/Source:Report to Congress: Increasing the value of Medicare, MedPAC, June 2006

The 13 conditions categories MedPAC reported represented about 20 percent of the Medicare expenditures in 2004. To estimate the average cost for the episodes of care not reported by MedPAC and estimate the split between ambulatory and acute care episodes we used the MEPS data.

We used the events in the Medical Events files associated with particular conditions in the Medical Condition file to identify episodes based on conditions in the MEPS data. We mapped the conditions in the MEPS data to the 13 condition categories reported in the MedPAC study. We estimated the average cost of an episode for each MedPAC condition category as well as the average cost of an episode for all other conditions. We scaled the MEPS episode average costs to the MedPAC average costs by condition category and used the average adjustment to adjust all other conditions episode costs to the MedPAC estimates.

In the MEPS data, we used the presence of a hospital stay during the episode to determine if it was an acute care episode or an ambulatory episode. We distributed the adjusted MEPS estimates of episode of care costs into ambulatory and acute care episodes based on the criteria described above. The final data file includes estimates of the average costs for ambulatory and acute care episodes of care for the 13 condition categories reported in the MedPAC study as well as all other conditions.

We estimated the base payment rates for ambulatory and acute care episodes of care by multiplying the 75th percentile of each condition category with the lowest factor across all MSAs within a condition category (*Figure 2*). In the case of condition categories where no resource factor was reported, we calculated the average factor across condition categories by MSA and used the lowest average factor. This methodology will produce savings by setting payment for an episode of care to the 75th percentile of the least expensive MSA.

Cost Savings

We projected Medicare expenditures under the proposal from 2008 to 2017 by using the Congressional Budget Office (CBO) growth rates for selective Part A and Part B services.³³

To account for provider behavioral response to the change in the payment methodology, we applied a 10 percent offset to the resulting reduction in the payment.³⁴ The Office of the Actuary (OACT) at the Center for Medicare and Medicaid Services (CMS) estimated the provider behavioral offset to fee reductions to be 30 percent. We assumed the offset to this payment reduction would be smaller due to the change in the payment methodology that would make it more difficult to offset a revenue reduction with increased utilization.

In *Figure 3*, we estimate the savings to the Medicare program over the 10 year time horizon. In 2008, the projected savings to Medicare is \$29.0 billion dollars. We estimate savings to Medicare over 5 years to be \$160.6 billion and \$382.0 billion over 10 years. This savings to Medicare however, does represent a net loss to providers which research has shown would initiate some form of cost shift of that loss to other payers. There are two separate studies indicating that

³³ 2006 and 2007 Fact Sheet for CBO's March Baseline:Medicare.

³⁴ <http://www.cms.hhs.gov/ReportsTrustFunds/downloads/TechnicalPanelReport2000.pdf>

about half of hospital payment shortfalls are passed-on to private payers in the form of higher charges.³⁵ However, two other studies showed considerably less evidence of hospital cost-shifting, although they did not rule out a partial cost-shift.³⁶ One study of physician pricing by Thomas Rice et al., showed that for each one percent reduction in physician payments under public programs, private sector prices increased by 0.2 percent.³⁷ Our own analysis of hospital data indicated that about 40 percent of the increase in hospital payment shortfalls (i.e., revenues minus costs) in public programs were passed-on to private-payers in the form of the cost shift during the years studied.³⁸ After adjusting for the cost shift to other payers, we estimate the savings to national health spending to be \$96.4 billion over 5 years and \$229.2 billion over the 10 years.

Figure 3
Effects of a Blended Episode and Fee-for-Service Payment System on Medicare and National Health Spending
(in billions)

Year	Medicare Spending under Current Policy ^{a/}	Medicare Spending under Policy Proposal ^{b/}	Savings to Medicare	Savings to Medicare (Cum)	Savings to National Health Spending ^{c/}	Savings to National Health Spending (Cum.)
2008	\$293.0	\$264.0	\$29.0	\$29.0	\$17.4	\$17.4
2009	305.7	275.4	30.3	59.3	18.2	35.6
2010	321.4	289.6	31.8	91.1	19.1	54.7
2011	340.4	306.6	33.7	124.8	20.2	74.9
2012	361.9	326.1	35.8	160.6	21.5	96.4
2013	386.4	348.2	38.3	198.9	23.0	119.3
2014	412.9	372.0	40.9	239.8	24.5	143.9
2015	442.2	398.4	43.8	283.5	26.3	170.1
2016	477.3	430.1	47.2	330.7	28.3	198.4
2017	\$518.2	\$467.0	\$51.2	\$382.0	\$30.7	\$229.2

a/Growth in Part A and Part B expenditure projections were taken from the 2006 and 2007 Fact Sheet for CBO's March Baseline:Medicare.

b/Lewin Group Sources

c/Calculated by subtracting the sum of the costs to other payers in Figure 4 from the savings to Medicare in Figure 3.

³⁵ Dranove, David, "Pricing by Non-Profit Institutions: The Case of Hospital Cost Shifting," *Journal of Health Economics*, Vol. 7, No. 1 (March 1998); and Sloan, Frank and Becker, Edward, "Cross-Subsidies and Payment for Hospital Care," *Journal of Health Politics, Policy and Law*, vol. 8., No. 4 (Winter 1984)

³⁶ Zuckerman, Stephen, "Commercial Insurers and All-Payer Regulation," *Journal of Health Economics*, Vol. 6. No. 2 (September 1987); and Hadley, Jack and Feder, Judy, "Hospital Cost Shifting and Care for the Uninsured." *Health Affairs*, Vol. 4 No. 3 (Fall 1985).

³⁷ Rice, Thomas, et al., "Physician Response to Medicare Payment Reductions: Impacts on public and Private Sectors," Robert Wood Johnson Grant No. 20038, September 1994.

³⁸ Sheils, J., Claxton, G., "Potential Cost Shifting Under Proposed Funding Reductions for Medicare and Medicaid: The Budget Reconciliation Act of 1995," (Report to the National Coalition on Health Care), The Lewin Group, December 6, 1995

In *Figure 4* we estimate the costs to other payers. We estimate the largest share of the cost is shifted to Private Employers at a cost of \$37.9 billion over 5 years and \$90.1 billion over 10 years. We estimate the cost to households to be \$16.7 billion over 5 years and \$39.7 billion over 10 years. We estimate the cost to the Federal government to be \$1.9 billion over 5 years and \$4.6 billion over 10 years. We estimate the cost to State and Local governments to be \$7.7 billion over 5 years and \$18.3 billion over 10 years.

Figure 4
The Cost to Payers of an Episode and Fee-for-Service Payment System
(in billions)

Year	Cost to Households	Cost to Households (Cum.)	Cost to State and Local Govt.	Cost to State and Local Govt. (Cum.)	Cost to Federal Govt.	Cost to Federal Govt. (Cum.)	Cost to Private Empl	Cost to Private Empl (Cum.)
2008	\$3.0	\$3.0	\$1.4	\$1.4	\$0.35	\$0.3	\$6.8	\$6.8
2009	3.1	6.2	1.5	2.8	0.36	0.7	7.1	14.0
2010	3.3	9.5	1.5	4.4	0.38	1.1	7.5	21.5
2011	3.5	13.0	1.6	6.0	0.40	1.5	8.0	29.5
2012	3.7	16.7	1.7	7.7	0.43	1.9	8.5	37.9
2013	4.0	20.7	1.8	9.5	0.46	2.4	9.0	46.9
2014	4.3	24.9	2.0	11.5	0.49	2.9	9.6	56.6
2015	4.6	29.5	2.1	13.6	0.53	3.4	10.3	66.9
2016	4.9	34.4	2.3	15.9	0.57	4.0	11.1	78.1
2017	\$5.3	\$39.7	\$2.5	\$18.3	\$0.61	\$4.6	\$12.1	\$90.1

Source: Lewin Group Estimates.

VI. PROMOTING HEALTH INFORMATION TECHNOLOGY

The intent of this proposal is to use Federal policy to increase the adoption of Health Information Technology (HIT) in the United States health care system. HIT includes a variety of integrated data sources, including patient Electronic Medical Records (EMR), Decision Support Systems, and Computerized Physician Order Entry (CPOE) for medications and other medical services. HIT systems would improve access to patient information and allow health information to be communicated to other providers, patients, and insurers. Literature suggests that the implementation of HIT would create efficiency savings to providers and insurers while reducing the risk of medical errors.

This proposal would levy a 1 percent tax on private insurance premiums and allocate 1 percent of Medicare expenditures for HIT promotion activities. The Medicare allocation will be based on the previous year's expenditure. The revenues will be divided between the Office of the National Coordinator for Health Information Technology (ONC) and the states. ONC would use the funds to oversee state HIT activities and strengthen Federal efforts to promote HIT adoption. The states would use the funding to provide direct assistance to providers in the adoption of HIT technology and promote the development of Health Information Exchange Networks (HIEN). We estimate the net cost to national health expenditures resulting from the state and Federal promotion efforts to be \$13.6 billion over 5 years and a net savings of \$87.8 billion over 10 years.³⁹ These costs represent the net effects of the policy on HIT adoption by providers and the development of interoperability.

Background

The President's Information Technology Advisory Committee (PITAC) has recommended federal leadership in developing HIT systems centering on the development of computer-based patient data.⁴⁰ HIT systems center around a computerized system for recording patient medical histories, test results and prescriptions called an electronic medical record (EMR).⁴¹ The EMR would feature standardized terminology and reporting formats that eliminate the dangers arising from illegible handwriting and missing patient data. PITAC identified four essential elements of the HIT systems envisioned:⁴²

³⁹ We calculated this by adding the Cumulative marginal savings from Figure 2 to the cumulative net savings to national health spending on Figure 3.

⁴⁰ President's Information Technology Advisory Committee. (2004, June). *Report to the President: Revolutionizing Health Care Through Information Technology*.

⁴¹ Brailer in his discussion of computer-based patient records' focuses on the lack of commonly accepted and discrete definitions and terminology that have resulted in some confusion and slowed the progress of technology adoption. The terms he listed to give perspective on the problem are : automated medical record (AMR), clinical data repository (CDR), computer-based patient record (CPR), computer-based patient record system (CPRS), computer-based patient record-type system (CPRS), computerized medical record (CMR), computerized patient record (CPR), electronic health record (EHR), electronic medical record (EMR), lifetime data repository (LDR), virtual health record (VHR) and virtual patient record (VPR). This list does not begin to include the varying terminology for computer physician order entry or electronic prescribing programs.

⁴² Advanced HIT systems also could facilitate the compilation for outcomes analyses and health quality measures that provide continual feedback to providers on the effectiveness of the care provided.

- EMRs for all Americans that provide every patient and his or her caregivers all necessary information required for optimal care while reducing costs and administrative overhead.
- Computer-assisted clinical decision support (CDS) to increase the ability of health care providers to take advantage of state-of-the-art medical knowledge as they make treatment decisions (called evidence-based medicine).
- Computerized practitioner order entry (CPOE) systems for tests, medicine and procedures for outpatient care and within the hospital environment.⁴³ This information together with test results would be recorded as a component of the EMR.
- Secure, private, interoperable, electronic health information exchange, including both highly specific standards for capturing new data and tools for capturing non-standards compliant electronic information from legacy systems.

The literature provides evidence of the cost impacts of CPOE and CDS systems, but provides only limited evidence of savings from the detailed EMR itself. Savings from CPOE have been documented in both inpatient and ambulatory care settings. There also is growing evidence that CPOE and other elements of these technology advances would help avoid medical errors and reduce unnecessary duplication of tests in hospitals resulting in reduced health spending. Studies indicate savings of between \$5.0 million and \$26.0 million for individual hospitals adopting elements of these HIT systems.⁴⁴ A study by Bates found that CPOE for tests and prescriptions reduced non-intercepted serious medication errors by 55.0 percent, with a reduction in hospital charges of about 12.7 percent. Another study showed that a program that assisted with antibiotic management resulted in a fivefold decrease in the frequency of excess drug dosages and a tenfold decrease in antibiotic-susceptibility mismatches resulting in reduced health care costs.

Savings also are likely to result from automated systems in ambulatory care settings, such as physician offices. A study of 59 physician practices documented savings and increased revenues of about \$1.0 million compared with the prior year.⁴⁵ Savings in physician offices resulted from reduced need for transcription services, decreased labor and supply costs for chart maintenance and creation and decreased physical space requirements due to the use of a paperless record. For example, it has been estimated that each physician request for a patient's medical record, called a "chart pull," can cost between \$8 and \$9 in labor and other costs. This study showed that the number of chart pulls requested declined by about 40 percent.⁴⁶

⁴³ CPOE also is recognized as computerized *provider* and/or *physician* order entry systems

⁴⁴ Bates, D., Teich, J., Lee, J., et al. (1999). The Impact of Computerized Physician Order Entry on Medication Error Prevention. *Journal of the American Medical Informatics Association*, 6, 313-21.

⁴⁵ Barlow, S., Johnson, J., and Steck, J. (2004). The Economic Effect of Implementing an EMR in an Outpatient Setting. *Journal of Healthcare Information Management*, 18(1), 46-51.

⁴⁶ Johnston, D. (2003). *The Value of Computerized Provider Order Entry in Ambulatory Settings*. Boston: Center for Information Technology Leadership. The study estimates that another \$27 billion could be saved through increased compliance with drug formularies (e.g., increased use of generic drugs etc.), although these potential savings have yet to be demonstrated.

Cost Estimates

Under the proposal, funding is allocated to the states for direct assistance to providers for HIT adoption. In addition, funding is allocated to the states and the federal government to foster the development of interoperability and Health Information Exchange Networks (HIEN). The mechanism for funding the states takes the form of Federal matching funds. The states are granted funds on a 3:1 basis for direct provider assistance and a 15:1 basis for development of HIEN.

A report from the National Conference of State Legislatures indicated that at least 17 states were providing funding for HIT implementation.⁴⁷ We found HIT funding data for 14 of those states totaling \$124.7 million dollars in 2007. Funding levels ranged from \$330,000.0 to \$57.0 million dollars with three states exceeding the \$20.0 million funding. The remaining 11 states funded at the \$10.0 million level or less. For the 3 states we did not have reported funding, we estimated the HIT funding by using the average spending level of 11 of the 14 states.⁴⁸ In addition, we found 5 states were funding HIT through private-public partnerships. We estimated aggregate state spending for HIT in 2007 to be \$190.3 million.

We used the Consumer Price Index (CPI) to project the 2007 aggregate state spending to \$194.6 million for 2008. Our own research of state spending response to Federal matching programs found an elasticity of .75 to estimate the increase in state spending resulting from the match.⁴⁹ We estimated State spending in 2008 would increase to \$1.3 billion. Since there was not consistent guidance from the state data, we assumed spending to be evenly split between provider assistance and HIEN development. We projected \$28.0 billion over 10 years in Federal and state spending for direct provider assistance and \$118.5 billion for HIEN development and interoperability (*Figure 1*).

We have estimated the costs and savings of the accelerated adoption of HIT by providers and the costs and savings of the interoperability that HIEN will allow. We assume the source of savings from HIT implementation would be reductions in rates of medical errors, more efficient use of diagnostic testing, and more efficient drug utilization. All of these factors would result in decreased utilization and savings to national health spending and all payers. Savings to the provider's office derived from sources that lower the provider's costs e.g. electronic transcription or more efficient use of nursing time, would result in increased profits to providers. In the private market, competition would convert these profits into savings to national health spending and all payers. In the public sector non-utilization related savings would not accrue to savings in national health spending or public payers.

⁴⁷ Report found at <http://www.ncsl.org/programs/health/forum/Hitch/stateactivities.htm>. Oregon was not in the report but it was indicated in <http://www.healthpolicyohio.org/pdf/OhioHealthInfo2005.pdf>. That Oregon was funding HIT.

⁴⁸ New York, Rhode Island, and California HIT spending levels were not included in the calculation. Their level of funding was on the extreme high side of the distribution.

⁴⁹ Lewin Group Sources: The Health Benefits Simulation Model (HBSM):

Figure 1
Federal and State Spending under Policy Proposal
(in billions)

Year	State Spending Under Proposal	State Spending under Proposal (Cum)	Federal Match and State spending for Provider Assistance	Federal Match and State spending for Provider Assistance (Cum)	Federal Match and State spending for HIEN ^{a/}	Federal Match and State spending for HIEN (Cum)
2008	\$1.12	\$1.1	\$2.5	\$2.5	\$10.7	\$10.7
2009	1.14	2.3	2.6	5.1	10.9	21.6
2010	1.17	3.4	2.6	7.8	11.2	32.7
2011	1.19	4.6	2.7	10.5	11.4	44.2
2012	1.22	5.8	2.8	13.2	11.7	55.8
2013	1.25	7.1	2.8	16.0	12.0	67.8
2014	1.28	8.4	2.9	18.9	12.2	80.1
2015	1.30	9.7	2.9	21.9	12.5	92.6
2016	1.33	11.0	3.0	24.9	12.8	105.4
2017	\$1.36	\$12.4	\$3.1	\$28.0	\$13.1	\$118.5

a/Includes Federal match, state spending, and portion of total revenue collected allocated to the Office of the National Coordinator for Health Information Technology. Also includes funds from state-private partnerships.

Bower (2005) developed an estimate of the trend in the percentage of providers that are adopting HIT under current policy. Federico *et al.* (2005) used the Bower trend to model the accumulated costs and savings of HIT implementation over a 5, 10, and 15 year period. We used these estimates as the basis for baseline estimates of the costs and savings of HIT implementation under current policy in each year of our projection period.

We estimated the costs and savings of HIT under the proposal as follows. We used the proportion of spending on HIT to the percentage of providers adopting HIT under the current policy to estimate the increase in the percentage of providers that would have adopted HIT under the increased spending proposed in the policy. We used the accelerated trend in adoption to proportionally increase the cost and savings estimated under the current policy.

Bower (2005) developed an approach to estimate the adoption rate of HIT in the United States. Based on the experience of IT adoption in other industries he fitted the growth in electronic medical records system to the growth curve of IT in the Enterprise Resource Planning industry. Bower defined a provider as implementing HIT if the provider had deployed an electronic medical record system, clinical decision support, and Computerized Practitioner Order Entry (CPOE) systems.

Using 2004 as the base year he assumed HIT implementation to be 20 percent complete in the ambulatory setting and 25 percent complete in the inpatient setting. He then modeled an adoption speed based on the assumption that full adoption (90 percent) would require an additional 15 years. Bower found that IT diffusion tends to reach a maximum participation of 90

percent due to interoperability and connectivity limitations. Although, the additional spending under the proposal may facilitate a higher level of participation, we based our estimates on the 90 percent assumption.⁵⁰

Federico *et al.* (2005) used the adoption speed developed by Bower to model costs and savings for HIT implementation in the 5th, 10th, and 15th years of the adoption period. Based on Federico’s estimates, we estimated annual costs, savings and the percentage of providers that adopted HIT over the 2008-2017 period (*Figure 2*).⁵¹ Under current policy we estimate HIT to cost \$50.6 billion over five years and \$83.7 billion over 10 years. We estimate savings to national health spending from HIT to be \$138.5 billion over 5 years and \$496.2 billion over 10 years. We estimate provider participation would reach 85.2 percent by 2017.

Figure 2
Spending on HIT Adoption and National Health Expenditures under Current Policy
(in billions)

Year	Estimated Spending on HIT Under Current Policy		Percent of Providers adopting HIT under Current Policy (Percent) ^{a/}	Estimated Net Savings to National Health Spending Under Current Policy	
	Amount in Year ^{a/}	Cumulative		Amount in Year ^{a/}	Cumulative
2008	\$6.2	\$6.2	38.4%	\$17.8	\$17.8
2009	11.1	17.3	44.8	18.5	36.3
2010	11.1	28.4	51.3	26.3	62.6
2011	11.1	39.5	57.7	34.1	96.7
2012	11.1	50.6	64.2	41.8	138.5
2013	11.1	61.7	70.6	55.4	193.9
2014	5.5	67.2	74.3	68.9	262.8
2015	5.5	72.7	77.9	73.3	336.1
2016	5.5	78.2	81.6	77.8	413.9
2017	\$5.5	\$83.7	85.2%	\$82.3	\$496.2

a/Extrapolated from 5, 10, and 15 year projections of savings and costs found in Federico, G., *Extrapolating Evidence of Health Information Technology Savings and Costs*, Santa Monica, California.: RAND Corporation, MG-410-HLTH,2005.

Under the policy proposal, we estimate the States and the Federal government would spend \$13.2 billion over 5 years and \$24.9 billion over 10 years in assistance to provider adoption of HIT. In addition, the governments would spend \$55.8 billion over 5 years and \$121.7 billion over ten years on promoting interoperability and HIEN development.

⁵⁰ Bower, A., *The Diffusion and Value of Healthcare Information Technology*, Santa Monica, California.: RAND Corporation, MG-272-HLTH,2005.

⁵¹ Federico, G., *Extrapolating Evidence of Health Information Technology Savings and Costs*, Santa Monica, California.: RAND Corporation, MG-410-HLTH,2005.

We estimate the savings and costs to national health spending associated with direct assistance to providers for HIT adoption by assuming an elasticity of -0.5 for acceleration in the rate of provider participation resulting from the government spending.⁵² Under the proposal, we estimate provider participation reaches 90.0 percent in 2017. We estimate the cost to national health spending to be \$13.2 billion over 5 years and \$24.9 billion dollars over 10 years. We estimate the aggregate savings to national health spending to be \$133.9 billion after 5 years and \$509.4 billion after 10 years. We estimate the marginal increase in savings to national health spending from the policy proposal would be \$-4.6 billion over 5 years and \$13.2 billion over 10 years (*Figure 3*).

Figure 3
Effects of Direct Assistance to Providers for HIT Adoption on National Health Expenditures Under Proposal
(dollars in billions)

Year	Proposed Direct Provider Assistance		Providers adopting HIT under Proposed policy (Percent) <i>a/</i>	Cost to National Health Spending		Estimated Net Savings to National Health Spending Under Proposal		Marginal Savings	
	Amount in Year	Cumulative		Amount in Year <i>b/</i>	Cumulative	Amount in Year <i>c/</i>	Cumulative	Amount in Year <i>d/</i>	Cumulative
2008	\$2.5	\$2.5	38.4%	\$2.5	\$2.5	\$15.7	\$15.7	\$-2.1	\$-2.1
2009	2.6	5.1	46.3	2.6	5.1	16.9	32.6	-1.6	-3.7
2010	2.6	7.8	53.5	2.6	7.8	25.3	57.9	-1.0	-4.7
2011	2.7	10.5	60.7	2.7	10.5	33.7	91.7	-0.3	-5.0
2012	2.8	13.2	68.0	2.8	13.2	42.2	133.9	0.4	-4.6
2013	2.8	16.0	75.3	2.8	16.0	57.0	190.9	1.6	-3.0
2014	2.9	18.9	79.9	2.9	18.9	71.6	262.5	2.8	-0.2
2015	2.9	21.9	84.5	2.9	21.9	77.1	339.6	3.7	3.5
2016	3.0	24.9	89.2	3.0	24.9	82.6	422.2	4.8	8.2
2017	\$0.0	\$24.9	90.0%	\$0.0	\$24.9	\$87.2	\$509.4	\$4.9	\$13.2

a/Increased extrapolating the effects of using an elasticity of -.5 on the 5, 10, and 15 year projections of savings and costs found in Federico, G., Extrapolating Evidence of Health Information Technology Savings and Costs, Santa Monica, California.: RAND Corporation, MG-410-HLTH,2005.

Baseline costs for HIEN implementation extrapolated from Kausal.,R The Costs of a National Health Information Network., Annals of Internal Medicine, 2005.

b/The portion of direct assistance from the 1% premium tax and additional State spending.

c/Extrapolated from 5, 10, and 15 year projections of savings and costs found in Federico, G., Extrapolating Evidence of Health Information Technology Savings and Costs, Santa Monica, California.: RAND Corporation, MG-410-HLTH,2005.

d/This is the difference between the net estimated savings in Figure 3 and the net estimated savings in Figure 2.

Lewin Group Sources:

⁵² See note 12. Federico performed a sensitivity analysis on the adoption rate based on an elasticity of -.25,-.5, and -.75.

We estimate the savings and costs to national health spending associated with investment in HIEN and interoperability by assuming that HIEN and interoperability are at 5 percent of full implementation.⁵³ We also assume that the level of government spending will stimulate implementation of the technology at the same rate of provider adoption of HIT as estimated by Federico. We assume that savings accrue from HIEN and interoperability at the same rate that savings accrued from provider adoption. We assumed that HIEN and interoperability would accrue additional savings from visits that involved multiple providers. We found that 30 percent of office visits to a physician other than the patient's primary care physician are by referral.⁵⁴ Consequently, we assume that interoperability would benefit that share of provider utilization and produce additional savings. We thus estimated savings based on 30 percent of the savings attributed to provider adoption at the comparable level of implementation.

In addition to the benefits to provider utilization, improvements in disease and chronic care management would accrue savings through better health outcomes. Bigelow (2005) estimated short term savings of \$28.0 billion annually and long term savings of \$138.7 billion at 100 percent adoption and participation.⁵⁵ We assumed 35 percent of physicians would be eligible to participate and there would be 54 percent adherence to the programs.⁵⁶ We estimated the savings based on the above participation and adherence rates and pro-rated them to reflect the level of participation in each year of the projection.

Under the proposal, we estimate HIEN and interoperability would be 72.3 percent implemented by 2017. We estimate the additional cost to national health spending due to the tax on premiums would be \$55.8 billion over 5 years and \$118.5 billion over 10 years. We estimate that the cost to national health spending would be \$9.0 billion after 5 years and a savings of \$74.6 billion after 10 years (*Figure 4*). We estimate that HIEN and interoperability begins accruing savings to national health spending in 2011.

⁵³ See note 9

⁵⁴ National Ambulatory Medical Care Survey: 2004 Summary. CDC

⁵⁵ J. Bigelow et al., "Analysis of Healthcare Interventions that change Patient Trajectories (Santa Monica, Calif.: Rand, 2005), 137, Table 6.17

⁵⁶ Thirty five percent of physicians work under managed care which would be inclined to promulgate disease management programs.

Figure 4
Effects of Spending on HIEN and Interoperability on National Health Expenditures Under Proposal
(dollars in billions)

Year	Proposed Spending on HIEN and Interoperability		HIEN and Interoperability Adoption (Percent) ^{b/}	Cost to National Health Spending ^{c/}		Estimated Net Savings to National Health Spending Under Proposal	
	Amount in Year ^{a/}	Cumulative		Amount in Year	Cumulative	Amount in Year	Cumulative
2008	\$10.7	\$10.7	12.3%	\$10.7	\$10.7	\$-5.9	\$-5.9
2009	10.9	21.6	18.9%	10.9	21.6	-4.1	-10.0
2010	11.2	32.7	24.9%	11.2	32.7	-1.8	-11.8
2011	11.4	44.2	30.4%	11.4	44.2	0.4	-11.4
2012	11.7	55.8	35.7%	11.7	55.8	2.4	-9.0
2013	12.0	67.8	43.5%	12.0	67.8	8.3	-0.7
2014	12.2	80.1	51.0%	12.2	80.1	13.6	12.9
2015	12.5	92.6	58.1%	12.5	92.6	17.2	30.1
2016	12.8	105.4	65.0%	12.8	105.4	20.6	50.7
2017	\$13.2	\$118.5	72.3%	\$13.1	\$118.5	\$23.9	\$74.6

a/ State spending plus Federal matching funds for HIEN development.

b/ Extrapolated from 5, 10, and 15 year projections of savings and costs found in Federico, G., Extrapolating Evidence of Health Information Technology Savings and Costs, Santa Monica, California.: RAND Corporation, MG-410-HLTH, 2005.

c/ Federal matching funds derived from 1% tax on insurance premiums and additional state spending due to Federal match.

We estimated the marginal savings attributed to accelerating the rate of provider HIT adoption and developing HIEN and interoperability would be distributed to the payer groups (*Figure 5*) as follows. We estimated the savings to out-of-pocket to be \$6.8 billion over 5 years and \$27.2 billion over 10 years. We estimated a cost to private health insurers to be \$20.5 billion over 5 years and \$0.2 billion over 10 years. We assumed that the unmatched portion of the premium tax would be credited back to private insurers. Similarly, unspent federal dollars would be credited back to the treasury. We estimated the cost to the Federal government to be \$1.5 billion over 5 years and a savings of \$41.4 billion over 10 years. We estimated a \$1.7 billion savings to State and Local governments over 5 years and \$19.3 billion over 10 years.

Figure 5
Savings and Costs to Payers Groups Resulting from Additional Federal and State Spending on HIT Promotion
(in billions) ^{a/}

Year	Out-of-pocket Savings	Out-of-pocket savings (Cum.)	Cost to Private Insurance	Cost to Private Insurance (Cum.)	Savings to Federal govt.	Savings to Federal govt. (Cum.)	Savings to State and Local govt.	Savings to State and Local govt. (Cum.)
2008	\$0.6	\$0.6	-\$5.9	-\$5.9	-\$2.3	-\$2.3	-\$0.4	-\$0.4
2009	1.0	1.6	-5.1	-11.1	-1.4	-3.7	-0.1	-0.5
2010	1.4	3.0	-4.1	-15.2	-0.3	-4.1	0.3	-0.2
2011	1.7	4.7	-3.1	-18.3	0.7	-3.3	0.7	0.6
2012	2.1	6.8	-2.2	-20.5	1.8	-1.5	1.1	1.7
2013	2.9	9.7	0.3	-20.2	4.5	3.0	2.1	3.8
2014	3.7	13.4	2.6	-17.6	7.0	10.0	3.0	6.8
2015	4.2	17.7	4.2	-13.4	8.8	18.8	3.7	10.5
2016	4.7	22.4	5.6	-7.8	10.7	29.5	4.3	14.9
2017	\$4.8	\$27.2	\$7.7	\$-0.2	\$11.9	\$41.4	\$4.4	\$19.3

a/Calculated by using distribution of payer expenditures found at CMS National Health Expenditure projections found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>. We calculated the projection for 2017 by holding the CMS National Health Expenditures growth rate for 2016 constant.

VII. ALL PAYER PROVIDER PAYMENT METHODS AND RATES

In this analysis we evaluate the cost impact of the policy proposal to reduce the cost shift between payers for health care services. This would be achieved by using Federal statute to create standardized and publicly available rates for all payers. The policy proposes transitioning to this form of payment by fixing rate increases for private payers and Medicaid to the Medicare payment updates. Private payer rates would be increased by 1 percentage point less than the Medicare payment update each year until the private rate equaled the Medicare payment rates. Conversely, Medicaid payments to fee-for-service providers would be increased by 1 percentage point each year over the Medicare payment update until the Medicaid rate equaled the Medicare payment rate.

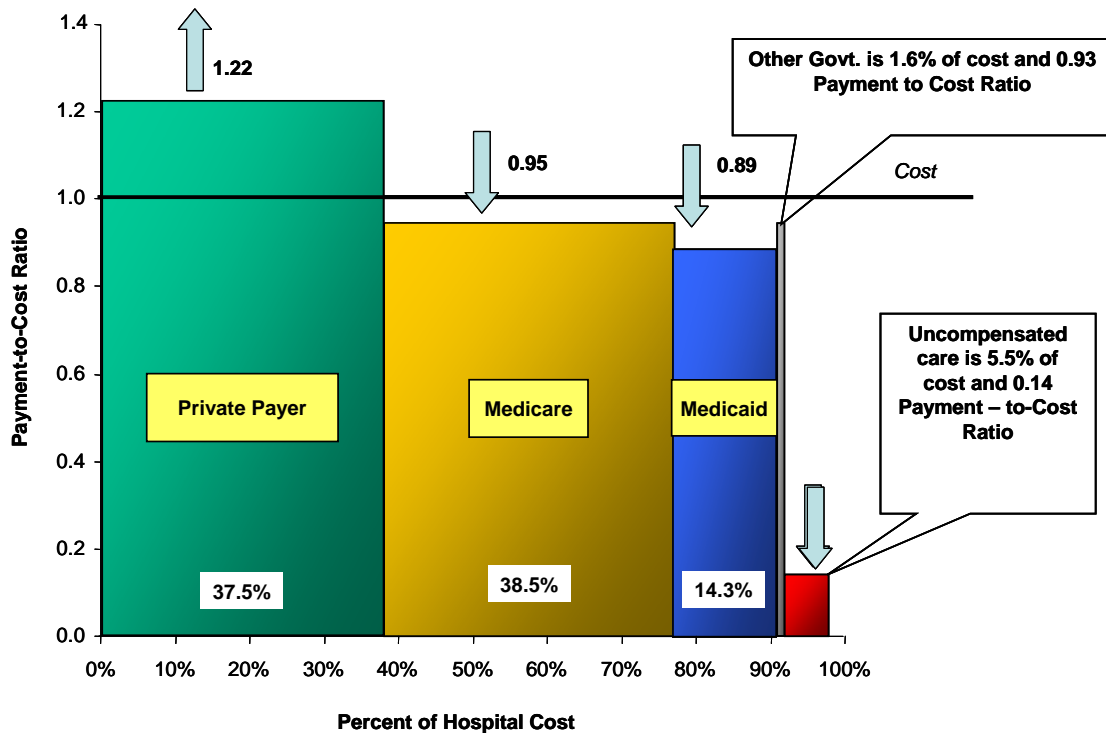
In addition, the policy proposes to use some of the savings accrued to private payers to subsidize the Federal and state governments for the increased Medicaid payments. This would be achieved by imposing an assessment on the private insurance premiums equal to one half of the difference between the savings private payers would realize if they had to pay the rate at the full Medicare update and what they have to pay under the policy. This revenue would also be used to subsidize providers that treat uninsured patients. We estimate savings to all private payers from payment rate reductions of \$62.5 billion over 5 years and \$268.0 billion over 10 years. We estimate after the assessment and the increased Medicaid spending a net savings to national health spending of \$23.1 billion over 5 years and \$122.4 billion over 10 years.

Background

In the US Health care system today, providers charge different rates to different payers for the same services. This variance is driven by a cost shift from one class of providers to another. Public payers and the uninsured pay rates below average costs while private payers rates are significantly higher than the average costs of services. *Figure 1* presents a simplified illustration of how cost-shifting occurs in the health care system.

Under current policy, the amounts paid under Medicaid and for the uninsured are typically substantially less than the average cost of providing services for these groups. Medicare payments are typically closer to average costs, but are often less than average costs as well. These under-payments by public programs and the uninsured create a shortfall in funding for the provider. These shortfalls are typically recovered by charging higher amounts for care provided to privately insured people. Providers typically set “charges” for services which are substantially higher than costs. Private health plans negotiate “discounts” with providers off of these charges. However, the amounts that private carriers pay are still substantially higher than costs, which is necessary to compensate for the shortfalls in payment for the uninsured and public programs.

Figure 1
Cost-Shift Payment Hydraulic, As of 2002



Source: Al Dobson, Joan DaVanzo and Namrat Sen, "The Cost-Shift Payment 'Hydraulic': Foundation, History, and Implications," Health Affairs, January/February 2006, volume 25, number 1. Lewin Group Sources.

Methodology

In order to calculate the effects of the proposal it is necessary to establish the baseline growth rate for charges to each payer. To determine this we had to identify the portion of the growth in spending attributable to increases in charges. Research has identified several categories of factors that are driving the health care costs. Research conducted by the CMS Office of the Actuary has identified and measured the following groups of effects:

Population Growth: Includes births and immigration.

Changes in the Demographic Composition of the Population: Reflects primarily the aging of the population.

General Inflation: As measured by the Consumer Price Index (CPI) or the Gross National Product (GNP) deflator preferred by some economists.

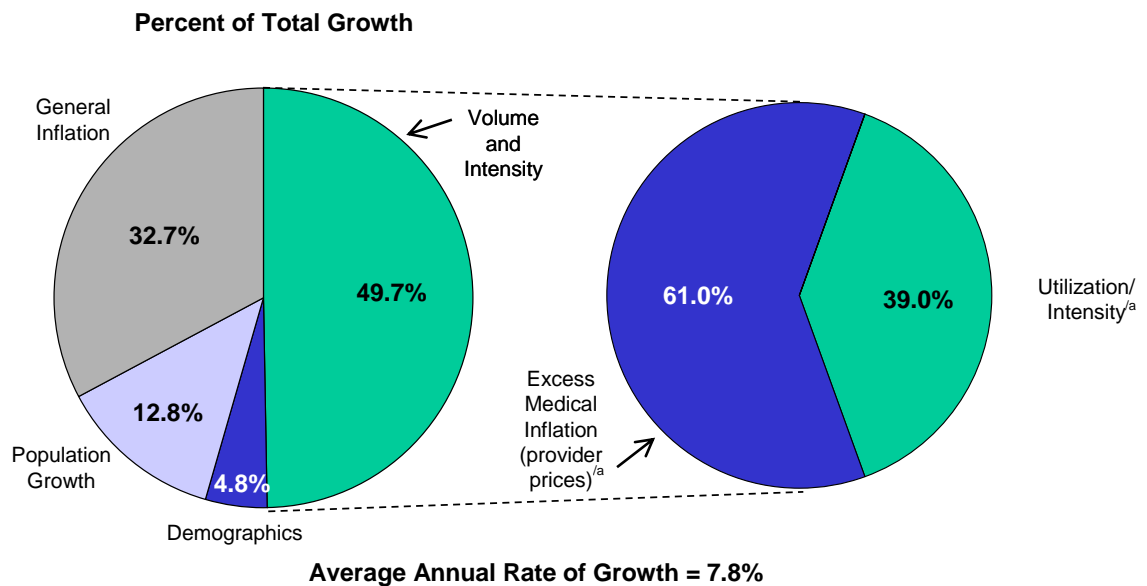
Excess Medical Inflation: Includes spending increases attributed to changes in provider prices for services.

Increased Utilization: Includes changes in utilization of health services.

Service Intensity: This is a proxy measure for the growth in medical technology (e.g., new drug therapies, new surgical procedures, etc.).

In *Figure 2*, we present estimates of the portion of cost growth in United States over the 2001 through 2005 period attributable to these factors. About half of spending growth is attributed to factors that are largely beyond the control of the health care system itself. For example, 33 percent of cost growth was attributed to general price inflation as measured by the CPI. Another 12 percent is attributed to population growth due to improvements in longevity, births and immigration. An additional 5 percent is attributed to underlying changes in the demographic characteristics of the population including the aging of the population. These sources of growth will continue to increase costs indefinitely regardless of the course of medical technology.

Figure 2
Estimated Factors Driving Health Spending Growth in the United States: 2001-2005



a/ Estimated split by excess medical inflation and utilization/intensity is based upon national data. Source: The Lewin Group analysis of data from the Centers for Medicare and Medicaid Services, Office of the Actuary.

The remaining 50 percent of health care cost growth is attributed to factors related to the practice of medicine itself including increased service utilization and increased service intensity. Based upon earlier work by CMS, about 39 percent of the volume and intensity growth is attributed to increased utilization and intensity, which is a euphemism for new medical technology. The remainder is classified as excess medical inflation which represents increases in provider prices for services.⁵⁷

⁵⁷ Critics of these analyses have argued that the method used to measure excess medical inflation probably reflects some of the increase in service intensity due to measurement problems.

The 61 percent of the volume and intensity represents the portion of the growth rate in expenditures for each payer that represents charges. We estimated the portion attributable to volume and intensity by multiplying the growth rate 0.497. We multiplied the portion attributable to volume and intensity by 0.39 to get the share of growth attributable to increases in provider prices. We replaced that portion of the growth rate with the reduced Medicare update for all private payers excluding Medicaid. In the case of Medicaid, as directed by the proposal we replaced the growth in charges with the Medicare update plus one percent.

Cost Savings

We used the Office of the Actuary (OACT), CMS baseline projection of private insurance expenditures as the baseline for private payer and Medicaid spending under current law. To estimate spending for private payers under the policy, we subtract the baseline growth due to provider prices and substitute the Medicare update minus 1 percent as discussed in the methodology section. We estimated the Medicare update by calculating a weighted average of the CBO baseline Medicare projections of the Prospective Payment System (PPS) update and the Physician Medicare Expenditure Index (MEI).⁵⁸ We estimate that under the policy proposal, private payers will save \$62.5 billion over 5 years and \$268.0 billion dollars over 10 years (*Figure 3*). Private rates would have closed 37 percent of the gap with Medicare rates by 2017.

Figure 3
The Savings to Private Payers by Limiting Rate update to a Reduced Medicare update
(in billions)

Year	Projected Private Payer Spending under Current Law ^{a/}	Projected Private Payer Spending under the Policy Proposal	Projected Savings to Private Payers under Policy Proposal	Projected Savings to Private Payers under Policy Proposal (Cum.)
2008	\$1,198.0	\$1,195.6	\$2.4	\$2.4
2009	1,283.3	1,276.6	6.7	9.1
2010	1,368.0	1,355.6	12.4	21.5
2011	1,454.5	1,436.4	18.1	39.6
2012	1,546.2	1,523.3	22.9	62.5
2013	1,645.7	1,616.6	29.1	91.6
2014	1,748.0	1,712.0	36.0	127.6
2015	1,852.0	1,810.2	41.8	169.4
2016	1,959.2	1,912.6	46.6	216.0
2017	\$2,072.7	\$2,020.7	\$52.0	\$268.0

a/ Projections taken from report found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>. This is the combined projection for Private Health Insurance, other Private insurance, and out-of-pocket. Projection for 2017 estimated by holding 2016 growth constant.

⁵⁸ 2006 and 2007 Fact Sheet for CBO's March Baseline:Medicare. Weights were derived in each year using the relative share of Part A and Part B services of total Part A and Part B expenditures...

We estimate spending on Medicaid under the policy by subtracting the baseline growth due to provider prices and substitute the Medicare update plus 1 percent. In *Figure 4* we present the changes to Medicaid spending and the assessment. As presented in *Figure 1*, Medicaid rates are at 89 percent of costs. Under the policy Medicaid rates would reach the Medicare rate at 95 percent of costs in the year 2013. From 2014 to 2017 the update in Medicaid rates would revert to the Medicare update. We estimate that Medicaid spending would increase by \$29.1 billion over 5 years and \$111.5 billion over 10 years.

We estimate the assessment on private health insurers raises \$39.4 billion over 5 years and \$145.6 billion over 10 years. After allocating a portion of the assessment to subsidize the Federal government and states for increases in Medicaid spending, \$10.3 billion over 5 years and \$34.1 billion over 10 years remain unallocated.

Figure 4
Projection of Medicaid Spending and the Assessment for the Reimbursement Pool
(in billions)

Year	Fee-for-Service Medicaid Spending Under Current Law ^{a/}	Fee-for-Service Medicaid Spending under Policy	Increase in Medicaid Spending under Policy	Increase in Medicaid Spending under Policy (Cum)	Assessment on Private Insurance	Cumulative Assessment on Private insurance	Unallocated Assessment after Subsidy to Federal Government and States	Unallocated Assessment after Subsidy to Federal Government and States (cum)
2008	\$143.9	\$145.7	\$1.8	\$1.8	\$3.9	\$3.9	\$2.1	\$2.1
2009	155.3	159.2	3.9	5.7	5.3	9.1	1.4	3.4
2010	168.4	173.7	5.4	11.1	7.4	16.6	2.1	5.5
2011	182.2	189.7	7.5	18.6	10.0	26.6	2.5	8.0
2012	197.0	207.5	10.5	29.1	12.8	39.4	2.3	10.3
2013	213.2	227.0	13.9	42.9	15.3	54.7	1.4	11.8
2014	231.0	246.0	15.0	57.9	18.4	73.1	3.4	15.1
2015	250.4	266.6	16.2	74.2	21.6	94.7	5.4	20.5
2016	271.2	289.0	17.8	91.9	24.3	119.0	6.5	27.1
2017	\$293.7	\$313.3	\$19.6	\$111.5	\$26.6	\$145.6	\$7.0	\$34.1

a/ Projections taken from report found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>. Fee-for-Service share derived from CBO March 2007 baseline.

In *Figure 5* we estimate the disaggregated impact to payers and the affect on national health spending. We estimate savings to out of pocket expenses to be \$2.9 billion over 5 years and \$17.7 billion over 10 years. We estimate the net savings to private insurance after the assessment to be \$20.1 billion over 5 years and \$104.7 billion over 10 years. We estimated the net savings to national health spending to be \$23.1 billion over 5 years and \$122.4 billion over 10 years.

Figure 5
Projected Impact on Payers and National Health Spending of Policy
(in billions)

Year	Savings to Out-of Pocket	Savings to Out-of Pocket (cum)	Savings to Private Insurance ^{a/}	Savings to Private Insurance (Cum)	Savings to National Health Spending	Savings to National Health Spending (Cum)
2008	\$-0.1	\$-0.1	\$-1.3	\$-1.3	-\$1.4	-\$1.4
2009	0.0	-0.1	1.4	0.1	1.4	0.0
2010	0.6	0.5	4.3	4.4	4.9	4.9
2011	1.1	1.6	6.9	11.3	8.1	13.0
2012	1.3	2.9	8.8	20.1	10.1	23.1
2013	1.7	4.6	12.1	32.2	13.8	36.9
2014	2.4	7.1	15.2	47.4	17.6	54.5
2015	3.0	10.1	17.2	64.6	20.2	74.7
2016	3.5	13.6	18.8	83.4	22.3	97.0
2017	\$4.1	\$17.7	\$21.3	\$104.7	\$25.4	\$122.4

a/Includes Private health Insurance and other private insurance

VIII. MEDICARE NEGOTIATION OF PRESCRIPTION DRUG PRICES

In this analysis we evaluate the cost impact of the policy proposal to give the Secretary of Health and Human Services (HHS) the authority to negotiate prices for prescription drug plans (PDPs) and Medicare Advantage prescription drug plans (MA-PDs) for their enrollees. The rationale for this authority is that the Secretary would have greater leverage than the plan's Pharmacy Benefit Managers (PBM) to negotiate greater discounts from drug manufacturers and consequently reduce costs to Medicare.

There are three specific mechanisms for achieving the reduction of drug costs paid by Part D. The first is a mandate that Part D pay the Medicaid rate for prescription drugs for dual eligibles. Newhouse (2007) showed that Medicare is paying a higher rate under Part D for duals than Medicaid paid.⁵⁹ The second is that the Secretary administratively set the price for unique drugs. The third mechanism calls for the Secretary to establish a purchasing collaborative of all public payers. Large employers and multi-employer purchasing groups could participate on a voluntary basis. We estimate the savings to national health spending under this policy to be \$15.8 billion over 5 years and \$43.4 billion over 10 years.

Background

In the Medicare Modernization Act of 2003 (MMA), the language of the statute explicitly forbade the Secretary from interfering in the price negotiations between the drug manufacturers, pharmacies, PDPs, or their sponsors. In addition, the Secretary was forbidden from instituting a formulary or price structure for the reimbursement of Part D drugs. The rationale for this was that the PDPs and MAPDs could do a better job at negotiating discounts with drug manufacturers than the government.

In 2007, H.R. 4, The Medicare Prescription Drug Price Negotiation Act of 2007 was introduced to revise the original provision of MMA that prohibited the Secretary from negotiating drug prices with manufacturers. This bill if passed into law would require the Secretary to negotiate on behalf of Medicare for lower prescription drug prices. The rationale was that the Secretary would be able to negotiate larger cost savings than the PBMs.

Methodology

In order to calculate the effects of the proposal we estimated the cost of prescription drugs for dual eligibles under Medicaid and the Part D expenditure for unique single source drugs. In 2005, dual eligibles represented 48 percent of Medicaid expenditures on prescription drugs.⁶⁰ Based on Medicaid expenditures in 2005 of \$37.3 billion for prescription drugs, we estimate Medicaid spending on duals to have been \$17.9 billion.⁶¹ Using the Office of the Actuary

⁵⁹ Newhouse, J. et al, "Mending the Medicare Prescription Drug Benefit: Improving Consumer Choices and Restructuring Purchasing" The Brookings Institution, April 2007

⁶⁰ Crowley, J., et al, "State Medicaid Outpatient Prescription Drug Policies: Findings from a National Survey, 2005 update", Kaiser Commission on Medicaid and the Uninsured, October 2005.

⁶¹ Based on Historical estimates of Medicaid prescription drug spending by the Office of the Actuary, CMS. Report found at:

http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage

(OACT), CMS projection for prescription drug expenditures, we estimated spending on dual eligibles using Medicaid rates would be \$21.5 billion in 2008. Based on data estimates from OACT, spending on dual eligibles in 2008 by Part D is expected to be \$25.0 billion dollars.⁶²

As with all Part D drugs, the cost of the drug is determined by negotiations between the PBM and the drug manufacturers. PBMs are able to negotiate discounts via formulary arrangements and competition between manufacturers for similar drugs. In the case of single source unique drugs, PBMs have little leverage to extract price concessions. Under this circumstance, we assume Part D would receive a smaller discount from the drug manufacturers for this category of drug.

Currently CMS pays 106 percent of the Average Sales Price (ASP) for Outpatient Part B drugs. The ASP is assumed to be the lowest price after all discounts. This pricing approach for accruing discounts would not be effective for this category. The manufacturers have little incentive to offer discounts. Prior to 2005, CMS paid drug manufactures 85 percent of the Average Wholesale Price for Outpatient Part B drugs. The rationale was that this represented the typical discount a manufacturer would give to its best customer.⁶³ Using this logic as an approach for defining a reasonable discount, we applied a 15 percent discount to the share of Part D drug expenditures attributable to single source unique drugs.

The third mechanism of the proposal to give the Secretary authority to form collaborative purchasing groups would not produce net savings. The buying collaborative, by achieving discounts through volume would weaken the effectiveness of the formulary as a source of discount. It is not clear that purchasing by volume would achieve greater savings than those currently derived from the purchasing arrangements defined by formularies. In two communications CBO stated that it was unlikely that the Secretary could negotiate superior discounts over the current mechanism for negotiating prescription drug prices.⁶⁴ In addition, Newhouse recommended preserving the fundamental attributes of the programs cost saving mechanism.

Also, the unique aspect of this proposal of allowing large private and public employers to participate would undermine the current mechanisms by which they achieve discounts. As is the case in Medicare under Part D, large employers use formularies and competition to negotiate discounts. This source of discount would be weakened. In addition, any savings that would be achieved would produce an additional cost shift onto small employers, non-group, the uninsured, and Medicaid. This would have the result of shifting savings to the payers that are already receiving the greater discounts.

Cost Savings

We projected the savings to Part D using Medicaid rates for dual eligibles drug expenditures from 2008 to 2017 using the CBO projected growth in Part D expenditures. We estimated

⁶² This is based on 6.2 million duals at a cost of \$3997.0 per year in 2008.

⁶³ Federal Register: August 20, 2003 (Volume 68, Number 161), pps. 50427-50452.

⁶⁴ Letter from Douglas Holtz-Eakin, Director, CBO, to Honorable Ron Wyden, United States Senate, March 3, 2004. Letter from Donald B. Marron, Acting Director, CBO, to Honorable John D. Dingell, United States House of Representatives, January 10, 2007.

savings to Part D to be \$20.9 billion over 5 years and \$57.5 billion over 10 years (*Figure 1*). After applying the 15 percent discount to the cost of single-source unique drugs, we estimated an additional savings to Part D of \$5.4 billion over 5 years and \$14.9 billion over ten years (*Figure 2*).

Figure 1
Savings to Part D by using Medicaid Drug Pricing for Dual Eligibles
(in billions)

Year	Projected Drug spending on Dual Eligibles under Current Law ^{a/}	Projected Drug spending on Dual Eligibles under Policy ^{b/}	Projected Savings to Part D under Policy	Projected Savings to Part D under Policy (Cum.)
2008	\$24.8	\$21.5	\$3.3	\$3.3
2009	28.3	24.5	3.8	7.1
2010	31.1	26.9	4.2	11.2
2011	37.1	32.2	5.0	16.2
2012	34.9	30.2	4.7	20.9
2013	42.3	36.6	5.6	26.5
2014	47.3	41.0	6.3	32.8
2015	52.9	45.9	7.1	39.9
2016	64.6	56.0	8.6	48.5
2017	\$66.9	\$58.0	\$8.9	\$57.5

a/This number based on 2005 estimate of prescription drug spending on Medicaid. Report found at: http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. Used growth rate from 2007 Fact Sheet for CBO's March Baseline:Medicare

Although the policy does accrue a savings to Medicare, this savings is produced by a rate cut to drug manufacturers. We assume that manufacturers would pass some of that loss in revenue to other drug buyers in the form of increased prices. Based on our cost shift research, we assumed 40 percent of this saving would be shifted as a cost to the other payers.⁶⁵ We estimate a cost to households of \$2.7 billion over 5 years and \$7.5 billion over 10 years. We estimate the cost to State and Local governments to be \$1.3 billion over 5 years and \$3.5 billion over ten years. The Federal government accrues a net savings of \$26.0 billion over 5 years and \$71.5 billion over ten years. We estimated the cost to private employers to be \$6.2 billion and \$17.1 billion over 10 years.

⁶⁵ Sheils, J., Claxton, G., "Potential Cost Shifting Under Proposed Funding Reductions for Medicare and Medicaid: The Budget Reconciliation Act of 1995," (Report to the National Coalition on Health Care), The Lewin Group, December 6, 1995

Figure 2
Savings to Part D by Setting the Price for Single-Source and Unique Drugs Administratively
(in billions)

Year	Projected Drug spending on Unique Drugs under Current Law ^{a/}	Projected Drug spending on Unique Drugs under Policy	Projected Savings to Part D under Policy	Projected Savings to Part D under Policy (Cum.)
2008	\$5.7	\$4.9	\$0.9	\$0.9
2009	6.5	5.6	1.0	1.8
2010	7.2	6.1	1.1	2.9
2011	8.6	7.3	1.3	4.2
2012	8.1	6.9	1.2	5.4
2013	9.8	8.3	1.5	6.9
2014	11.0	9.3	1.6	8.5
2015	12.3	10.4	1.8	10.4
2016	14.9	12.7	2.2	12.6
2017	\$15.5	\$13.2	\$2.3	\$14.9

a/ Based on 11% of all Part D expenditures. 2007 CBO Medicare Baseline.

Figure 3
Impact on Payers and National Health Spending of Administrative Discount of Unique Drugs and using Medicaid Rates for Dual Eligible Drug Spending
(in billions)

Year	Cost to Households	Cost to Households (Cum.)	Cost to State and Local Govt.	Cost to State and Local Govt. (Cum.)	Savings to Federal Govt.	Savings to Federal Govt. (Cum.)	Cost to Private Empl	Cost to Private Empl (Cum.)	Savings to National Health Spending	Savings to National Health Spending (Cum)
2008	\$0.4	\$0.4	\$0.2	\$0.2	\$4.1	\$4.1	\$1.0	\$1.0	\$2.5	\$2.5
2009	0.5	0.9	0.2	0.4	4.7	8.8	1.1	2.1	2.9	5.4
2010	0.5	1.5	0.3	0.7	5.2	14.0	1.2	3.3	3.1	8.5
2011	0.6	2.1	0.3	1.0	6.2	20.2	1.5	4.8	3.7	12.2
2012	0.6	2.7	0.3	1.3	5.8	26.0	1.4	6.2	3.5	15.8
2013	0.7	3.5	0.3	1.6	7.0	33.0	1.7	7.9	4.3	20.0
2014	0.8	4.3	0.4	2.0	7.9	40.9	1.9	9.8	4.8	24.8
2015	0.9	5.2	0.4	2.4	8.8	49.7	2.1	11.9	5.3	30.2
2016	1.1	6.4	0.5	2.9	10.7	60.4	2.6	14.4	6.5	36.7
2017	\$1.2	\$7.5	\$0.5	\$3.5	\$11.1	\$71.5	\$2.7	\$17.1	\$6.8	\$43.4

Source: Lewin Group Sources

IX. MEDICARE PAY-FOR-PERFORMANCE PROGRAM

In this analysis we estimate the cost impacts of a proposal to expand the Center for Medicare and Medicaid Services (CMS)/Premier Hospital Quality Incentive Demonstration (HQID) pay for performance program to all acute care hospitals.⁶⁶ Under the proposal, the program would apply to the five conditions covered under the demonstration. The conditions are Acute myocardial infarction (AMI), Isolated coronary artery bypass graft (CABG), Heart Failure (HF), community acquired pneumonia (CAP), and Hip and knee replacement surgery (Hip/Knee).

The purpose of the HQID demonstration was to promote quality improvement in acute care hospitals by expanding the public quality reporting system. This expansion included financial incentives for participating acute care hospitals that demonstrated higher quality in the acute care conditions listed above. Lindenauer, P. et al (2007) showed overall improvement in the quality for the hospitals participating in the public reporting system.⁶⁷ The subset of hospitals receiving financial incentives showed slighter greater rates of improvement. Premier showed that for those hospitals receiving financial awards, the quality improvements resulted in savings derived from shorter lengths of stay and reduced re-admission rates.

Under this proposal, the demonstration would be expanded to all acute care hospitals and the financial award would be modified extending the bonus to hospitals in the 75th percentile and eliminating the payment penalty for hospitals in the bottom two deciles of the performance distribution. The policy would reward hospitals in the 90th percentile a 2 percent bonus on their Medicare payment for the clinical area. Hospitals that achieve the 80th or 75th percentile depending on their prior year performance would receive a 1 percent bonus. Eligibility for all bonuses relies on attaining a minimum level of performance in the two years prior to the payment year. Funding for the bonuses will be derived by reducing the total payment to all hospitals by the total projected bonus payments. We estimate the savings to national health spending to be \$14.0 billion over 5 years and \$34.0 billion over ten years.

Background

In 2002 the American Hospital Association (AHA), the Federation of American Hospitals, and the Association of American Colleges, formed the Hospital Quality Alliance (HQA). The purpose of the HQA was to create a mechanism for publicly reporting quality measures for acute care hospitals. All acute care hospitals were asked to participate in the program and HQA achieved a 98 percent participation rate.⁶⁸ In 2003 the CMS/Premier Hospital Quality Incentive Demonstration was initiated. The demonstration initially enrolled 276 hospitals to participate in the program. The demonstration developed quality scores for the five conditions discussed above and awarded participating hospitals with financial awards for achieving certain quality thresholds. Hospitals performing at or above the 90th percentile received a 2 percent bonus in the clinical area. Hospitals performing at or above the 80th percentile received

⁶⁶ Premier is a nationwide association of not-for-profit hospitals.

⁶⁷ Lindenauer, P., "Public Reporting and Pay for Performance in Hospital Quality Improvement" *New England Journal of Medicine*, 356;5, February 1, 2007.

⁶⁸ CMS linked receiving the full Medicare payment to participating in the program.

a 1 percent bonus. Hospitals performing at or below the 20th percentile received a 1 percent penalty. Hospitals performing in the bottom decile received a 2 percent penalty.

Methodology

To establish the baseline quality scores for each hospital in each clinical area we use the HQA data archive. This database has the quality scores for each quality measure for Heart Failure, AMI, CAP, and surgical infection prevention (applied to Hip/Knee) for each hospital reporting to the HQA database. We create a composite quality score for each clinical area at a hospital by calculating the average score in each clinical area weighted by the number of patients treated for the measure. The baseline costs for each procedure were calculated using the 2005 Medicare Provider Analysis and Review (MEDPAR) File. We calculated the costs for each clinical area by summarizing the cost data using the HQID definitions for the conditions.⁶⁹

To calculate the savings associated with the expansion of the demonstration, we use the findings in Lindenauer (2007) to estimate improvements in quality associated with the financial awards. Lindenauer found the annual improvement for AMI to be 2.5 percent, 3.0 percent for Heart Failure, and 2.3 percent for CAP. We used the rate of improvement for AMI as the rate of improvement for CABG. Since Lindenauer did not report an annual improvement for Hip/Knee we estimated an improvement rate as follows. We used the annual improvement reported by Premier for Hip/Knee in demonstration hospitals and subtracted the improvement rate for Hip/Knee found in the HQA data for non-demonstration hospitals. Our net estimate of annual improvement for Hip/Knee is 3.0 percent annual improvement.⁷⁰

The proposal provides greater incentives for hospitals by lowering the quality threshold for an award to the 75th percentile but it also reduces the incentive for the poorest hospitals to improve by eliminating the payment reduction for the poor performers. We assume these two effects offset and the rate of improvement would be the same as the improvement observed under the demonstration.

Cost Savings

We project the quality score from 2008 to 2017 until the quality score is equal to 100 using the improvement rate for each clinical condition described in the methodology section. We projected savings as follows. We used savings, reported by Premier, associated with quality score thresholds for Heart Bypass Surgery and CAP.⁷¹ We used the savings associated with quality improvement thresholds for Heart bypass surgery to estimate savings for CABG, Heart

⁶⁹ Report found at: <http://www.premierinc.com/quality-safety/tools-services/p4p/hqi/hqid-measure-spec100106.pdf>

⁷⁰ Premier, "Centers for Medicare and Medicaid Services (CMS)/ Premier Hospital Quality Incentive Demonstration Project", April 2006. Hospital Quality Alliance (HQA) data found at: http://www.cms.hhs.gov/HospitalQualityInits/25_HospitalCompare.asp#TopOfPage

⁷¹ "Performance Pays: Reliable Care Costs Less and Saves Lives", Press Conference Webcast, Orlando FL, June 2006.

Failure, and AMI. We estimated savings thresholds for Hip/Knee based on reductions in re-admission costs.⁷²

We estimated the savings thresholds for CAP to be 9 percent as a hospital exceeds a score of 50 percent and 11 percent as a hospital exceeds a score of 75 percent. For Heart bypass surgery, we estimate an annual cost savings of 16 percent as a hospital exceeds a score of 50 percent and 14 percent as a hospital exceeds a score of 75 percent. We estimate savings of 4 percent at both the 50 percent and 75 percent thresholds. The hospital cost for each procedure is grown by the CBO growth rate for inpatient services before any savings for crossing a quality threshold are applied.⁷³

We estimate the savings for each procedure, total savings to Medicare, and national health spending in *Figure 1*. We estimate total Medicare savings would be \$11.2 billion over 5 years and 27.2 billion dollars over 10 years. Pay for performance accrues savings by reducing re-admissions and length of stay for the five clinical areas. Beneficiaries and payer groups providing wrap-around coverage to Medicare beneficiaries would accrue additional savings. We estimate the combined savings to Medicare and other payers accrues a savings to national health spending of \$14.0 billion over 5 years and \$34.0 billion over 10 years.

We estimate savings to the payer groups (*Figure 2*) as follows. We estimate the savings to out-of-pocket expenses at \$1.2 billion over 5 years and \$3.0 billion over 10 years. We estimate the savings to household insurance premiums to be \$0.5 billion over 5 years and \$1.1 billion over 10 years. We estimated the savings to private employers to be \$0.7 billion over 5 years and \$1.7 billion over 10 years. We estimated the combined savings of the Medicare program and reduction in Federal retiree expenses to the Federal government to be \$11.3 billion over 5 years and \$27.4 billion the 10 year period. We estimate the savings to State and Local governments to be \$0.3 billion over 5 years and \$0.75 billion over 10 years.

⁷² Estimates derived from Medicare 2003/2004 5 percent inpatient hospital files. Re-admission rate changes were assumed to be the same in 2005/2006.

⁷³ Growth rate taken from CBO 2007 Medicare Baseline.

Figure 1
Projected Savings to Medicare and National Health Spending from Implementing Pay for Performance for all Acute Care Hospitals for the Five Clinical Areas
(in billions) ^{a/}

Year	Projected Savings under Policy from AMI In Year	Projected Savings under Policy from CABG In Year	Projected Savings under Policy from Heart Failure In Year	Projected Savings under Policy from CAP In Year	Projected Savings under Policy from Hip/Knee In Year	Total Projected Savings to Medicare In Year	Total Projected Savings to Medicare (Cum)	Savings to National Health Spending ^{b/}	Savings to National Health Spending (Cum)
2008	\$0.7	\$0.4	\$0.8	\$0.0	\$0.0	\$1.9	\$1.9	\$2.4	\$2.4
2009	0.7	0.4	0.8	0.0	0.0	2.1	4.0	2.6	5.0
2010	0.8	0.4	0.9	0.1	0.1	2.2	6.2	2.8	7.8
2011	0.8	0.5	1.0	0.1	0.1	2.4	8.6	3.0	10.8
2012	0.8	0.5	1.0	0.1	0.1	2.6	11.2	3.2	14.0
2013	0.9	0.5	1.1	0.1	0.1	2.8	13.9	3.4	17.4
2014	1.0	0.5	1.2	0.1	0.2	3.0	16.9	3.7	21.1
2015	1.0	0.6	1.3	0.1	0.2	3.2	20.1	4.0	25.1
2016	1.1	0.6	1.4	0.1	0.2	3.4	23.5	4.3	29.4
2017	1.2	\$0.7	\$1.5	\$0.1	\$0.2	\$3.7	\$27.2	\$4.6	\$34.0

a/Baseline procedure costs estimated from 2005 MEDPAR file.

b/Total of Savings across Payer Groups in Figure 2.

Source:Lewin Group Sources

Figure 2
Distribution of Projected Savings to Payer Groups from Implementing Pay for Performance in the Medicare Program
(in billions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer Savings (Cum.)	Federal Savings ^{a/}	Federal Savings (cum.)	State and Local	State and Local (Cum.)
2008	\$0.21	\$0.21	\$0.08	\$0.08	\$0.12	\$0.12	\$1.92	\$1.92	\$0.05	\$0.05
2009	0.23	0.44	0.08	0.17	0.12	0.24	2.09	4.01	0.06	0.11
2010	0.25	0.68	0.09	0.26	0.13	0.37	2.26	6.27	0.06	0.17
2011	0.26	0.95	0.10	0.36	0.14	0.52	2.43	8.69	0.07	0.23
2012	0.28	1.23	0.11	0.47	0.16	0.67	2.60	11.30	0.07	0.31
2013	0.30	1.53	0.11	0.58	0.16	0.84	2.79	14.08	0.07	0.38
2014	0.33	1.86	0.13	0.71	0.19	1.02	2.99	17.08	0.09	0.46
2015	0.35	2.21	0.13	0.84	0.19	1.22	3.22	20.29	0.09	0.55
2016	0.38	2.59	0.14	0.99	0.21	1.43	3.45	23.75	0.09	0.65
2017	\$0.40	\$2.99	\$0.15	\$1.14	\$0.22	\$1.65	\$3.69	\$27.44	\$0.10	\$0.75

a/Savings associated with reductions in Federal Retirees and Medicare savings.

Source: Lewin Group Estimates.

X. MEDICARE AREA-SPECIFIC SPENDING GROWTH LIMITS (ALTERNATIVE METHODOLOGY)

In 1983, Medicare's policy toward provider payment shifted from a system based on retrospective cost reimbursement to an approach that based payment on pre-defined units of service at a pre-defined price. Physician payment is based on a fee schedule which defines a maximum payment for all categories of fee-for-services services. Hospitals, Home Health agencies, Outpatient services, and Hospice, and Skilled Nursing facilities are paid based on a prospective service system (PPS). Payment for each provider type is paid based upon a unit of service specific to each provider type, e.g relative value units (RVU) in the case of physician. The reimbursement for each unit is determined by the costs of specific services and inputs to produce the services.

This approach to payment was put in place to control increasing costs to the program and promote greater equity in provider reimbursement. However, in a system where the prices per unit of service are pre-determined, there is an incentive to provide increasingly more services and consequently drive up costs. The intent of this proposal is to accrue savings to the Medicare program by limiting the annual reimbursement rate update in areas of higher cost. In a comparison of the current update system to payment under a geographically adjusted rate, we estimated the savings to the Medicare program to be \$71.8 billion over 5 years and \$262.9 billion over 10 years. We estimated savings to national health spending to be \$43.1 billion over 5 years and \$157.8 billion over 10 years.

Background

The Physician Fee Schedule (PFS) and the Prospective Payment system both rely on a pre-defined price for a pre-defined unit of medical service. Payment to physicians and other Part B providers is based on the PFS. Medicare shifted payment for Hospital services to PPS in 1983 and since 2000 has moved Home Health agencies, Outpatient services, Hospice, and Skilled Nursing facilities to PPS. Although, the calculation of the final payment for each provider type varies, the basic approach is the same. A base rate tied to a market basket for the particular provider services is adjusted for local wage and case mix conditions.

The rate is updated annually to incorporate changes in costs reflected in changes in the provider specific market baskets as well as legislative and other policy concerns. The update is calculated and implemented nationally. In the interest of budgetary constraint, Congress placed legislative limits on updates to the PFS with the sustainable growth rate (SGR) system. The SGR links increases in the PFS to changes in GDP and has in the past authorized cuts in physician fees. Congress has circumvented the SGR and prevented the implementation of cuts.

One of the objectives of the PFS and the PPS was to reward efficient providers by providing a payment roughly based on the average costs of providing the service. High cost providers lose under the system while lower cost and presumably more efficient providers win under the system. The update methodology is applied nationally and rewards providers uniformly whether they are in a high cost area relative to the national average or a lower cost area.

Policy Proposal and Rationale

The policy proposal is to change the methodology for calculating the way the annual update to the PFS and the PPS systems are administered. Currently the update is applied on a national basis. Although, the base payments take into account geographic variation in the cost of inputs, the update is based on national measures of changes to the service specific market basket. The update thus has a uniform effect on higher and lower cost areas. This proposal would recalibrate the update based on the relative costliness of the region to the nation. Providers in regions below the combined Part A and Part B national median per capita spending would receive the full update. Providers in regions above the median but below the 75th percentile would receive a discounted update. Providers above the 75th percentile would receive no update in their rate.

Cost Savings

To perform the analysis, we compare aggregate Medicare spending on physicians and providers paid under PPS estimating payment using the national update and a geographically adjusted update. The geographic unit is based on regions we defined as metropolitan statistical areas (MSA) and non-MSA. We assigned counties to MSAs using the MSA definitions defined by CMS for the inpatient PPS.⁷⁴ Non-MSA's were defined as all other counties within the state that are not in an MSA. We projected payments under the two payment scenarios for 2008 to 2017 period.

We used a projection of aggregate Part A and Part B spending by county in 2004 to create the distribution for the 2008 quartile thresholds.⁷⁵ To adjust for primary and preventive services we excluded a portion of physician spending based on an estimate of time available to preventive care in specialties performing primary care functions.⁷⁶ To account for provider behavioral response to a reduction in the update, we applied a 30% offset to the update reduction.⁷⁷ The quartile thresholds for each subsequent year in the projection are recalibrated based on the current year thresholds adjusted by the weighted average of the Physician Medicare Economic Index (MEI) and the PPS update factor. We estimate Physician and PPS spending by applying the update adjusted by the quartile threshold rules.⁷⁸

In *Figure 1*, we estimate the savings to the Medicare program over the 10 year time horizon. In 2008, the projected savings to Medicare is \$6.2 billion dollars. We estimate savings to Medicare over 5 years to be \$71.8 billion and \$262.9 billion over 10 years. This savings to Medicare however, does represent a net loss to providers which research has shown would initiate some form of cost shift of that loss to other payers. There are two separate studies indicating that about half of hospital payment shortfalls are passed-on to private payers in the form of higher

⁷⁴ CMS definitions available at <http://www.cms.hhs.gov/AcuteInpatientPPS/FFD/list.asp#TopOfPage>.

⁷⁵ CMS report available at <http://www.cms.hhs.gov/MedicareAdvgtgSpecRateStats/Downloads/ffs-data-2004.pdf>.

⁷⁶ <http://www.dukemednews.duke.edu/news/article.php?id=8839>

⁷⁷ <http://www.cms.hhs.gov/ReportsTrustFunds/downloads/TechnicalPanelReport2000.pdf>

⁷⁸ <http://www.cbo.gov/budget/factsheets/2007b/medicare.pdf>.

charges.⁷⁹ However, two other studies showed considerably less evidence of hospital cost-shifting, although they did not rule out a partial cost-shift.⁸⁰ One study of physician pricing by Thomas Rice et al., showed that for each one percent reduction in physician payments under public programs, private sector prices increased by 0.2 percent.⁸¹ Our own analysis of hospital data indicated that about 40 percent of the increase in hospital payment shortfalls (i.e., revenues minus costs) in public programs were passed-on to private-payers in the form of the cost shift during the years studied.⁸²

After adjusting for the cost shift to other payers, we estimate the savings to national health spending to be \$43.1 billion over 5 years and \$157.8 billion over the 10 years. In *Figure 2* we estimate the costs to other payers. We estimate the largest share of the cost is shifted to Private Employers at a cost of \$16.9 billion over 5 years and \$62.1 billion over 10 years. We estimate the cost to households to be \$7.5 billion over 5 years and \$27.3 billion over 10 years. We estimate the cost to the Federal government to be \$.9 billion over 5 years and \$3.2 billion over 10 years. We estimate the cost to State and Local governments to be \$3.4 billion over 5 years and \$12.6 billion over 10 years.

⁷⁹ Dranove, David, "Pricing by Non-Profit Institutions: The Case of Hospital Cost Shifting," *Journal of Health Economics*, Vol. 7, No. 1 (March 1998); and Sloan, Frank and Becker, Edward, "Cross-Subsidies and Payment for Hospital Care," *Journal of Health Politics, Policy and Law*, vol. 8., No. 4 (Winter 1984)

⁸⁰ Zuckerman, Stephen, "Commercial Insurers and All-Payer Regulation," *Journal of Health Economics*, Vol. 6. No. 2 (September 1987); and Hadley, Jack and Feder, Judy, "Hospital Cost Shifting and Care for the Uninsured." *Health Affairs*, Vol. 4 No. 3 (Fall 1985).

⁸¹ Rice, Thomas, et al., "Physician Response to Medicare Payment Reductions: Impacts on public and Private Sectors," Robert Wood Johnson Grant No. 20038, September 1994.

⁸² Sheils, J., Claxton, G., "Potential Cost Shifting Under Proposed Funding Reductions for Medicare and Medicaid: The Budget Reconciliation Act of 1995," (Report to the National Coalition on Health Care), The Lewin Group, December 6, 1995

Figure 1
Effects of PFS and PPS Geographically Adjusted Annual Update
on Medicare and National Health Spending
(in billions)

Year	Spending with full update ^{a/}	Spending with adjusted update	Savings to Medicare	Savings to Medicare (Cum)	Savings to National Health Spending	Savings to National Health Spending (Cum.)
2008	\$313.1	\$306.9	\$6.2	\$6.2	\$3.7	\$3.7
2009	327.8	317.7	10.2	16.4	6.1	9.8
2010	343.3	329.2	14.1	30.5	8.5	18.3
2011	362.2	343.9	18.3	48.8	11.0	29.3
2012	382.1	359.1	23.0	71.8	13.8	43.1
2013	403.9	376.0	27.9	99.7	16.8	59.8
2014	426.0	393.1	32.9	132.6	19.7	79.6
2015	450.0	412.0	38.0	170.7	22.8	102.4
2016	475.4	432.0	43.4	214.0	26.0	128.4
2017	\$501.6	\$452.7	\$48.9	\$262.9	\$29.3	\$157.8

a/ Medicare spending calculated using projected 2004 county Total Part A and Part B reimbursements. These can be found at http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/05_FFS_Data.asp#TopOfPage. Growth in Part A and Part B enrollment projections were taken from the Fact Sheet for CBO's March 2007 Baseline:Medicare.

Figure 2
Cost Impact to Payers
(in billions)

Year	Cost to House-holds	Cost to House-Holds (Cum.)	Cost to State and Local Govt.	Cost to State and Local Govt. (Cum.)	Cost to Federal Govt.	Cost to Federal Govt. (Cum.)	Cost to Private Empl	Cost to Private Empl (Cum.)
2008	\$0.6	\$0.6	\$0.3	\$0.3	\$0.1	\$0.1	\$1.5	\$1.5
2009	1.1	1.7	0.5	0.8	0.1	0.2	2.4	3.9
2010	1.5	3.2	0.7	1.5	0.2	0.4	3.3	7.2
2011	1.9	5.1	0.9	2.3	0.2	0.6	4.3	11.5
2012	2.4	7.5	1.1	3.4	0.3	0.9	5.4	16.9
2013	2.9	10.4	1.3	4.8	0.3	1.2	6.6	23.5
2014	3.4	13.8	1.6	6.4	0.4	1.6	7.8	31.3
2015	4.0	17.7	1.8	8.2	0.5	2.0	9.0	40.3
2016	4.5	22.3	2.1	10.3	0.5	2.6	10.2	50.5
2017	\$5.1	\$27.3	\$2.3	\$12.6	\$0.6	\$3.2	\$11.5	\$62.1

Source: Lewin Group Estimates.

XI. COMPETITIVE BIDDING AMONG MEDICARE PLANS

The purpose of this analysis is to estimate the cost impacts of the implementation of Competitive Bidding among Medicare Advantage Plans. Under the current system, the payment methodology defined by the Medicare Modernization Act of 2003 (MMA) sets rates based on the underlying fee-for-service (FFS) costs in the counties and other provisions to promote plan participation. This payment mechanism currently pays plans 12.4 percent over the comparable cost to Medicare if the enrollee were in traditional Medicare.

The intent of this proposal is to accrue savings to Medicare by setting the rates using a competitive bidding mechanism. This would be implemented by setting the payment county benchmark rate to the lower of the Medicare Advantage average bid in a region or the National average per-beneficiary cost of providing traditional Medicare. In addition, enrollees in traditional Medicare would pay a premium if the average per capita costs were greater than the benchmark rate. The premium would be equal to the difference between the average per capita costs in the county and the benchmark rate.

We estimate savings to the Medicare program to be \$114.3 billion over 5 years and \$282.2 billion over 10 years. We estimated the savings to national health spending over 5 years to be \$41.7 billion and \$104.2 billion over 10 years. Since beneficiaries will likely face higher premiums and reduced benefits, we estimate the cost to households to be \$72.6 billion over 5 years and \$178.3 billion over 10 years.

Background and Methodology

Currently, the reimbursement of Medicare Advantage plans is determined by the relationship between the plan's bid and the benchmark rate. The plan's bid as submitted to Medicare represents the plan's expected cost to provide the benefit in a county. The benchmark is calculated by taking the average of the plan payment based on the payment year's rate book rates weighted by the projected enrollment in the plans for a county. If the plan's bid is below the benchmark, the plan receives the bid plus 75% of the difference between the bid and the benchmark or 'savings'. The plan is required to use this 'savings' for additional benefits or premium reduction.

This proposal would modify the current payment methodology and add an additional premium to traditional Medicare. The Medicare Advantage payment methodology would change by basing the benchmark on plans' bids rather than the ratebook. If the average bid in a region were higher than the United States Per Capita Costs (USPCC) than the benchmark rate for the region would be set to the USPCC. If the average bid is lower than the USPCC the benchmark rate is set to the average bid for the region. In addition, if a plans bid were below the benchmark, the federal government would keep all of the savings. The rationale for this change is that it links the payment rate to the actual costs the plans have projected for providing

the benefit. Since 95 percent of plans' bids have been below the benchmark, moving the benchmark to the average bid would accrue savings to the Medicare program.⁸³

To provide an incentive to the beneficiary to select the most efficient option for receiving Medicare benefits, the beneficiaries in traditional Medicare will pay a premium if the average per capita costs (AAPCC) in the county are higher than the benchmark. The premium would equal the difference between the AAPCC and the benchmark. The additional premium on traditional Medicare would induce some FFS enrollment to join Medicare Advantage plans in their region. Stombom (2002) found the elasticity in the over 45 age group to premium increases to be -1.38.⁸⁴ We used this elasticity to shift enrollment from FFS to Medicare Advantage based on the differential between the additional premium and the average Part B premium.⁸⁵

When the benchmark is above the AAPCC and below the average regional bid the beneficiary will have to pay a higher premium on average to remain in MA. If the difference between the average regional bid and the benchmark is greater than the average Part B premium, MA enrollees will have an incentive to leave MA and enroll in traditional Medicare. Based on the differential between the average regional bid and the benchmark we used Stombom's elasticity to estimate the number of MA enrollees that would switch to FFS. We estimate the net effect of enrollment changes due to the policy in *Figure 1*. In 2008 we estimate a net shift of 7.1 million people from FFS to MA due to the policy.

Since lowering the benchmark reduces the differential between the benchmark rate and the plan's bid, plans will have fewer funds to allocate to premium reduction or a richer benefit. To the degree beneficiaries re-purchase lost benefits, there would be a cost to households. To the extent that beneficiaries elect to forgo re-purchasing lost benefits, there would be a savings accrued to national health spending. Research has shown that in the event of a loss of coverage, utilization declines by 40% to 45%.⁸⁶ Thus we have allocated 60% of the savings to Medicare to an increase to the cost to households and 40% to savings accrued to national health spending.

⁸³ Medicare Payment Advisory Commission. Report to the Congress: Increasing the Value of Medicare, June 2006, Chapter 9.

⁸⁴ Stombom, B., Buchmueller, T., Feldstein, P. "Switching Costs, Price Sensitivity and Health Plan Choice," *Journal of Health Economics*, 21 (2002), 89-116.

⁸⁵ The average Part B premium was based on the premium for particular income thresholds found in: *Medicare and You*, 2007, Centers for Medicare and Medicaid Services. The income distribution of the elderly found at: *Income and Poverty of older Americans*, Public Policy Institute, 2004.

⁸⁶ Lurie N, Ward NB, Shapiro MF, Gallego C, Vaghaiwalla R, Brook RH. 1986. Termination of Medi-Cal benefits. A follow-up study one year later. *N Engl J Med* 1986 May 8;314(19):1266-8

Figure 1
FFS Enrollment and MA Enrollment under Current Law and Policy Proposal
(in millions)

Year	FFS Enrollment under Current Law ^{a/}	MA Enrollment under Policy ^{a/}	FFS Enrollment under Policy ^{b/}	MA Enrollment under Policy ^{b/}
2008	36.1	8.7	29.0	15.8
2009	35.9	9.7	28.8	16.8
2010	36.0	10.4	28.8	17.6
2011	36.3	11.0	29.1	18.3
2012	37.0	11.5	29.6	18.9
2013	38.0	11.9	30.3	19.6
2014	39.0	12.2	31.0	20.2
2015	40.1	12.5	31.9	20.8
2016	41.2	12.9	32.7	21.4
2017	42.4	13.2	33.6	22.0

a/CBO 2007 Medicare Baseline

b/Lewin Group Sources

Cost Savings

To perform the analysis, we project the combined MA and FFS payments under current law and the combined MA and FFS payment under the policy over the 2008-2017 period.

In 2008, we estimate the savings to Medicare to be \$19.0 billion. We estimate the savings to Medicare over 5 years to be \$114.3 billion and \$282.5 billion over 10 years. We estimate the increased cost to households to be \$72.6 billion over 5 years and \$178.3 billion over 10 years. We estimate the savings to national health spending to be \$41.7 billion over 5 years and \$104.2 billion over 10 years (*Figure 2*).

Figure 2
Effects of Competitive Bidding Among Medicare Plans
(in billions)

Year	Payment Under Current Law ^{a/}	Payment Under Policy ^{b/}	Projected Savings to Medicare	Projected Savings to Medicare (Cum.)	Projected Costs to Households	Projected Costs to Households (Cum.)	Projected Savings to National Health Spending	Projected Savings to National Health Spending (Cum.)
2008	\$392.7	\$373.6	\$19.0	\$19.0	\$12.2	\$12.2	\$6.8	\$6.8
2009	419.3	398.3	21.0	40.0	13.4	25.6	7.6	14.5
2010	448.1	425.3	22.8	62.8	14.5	40.0	8.3	22.8
2011	479.4	454.7	24.7	87.5	15.6	55.7	9.1	31.9
2012	515.3	488.5	26.7	114.3	16.9	72.6	9.8	41.7
2013	555.3	526.4	28.9	143.2	18.2	90.8	10.7	52.4
2014	598.0	566.9	31.1	174.3	19.6	110.4	11.5	63.9
2015	643.9	610.5	33.5	207.7	21.0	131.4	12.4	76.3
2016	693.4	657.3	36.0	243.7	22.6	154.0	13.4	89.7
2017	\$746.4	\$707.7	\$38.7	\$282.5	\$24.3	\$178.3	\$14.5	\$104.2

a. MMA benchmark rates can be found at

<http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/RSD/list.asp#TopOfPage>

b. Policy benchmark calculated using the lower of the regional average bid and the 2008 USPPC Costs can be found at <http://www.cms.hhs.gov/MedicareAdvtgSpecRateStats/RSD/list.asp#TopOfPage>. MA enrollment projections were taken from the Fact Sheet for CBO's March 2007 Baseline: Medicare.

Source: Lewin Group Estimates.

XII. CENTER FOR MEDICAL EFFECTIVENESS AND HEALTH CARE DECISION-MAKING

The purpose of this analysis is to investigate the cost impacts of the proposal to create a Center for Medical effectiveness and Health Care Decision Making. The goal of this entity would be to promote research and disseminate information that would guide medical decision making toward the most appropriate care. The center would operate as a quasi-government agency that would provide information to providers, payers, and beneficiaries. The center would be funded by a 0.05 percent assessment of Federal Medicaid spending and an assessment of 0.05 percent on private insurance.

Research has indicated that the dissemination of information could play a role in lowering costs and reducing the incidence of inappropriate care. Improved dissemination would facilitate both the consideration of informed patient preference and more effective management of chronic disease.⁸⁷ The Center would require the use of Patient Decision Aids (PtDAs) in the evaluation of treatment options for select procedures. The use of PtDA would support the inclusion of informed patient preferences into the treatment decision.⁸⁸ To promote improved management of chronic illness, the center would create best practice guidelines and double co-pays on treatment options that are not consistent with those best practices. In addition, the center would provide additional funding for clinical trials research. We estimate the center would save \$124.8 billion over 5 years and \$367.5 billion over 10 years.

Background

Research has indicated that the dissemination of information in the form of patient education and the promulgation of clinical guidelines can produce cost savings in the health care system.

Wennberg (2003) showed that variation in practice patterns did not result in differing health outcomes and that reducing that variation could save the Medicare program 30 percent.⁸⁹ O'Connor *et al.* (2004) suggests that the implementation of Patient Shared Decision Making does improve patient satisfaction and reduce the prevalence of invasive procedures where patients are educated on all the treatment options.⁹⁰ Thorpe (2007) explained that 75 percent of health care expenditures can be attributed to the treatment of the chronically ill. He also explained that 56 percent of the chronically ill are not receiving the appropriate preventative services. He suggests that implementation of integrated disease management systems could lead to a decrease in health spending on the chronically ill by as much as 10 percent.

⁸⁷ Thorpe (2007), "Potential Savings Under the AdvaMed Plan Associated with Health Reforms Focusing on Chronic Care Management, Prevention and Health Information Technology" found at: <http://www.advamed.org/NR/rdonlyres/03AE0ADD-3472-4F29-BC58-32EC0575AB67/0/healthreformsavingsthorpeFINAL.pdf>

⁸⁸ Wennberg et al (2003), "The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care". *Annals of Internal Medicine*, February 18, 2003, Vol 138

⁸⁹ See Note 2

⁹⁰ A.M. O'Connor, et al, "Modifying Unwarranted Variations in Health Care: Shared Decision Making Using Patient Decision Aids," *Health Affairs* Web Exclusive October 7, 2004.

Methodology

We based our estimate of the impact of PtDA implementation in the health care system on Lewin research of PtDA implementation in Medicare. We estimated the cost impact of PtDA on 11 chronic conditions in the Medicare population. We used studies of controlled trials on the impact of PtDA on these conditions. We extrapolated the savings or costs produced by PtDA to the under 65 population using the 2004 Medical Expenditure Panel (MEPS) data. We assumed the share of condition expenditures available to patient preferences in the Medicare population was the same in the under 65 population and applied the condition specific PtDA savings to that share in the under 65 population (*Figure 1*).

Figure 1
2008 Expenditures from MEPS on 11 Conditions in Medicare Analysis
PtDA Effects
(in billions)

Condition	MEPS 2008 Spending ^{a/}	Share of Care Subject to PtDA	Percent Savings from PtDA	Savings From PtDA
Atrial Fibrillation	\$21.7	4.4%	-29.4%	-\$0.2788
Hypertension	\$30.4	38.2%	5.4%	\$0.6271
Tube Feeding in Dementia	\$10.7	4.1%	39.0%	\$0.1702
Chronic Obstructed Pulmonary Disease	\$6.6	0.2%	19.2%	\$0.0028
Colon/Rectal Cancer	\$8.2	23.4%	41.0%	\$0.7819
Prostate Cancer	\$11.9	14.7%	8.9%	\$0.1550
Hysterectomy	\$3.1	18.7%	16.1%	\$0.0945
Benign Prostate Hyperplasia	\$1.0	3.1%	0.7%	\$0.0002
Lower Back	\$53.0	18.4%	20.3%	\$1.9800
Angina	\$12.2	1.2%	11.9%	\$0.0178
Breast Cancer	\$11.1	0.2%	2.1%	\$0.0004

a/2004 MEPS data grown using NHE growth rate found at:

http://www.cms.hhs.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage

Source: Lewin Group Estimates

In addition, we used studies on 12 other conditions that were not applied to the Medicare population. These studies either examined conditions not prevalent in the Medicare population, focused the PtDA on the non-elderly population, or the results in the PtDA evaluation did not allow a direct calculation of cost effects. The conditions were asthma in children, gene testing for breast cancer, depression, epilepsy in children, HIV transmission to newborns, ovarian cancer, schizophrenia, dental extractions, maternity care, amniocentesis, circumcision, and depression during pregnancy.

We estimated savings for Asthma, Depression, Epilepsy, and Circumcision using commercial fee -for- service claims data. For the remaining conditions we developed an alternative methodology to calculate cost estimates. The savings/costs derived from the PtDA for these

conditions were based on the framework of the decision. If the PtDA evaluated a treat vs non-treat option we used the average percent savings/cost of the Medicare conditions that also evaluated a treat vs. non-treat option. Similarly, if the PtDA evaluated different treatment alternatives we used the average percent savings/costs of the Medicare conditions that also evaluated treatment alternatives. We estimated expenditures using the 2004 MEPS data (Figure 2).

Figure 2
2008 Expenditures from MEPS on 12 Conditions from non-Medicare population PtDA Effects
(in billions)

Condition	MEPS 2008 Spending ^{a/}	Share of Care Subject to PtDA ^{b/}	PtDA Type ^{c/}	Percent Savings from PtDA ^{d/}	Savings From PtDA
Asthma in children e/	\$8.8	11.1%	-	23.0%	\$0.2235
Gene Testing for Breast Cancer f/	\$7.3	7.5%	YN	20.2%	\$0.1101
Depression g/	\$23.6	74.0%	-	1.1%	\$0.1923
Epilepsy in children e/	\$9.2	3.7%	-	2.7%	\$0.0082
HIV transmission to newborns h/	\$5.3	0.7%	YN	20.2%	\$0.0072
Ovarian Cancer i/	\$6.8	43.0%	ALT	1.4%	\$0.0413
Schizophrenia	\$4.6	11.1%	ALT	1.4%	\$0.0073
Dental	\$2.7	11.1%	ALT	1.4%	\$0.0043
Maternity	\$1.3	11.1%	ALT	1.4%	\$0.0021
Pre-natal Testing j/	\$2.7	0.2%	YN	20.2%	\$0.0612
Circumcision k/	\$0.6	10.5%	-	0.5%	\$0.0003
Depression during pregnancy	\$8.1	11.1%	ALT	1.4%	\$0.0127

a/2004 MEPS data grown using NHE growth rate found at:

http://www.cms.hhs.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage

b/Average Share of care subject to PtDA from Medicare analysis used for Schizophrenia, Dental, Maternity, and Depression during pregnancy.

c/ALT = PtDA evaluating treatment alternatives, YN = A treatment vs. no treatment choice. This is used when savings are based on average Medicare savings for PtDA type.

d/The average savings associated with the PtDA type in the Medicare Analysis. Source: Lewin Group Sources

e/Savings and share of care calculated using fee-for -service claims data and study results from Tieffenberg (2000)⁹¹

f/Share calculated from Mayo Clinic report that between 5 and 10 percent of women are at risk from BRAC1 and BRAC2 gene mutations⁹² Savings calculation based on Green (2001) , Rost (2005).⁹³

⁹¹ Tieffenberg, MD, et al "A Randomized Trial of ACINDES: A Child Centered Training Model for Children with Chronic Illness (Asthma and Epilepsy)", Journal of Urban Health, Volume 77, Number 2, June 2000.

⁹² Report found at: health.yahoo.com/topic/breastcancer/symptoms/article/mayoclinic/015A9CD3-3654

⁹³ Green, et al, "An interactive Computer Program Can Effectively Educate Patients About Genetic Testing for Breast Cancer Susceptibility", American Journal of Medical Genetics 103:16-23 (2001).

g/Savings and share based on Dwight-Johnson (2001)⁹⁴
h/Savings based on Heaton (1999)⁹⁵. Share based on Lewin Group sources.
i/Savings based on Elit (1995). Share based on Lewin Group Sources.⁹⁶
j/Savings based on Thornton(1995) .Share based on Lewin Group Sources⁹⁷
k/Savings based on Herrera (1983),⁹⁸ Share based on Lewin Group Sources.

We used the average share of patient sensitive expenditures of the 11 conditions we analyzed in Medicare as the share of expenditures available to patient preferences for Schizophrenia, Dental, Maternity and Depression during pregnancy. We calculated the share subject to PtDA based on commercial fee-for-service data for the remaining conditions.

We estimated the impact of the center on the management of chronic illness as follows. We estimate 75 percent of all care represents chronic illness expenditures. The health system has identified what appropriate care should be for 25 percent of the chronically ill.⁹⁹ The National Guideline Clearinghouse (NGC) maintains a database of all the clinical guidelines that meet the criteria for inclusion in the NGC.¹⁰⁰¹⁰¹ We assume that the total number of clinical guidelines in the NDC is representative of the 25 percent of identified appropriate care. We project the baseline growth in identified appropriate care by using the number of guidelines that will be added in a year. Based on an additional 51 new guidelines added in 2007, we estimate the baseline growth to be 2.4 percent.¹⁰² We project the share of identified appropriate care under current law to grow to 49.0 percent by 2017.

We estimate total spending on medical research in 2008 to would be \$139.4 billion.¹⁰³ We assume 28.8 percent of total research expenditures are spent on clinical trials.¹⁰⁴ We use total spent on clinical trials and the total number of clinical guidelines in the NGC to estimate a current cost per guideline. We use the cost per guideline and the amount spent by the center each year on

⁹⁴ Dwight-Johnson, et al, "Can Quality Improvement Programs for Depression in Primary Care Address Patient Preferences for Treatment", *Medical Care*, Volume 39, pp 934-944, 2001. Rost et al, "Cost-Effectiveness of Enhancing Primary Care Depression Management on an Ongoing Basis", *Annals of Family Medicine*, Volume 3. No. 1 January/February 2005.

⁹⁵ Heaton et al, "Effects of ZDV-based patient education on intentions toward ZDV use, HIV testing and reproduction among a cohort of US women. *Aids Care*, 675-686, 1999

⁹⁶ Elit, et al. "Patients' Preferences for Therapy in Advanced Epithelial Ovarian Cancer: Development, Testing, and Application of a Bedside Decision Instrument. *Gynecological Oncology* 62, 329-335(1996)

⁹⁷ Thornton et al, "A Randomised trial of three methods of giving information about pre-natal testing", *BMJ*, 1995;311:1127-1130 (28 October)

⁹⁸ Herrera et al "Parental Information and Circumcision in Highly Motivated Couples with Higher Education" *Pediatrics*, Vol. 71, Feb 1983

⁹⁹ Based on conversation and consultation with industry experts

¹⁰⁰ The NGC is an initiative of the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services. NGC was originally created by AHRQ in partnership with the American Medical Association and the American Association of Health Plans (AHIP).

¹⁰¹ Inclusion Criteria found at: <http://www.guideline.gov/about/inclusion.aspx>

¹⁰² Based on six additional guidelines submitted every two weeks *.33 (share of new guidelines that are not updates)/2164 (total number of guidelines.) Submission rate taken from 'Guidelines in Progress' site found at <http://www.guideline.gov/browse/workqueue.aspx>.

¹⁰³ 2005 estimate of total research spending grown to 2008 using average increase from research expenditures reported in Moses (2005). 2005 research spending found at: www.kff.org/insurance/snapshot/chcm030807oth.cfm.

¹⁰⁴ We use proportions of spending reported in Moses (2005) to calculate the share of research spending dedicated to clinical trials. Moses, et al (2005), "Financial Anatomy of Biomedical Research", *JAMA*, September 21, 2005 Vol. 294 No.11

research to estimate the additional guidelines that would be promulgated by the center. We project the share of identified appropriate care under the policy to grow to 58.8 percent by 2017.

We assume that for that 25 percent, 30 percent of the care is not in compliance with what the health care system has identified as appropriate. The policy would double the co-pay on care that did not comply with appropriate guidelines. We assume the elasticity of demand for health care services with respect to cost of -0.2.¹⁰⁵ This would cause a shift in demand for inappropriate care to appropriate care of 80 percent.

Cost Savings

We estimated the effects of PtDA on expenditures for the 24 select procedures and conditions would be a savings to national health spending of \$30.5 billion over 5 years and \$74.9 billion over ten years (*Figure 3*). We estimated the effects of doubling the co-pay to promote more appropriate care and additional research spending to be a savings of \$80.5 billion over 5 years and \$247.3 billion over 10 years (*Figure 4*).

Figure 3
Savings from Implementation of PtDA under the Center for Medical Effectiveness and Health Care Decision-Making
(in billions)

Year	Savings from 11 Chronic Conditions	Savings from 12 non-Medicare Conditions	Total Savings from PtDA	Total Savings from PtDA (Cum.)
2008	\$3.6	\$1.7	\$5.2	\$5.2
2009	3.8	1.8	5.6	10.8
2010	4.1	1.9	6.1	16.9
2011	4.5	2.1	6.5	23.5
2012	4.8	2.2	7.0	30.5
2013	5.2	2.4	7.6	38.1
2014	5.6	2.6	8.2	46.3
2015	6.0	2.8	8.8	55.1
2016	6.5	3.0	9.5	64.6
2017	\$7.0	\$3.3	\$10.3	\$74.9

Source: Lewin Group Estimates

¹⁰⁵ Newhouse et al "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment", The American Economic Review, Vol. 77, No. 3 (Jun., 1987), pp. 251-277

Figure 4
Savings from Implementation of Chronic Disease Management under the Center for Medical Effectiveness and Health Care Decision-Making
(in billions)

Year	Spending on Chronic Conditions ^{a/}	Spending on Chronic Conditions Excluding the Spending on PtDA Conditions ^{b/}	Share of Chronic Care where Appropriate Care is Identified Under Current Law	Share of Chronic Care where Appropriate Care is Identified Under Policy	Savings from Chronic Disease Under Policy	Savings from Chronic Disease Under Policy (Cum.)
2008	\$1,004.1	662.7	27.4%	28.2%	\$11.2	\$11.2
2009	1,077.4	711.1	29.8%	31.4%	13.4	24.6
2010	1,151.8	760.2	32.2%	34.7%	15.8	40.4
2011	1,230.1	811.8	34.6%	38.0%	18.5	58.9
2012	1,316.2	868.7	37.0%	41.4%	21.6	80.5
2013	1,408.3	929.5	39.4%	44.7%	25.0	105.5
2014	1,505.5	993.6	41.8%	48.2%	28.7	134.2
2015	1,607.9	1,061.2	44.2%	51.7%	32.9	167.1
2016	1,717.2	1,133.3	46.6%	55.2%	37.5	204.6
2017	\$1,834.0	\$1,210.4	49.0%	58.8%	\$42.7	\$247.3

a/Based on 75 percent of total expenditures calculated from 2004 MEPS. Totals grown using National Health Expenditure growth rate found at:

http://www.cms.hhs.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage

b/ Total spending on PtDA conditions accounts for 37 percent of Spending on Chronic Conditions.

Source: Lewin Group Estimates

We estimate the net savings to the health care system from the implementation of the center on national health spending before adjustments from payers would be \$106.0 billion over 5 years and \$310.2 billion over 10 years (*Figure 5*). The portion of the savings we estimate subject to a cost shift is \$570.0 million over 5 years and \$1.4 billion over 10 years. After adjusting for the net affect of costs and savings to the other payers, national health spending accrues a saving of \$124.8 billion over 5 years and \$367.5 billion over 10 years.

Since the implementation of the center would generate savings by improving utilization management and health outcomes, beneficiaries and payers providing wrap around coverage to Medicare beneficiaries would also accrue additional savings. We estimate savings to the payer groups after adjusting for the cost of the program (*Figure 6*) as follows. We estimate the savings to out-of-pocket expenses at \$24.7 billion over 5 years and \$70.9 billion over 10 years. We estimate the savings to household insurance premiums to be \$12.2 billion over 5 years and \$36.2 billion over 10 years. We estimated the savings to private employers to be \$33.7 billion over 5 years and \$97.7 billion over 10 years. We estimated the savings to the Federal government to be \$37.5 billion over 5 years and \$113.6 billion the 10 year period. We estimate the savings to State and Local governments to be \$16.6 billion over 5 years and \$49.1 billion over 10 years.

Figure 5
Savings to National Health Spending from Implementation of the Center for Medical Effectiveness
and Health Care Decision-Making
(in billions)

Year	Savings from PtDA	Savings from Chronic Disease Mgmt.	Total Savings from PtDA and Chronic Disease Mgmt.	Cost of Program ^{a/}	Savings Subject to Cost Shift	Savings Subject to Cost Shift (Cum.)	Savings from Policy After Cost	Saving from Policy After Cost (Cum.)	Savings to national Health Spending	Cumulative Savings to National Health Spending
2008	\$5.2	\$11.2	\$16.4	\$0.8	\$0.1	\$0.1	\$15.6	\$15.6	\$18.3	\$18.3
2009	5.6	13.4	19.0	0.8	0.11	0.21	18.1	33.7	21.2	39.5
2010	6.1	15.8	21.9	0.9	0.12	0.32	20.9	54.6	24.6	64.0
2011	6.5	18.5	25.0	0.9	0.13	0.44	24.0	78.5	28.3	92.3
2012	7.0	21.6	28.6	1.0	0.14	0.57	27.5	106.0	32.5	124.8
2013	7.6	25.0	32.6	1.1	0.15	0.71	31.3	137.3	37.0	161.8
2014	8.2	28.7	36.9	1.1	0.16	0.87	35.6	172.9	42.4	204.2
2015	8.8	32.9	41.7	1.2	0.18	1.03	40.3	213.3	47.9	252.1
2016	9.5	37.5	47.1	1.3	0.19	1.21	45.6	258.8	54.2	306.3
2017	\$10.3	\$42.7	\$52.9	\$1.4	\$0.2	\$1.4	\$51.3	\$310.2	\$61.2	\$367.5

a/.05 percent of Federal Medicare & Medicaid +.05 percent of insurance premiums.
Source: Lewin Group Estimates

Figure 6
Distribution of Projected Savings to Payer Groups from the Center for Medical Effectiveness and
Health Care Decision-Making
(in billions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer Savings (Cum.)	Federal Savings ^{a/}	Federal Savings (cum.)	State and Local	State and Local (Cum.)
2008	\$3.7	\$3.7	\$1.8	\$1.8	\$5.0	\$5.0	\$5.4	\$5.4	\$2.5	\$2.5
2009	4.2	7.9	2.1	3.8	5.8	10.7	6.3	11.7	2.8	5.3
2010	4.9	12.8	2.4	6.2	6.7	17.4	7.4	19.0	3.3	8.6
2011	5.6	18.3	2.8	9.0	7.6	25.0	8.5	27.6	3.8	12.3
2012	6.3	24.7	3.2	12.2	8.7	33.7	9.9	37.5	4.3	16.6
2013	7.2	31.8	3.6	15.9	9.9	43.6	11.4	48.9	4.9	21.6
2014	8.1	39.9	4.2	20.1	11.3	54.9	13.1	62.0	5.7	27.2
2015	9.1	49.1	4.7	24.8	12.6	67.5	15.0	77.0	6.4	33.6
2016	10.3	59.3	5.3	30.1	14.2	81.7	17.2	94.2	7.3	40.9
2017	\$11.6	\$70.9	\$6.0	\$36.2	\$16.0	\$97.7	\$19.4	\$113.6	\$8.2	\$49.1

a/Savings associated with reductions in Federal Retirees.
Source: Lewin Group Estimates.

XIII. INCENTIVES IN HEALTH INSURANCE/BENEFIT DESIGN TO PROVIDE POSITIVE INCENTIVES FOR HEALTHY LIVES AND DISEASE MANAGEMENT

The purpose of this analysis is to investigate the cost impacts of a Federal initiative to support state and private employer efforts that use benefit designs that provide positive incentives for preventive care and healthy behavior. This initiative will rely on the four following policy levers to include healthy behavior incentives in benefit design.

The first would award federal grants to states that either require insurers to offer benefit packages that reward health behaviors, require chronic disease management programs in all public health insurance programs or amend rating rules to allow insurers to offer discounts for plans that cover all the U.S. Preventive Services Task Force (USPSTF) list of key preventive services. The next policy change would increase the Federal share of the premium in FEHBP for plans that have no deductible on preventive services. The third policy would amend the tax code to allow individuals to use Flexible Spending Accounts (FSA) to pay for select obesity and smoking cessation programs without a doctor's prescription. The final policy would amend Health Insurance Portability and Accountability Act (HIPAA) to require all insurance plans to offer (USPSTF) preventive services without any deductible. We estimate the savings to national health spending to be \$5.4 billion over 5 years and \$19.0 billion over 10 years.

State Disease Management Expansion

We estimated the effect of expanding disease management programs in select state Medicaid programs. The proposal directs the Federal government to spend \$20.0 million in grants for ten states in the first year and another \$30 million to an additional 15 states in the second year. We selected the first 10 states from the group of 14 states that are not currently using a formal disease management program in their Medicaid programs.¹⁰⁶ These states included Arizona, California, Connecticut, Iowa, Michigan, Minnesota, New Mexico, Pennsylvania, Tennessee, and Wisconsin. The second set of states included the four remaining states that did not have programs. The second set included Alaska, Nevada, New Hampshire, and South Dakota.

Thorpe (2007) estimated that 75 percent of health care spending is associated with the chronically ill.¹⁰⁷ He suggested that if the care of the chronically ill were under disease management, between 5 and 10 percent of health spending could be saved. Our consultations with actuaries indicated the savings were closer to 1 percent. We used a conservative estimate of 5.5 percent as the savings to Medicaid if the chronically ill Medicaid beneficiaries were under disease management programs. We estimate a savings of \$8.6 billion over 5 years and \$21.5 billion over 10 years (*Figure 1*).

¹⁰⁶ "Disease Management in Medicaid", California Healthcare Foundation, March 2004

¹⁰⁷ Thorpe, Kenneth "Potential Savings Under the Advamed Plan Associated with Health Reforms Focusing on Chronic Care Management, Prevention and Health Information Technology", Rollins School of Public Health, Emory University, June 2007

Figure 1
The Impact of Placing the Chronically Ill Medicaid Population Under Disease Management
(in billions)

Year	Medicaid Spending Under Current Law ^{a/}	Medicaid Spending Under Policy ^{b/}	Savings to Medicaid	Savings to Medicaid (Cum.)
2008	\$33.5	\$32.1	\$1.4	\$1.4
2009	37.7	36.1	1.6	3.0
2010	40.7	38.9	1.7	4.7
2011	44.0	42.1	1.9	6.6
2012	47.6	45.6	2.0	8.6
2013	51.5	49.3	2.2	10.8
2014	55.8	53.4	2.4	13.2
2015	60.4	57.9	2.6	15.7
2016	65.4	62.7	2.8	18.5
2017	\$70.9	\$67.9	\$3.0	\$21.5

a/ 77 percent of CMS/OACT state estimates of Medicaid spending grown to 2008 using NHE growth rate projection for Medicaid spending. 77 percent is the percent of spending on chronically ill for Medicaid.

¹⁰⁸ Medicare dual eligibles and managed care enrollment excluded. Report for state estimate found at: http://www.cms.hhs.gov/NationalHealthExpendData/05_NationalHealthAccountsStateHealthAccounts.asp#TopOfPage. Report for growth rate found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/Current Law spending reduced by 5.5 percent.

Preventive Services

The policy requires a modification to HIPPA to require all insurance plans to cover the USPSTF list of preventive services. In addition, the proposal would require that those services not be subject to any deductible imposed by the plan. Also, for plans contracting with the Federal Employee Health Benefit Plan (FEHBP) that cover preventive services without a deductible, the Federal government would increase its share of the premium by 10 percent.

We estimated the impact of this component of the proposal by first determining the number of people in plans that currently cover preventive services without a deductible. We used summary data from National Survey of Employer-Sponsored Health Plans, 2001 to estimate that on average 63.0 percent of plans cover preventive services.¹⁰⁹ Based on summary data on utilization rates of preventive services, we estimated that on average 56.0 percent of the covered

¹⁰⁸ "Disease Management Programs: Improving Health While Reducing Costs?", Center for an Aging Society, Georgetown University, Number 4, 2004

¹⁰⁹ Average based on percent of plans covering select clinical services. "Why Invest: Recommendations for Improving Your Prevention Investment", Partnership for Prevention, June 2007. Report found at: http://www.prevent.org/images/stories/PDF/whyinvest_web_small.pdf.

population utilizes preventive services.¹¹⁰ We assume that when coverage increases to 100.0 percent, the utilization rate will remain unchanged.

Maciosek (2006) ranked the USPSTF list of preventive services based on life time cost-effectiveness. He estimated annual cost/savings for the highest ranking preventive services. Based on his estimate, we calculated the lifetime savings per person for the most cost effective preventive services to be \$993.0.¹¹¹ In addition, we assumed a linear phase in of the savings over the first 5 years of the projection to account for the lagged effects of the benefit of increased use of preventive services.

We use the Kaiser Family Foundation and Health Research an Educational Trust (KFF/HRET) 2006 Employer Health Benefits Annual survey to estimate the share of the covered population where the deductible applies to preventive services. We also use this data to estimate the average deductible. We estimate that 57.0 percent of the privately covered population has to pay a deductible on preventive services and that the average deductible is approximately \$500.0. Based on an elasticity of -0.2 and the \$500.0 decline in out-of-pocket expenses for preventive services, we estimate a 10.4 percent increase in the utilization of preventive services due to elimination of the deductible for preventive services.^{112, 113} We estimate savings over 5 years to be \$4.2 billion over 5 years and \$14.0 billion over 10 years (*Figure 2*).

¹¹⁰ "Preventive Care: A National Profile on Use, Disparities, and Health Benefits", Partnership for Prevention, pp. 32-35 August 2007. Report found at: <http://www.prevent.org/content/view/129/72/>

¹¹¹ Maciosek et al, "Priorities Among Effective Clinical Preventive Services:Results of a Systematic Review and Analysis", American Journal of Preventive Medicine, Vol. 31, Number 1, 2006. Costs, Savings, and utilization rates found at <http://www.prevent.org/content/view/43/71/>

¹¹² Newhouse et al "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment", The American Economic Review, Vol. 77, No. 3 (Jun., 1987), pp. 251-277

¹¹³ Out-of-Pocket costs taken from Report for growth rate found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Figure 2
Effects of Mandating Coverage of Preventive Services without Deductible
(dollars in billions, population in millions)

Year	Covered Population Utilizing Preventive Services under Current Law ^{a/}	Covered Population Utilizing Preventive Services Due to Expanded Coverage ^{b/}	Covered Population Utilizing Preventive Services Due to Elimination of Deductible ^{c/}	Savings Under Policy ^{d/}	Savings Under Policy (Cum.)
2008	68.7	101.7	112.3	\$0.23	\$0.2
2009	69.2	102.6	113.2	0.50	0.7
2010	69.8	103.4	114.2	0.80	1.5
2011	70.4	104.3	115.1	1.15	2.7
2012	71.0	105.1	116.1	1.55	4.2
2013	71.5	106.0	117.0	1.67	5.9
2014	72.1	106.8	118.0	1.80	7.7
2015	72.7	107.7	118.9	1.94	9.6
2016	73.3	108.6	119.8	2.09	11.7
2017	73.9	109.4	120.8	\$2.26	\$14.0

a/Privately covered population that utilizes preventive services taken from Kaiser Family Foundation summary data. Report found at: <http://www.statehealthfacts.org/comparebar.jsp?ind=125&cat=3>, Population grown using Census Bureau projected growth rate.

b/51 percent of covered population using preventive services

c/10.4 percent increase over the Expanded Coverage column.

d/Lifetime net savings * the new preventive service utilizers.

Flexible Spending Accounts (FSA) Expansion

The policy proposal has a provision that would allow individuals to use their FSAs to pay for commercial obesity abatement and smoking cessation programs. We estimated that approximately 30 percent of the overweight and obese are actively trying to lose weight.¹¹⁴ Based on an elasticity of -0.2 and a median marginal tax rate of 15 percent for someone at the median income we estimated an increase of 3 percent in the utilization of commercial weight loss and smoking cessation programs due to the opportunity to use pre-tax dollars.¹¹⁵ We found that of dieters, 12.4 percent lose weight and keep it off for ten years or more and that 14 percent of those successful losers used a commercial program.¹¹⁶

Thompson et al (2001) estimated that medical costs attributable to the overweight and obese ranged 5.5 and 7 percent.¹¹⁷ We estimated the medical costs of the overweight and the obese

¹¹⁴ Report found at: <http://www.dietcenter.com/temps/resources/articles.cfm>

¹¹⁵ See Note 7

¹¹⁶ Report found at :www.soundvision.com/info/halahealthy/dieters.asp

¹¹⁷ Thompson et al, "The Medical-Care Cost Burden of Obesity", The International Association for the Study of Obesity. Obesity Reviews 2, 189-197, 2001

using the 2004 Medical Expenditure Panel Survey (MEPS) data. We used the midpoint from the Thompson review assuming that the overweight and obese that lost weight achieved a normal weight. We estimate savings to be \$36.0 million over 5 years and \$87.0 million over 10 years.

Figure 3
The Impact of Allowing Commercial Weight Loss Programs to be Paid from Flexible Spending Accounts
(in billions)

Year	Medical Spending for Overweight and Obese Under Current Law ^{a/}	Medical Spending for Overweight and Obese Under Policy ^{b/}	Savings Under Policy	Savings Under Policy (Cum.)
2008	\$0.101	\$0.095	\$0.006	\$0.006
2009	0.109	0.102	0.007	0.013
2010	0.116	0.109	0.007	0.020
2011	0.124	0.116	0.008	0.028
2012	0.133	0.124	0.008	0.036
2013	0.142	0.133	0.009	0.045
2014	0.152	0.142	0.009	0.055
2015	0.162	0.152	0.010	0.065
2016	0.173	0.162	0.011	0.076
2017	\$0.185	\$0.174	\$0.012	\$0.087

a/Projected Medical costs of obese and overweight that successfully lose in commercial weight loss program. 2004 MEPS based estimate grown using the CMS/OACT projected growth rate for personal health services. Report found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/ Medical costs reduced by Thorpe findings. An average savings of 23.9 percent.

In the case of smokers, we use the MEPS data to identify the medical expenses of the smoking population that is trying to quit smoking. We assume an individual is trying to quit smoking if they had been advised by a physician to quit. This is indicated in a variable in the MEPS survey.

Zhu (2000) found that 19.9 percent of those trying to quit seek assistance with some type of smoker’s cessation program. Of that group, the study showed that 15.5 percent of them successfully quit smoking.¹¹⁸

Barendregt et al. (1997) estimated that health care costs decline in the first 15 years following cessation. As the non-smokers live longer however, the costs of age related illness exceeds the savings attributed to smoking cessation after 15 years. They extrapolated their findings on a 100% smoking cessation scenario. Based on that extrapolation, in the first year of cessation, they showed a 1 percent reduction in national health spending. They estimated savings to increase to

¹¹⁸ Zhu et al, “Smoking Cessation with and without Assistance: A population survey” American Journal of Preventive Medicine, Volume 18, Issue 4, May 2000, pages 305-311.

2.5 percent by the 5th year and by the 10th year, savings had slowed back to less than 2 percent.
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We estimate savings to be \$8.0 million after 5 years and \$18.0 million after 10 years.

Figure 4
The Impact of Allowing Commercial Smoking Cessation Programs to be Paid from Flexible Spending Accounts
(in billions)

Year	Medical Spending for Smokers Using Commercial Cessation Programs Under Current Law ^{a/}	Medical Spending for Smokers Using Commercial Cessation Programs Under Policy ^{b/}	Savings Under Policy	Savings Under Policy (Cum.)
2008	\$0.130	\$0.129	\$0.0013	\$0.001
2009	0.140	0.138	0.0014	0.003
2010	0.150	0.148	0.0015	0.004
2011	0.160	0.158	0.0016	0.006
2012	0.171	0.169	0.0017	0.008
2013	0.183	0.181	0.0018	0.009
2014	0.195	0.193	0.0020	0.011
2015	0.209	0.207	0.0021	0.013
2016	0.223	0.221	0.0022	0.016
2017	\$0.239	\$0.236	\$0.0024	\$0.018

a/Projected Medical costs of smokers that successfully quit in commercial cessation programs. 2004 MEPS based estimate grown using the CMS/OACT projected growth rate for personal health services. Report found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/ Medical costs reduced by Barendregt findings.

Savings to National Health Spending

We estimated the combined effects of the policy proposal after the increased cost to FEHBP, the grants to the states, and the savings to payers to be \$5.4 billion over 5 years and \$19.0 billion over 10 years (*Figure 5*). Since the implementation of these policies would generate savings by improving utilization management and health outcomes, beneficiaries and payers would also accrue additional savings.

We estimate savings to the payer groups after adjusting for the cost of the program (*Figure 6*) as follows. We estimate the savings to out-of-pocket expenses at \$1.0 billion over 5 years and \$3.4 billion over 10 years. We estimate the savings to household insurance premiums to be \$0.6 billion over 5 years and \$1.9 billion over 10 years. We estimated the savings to private employers to be \$1.4 billion over 5 years and \$4.5 billion over 10 years. We estimated the cost to the Federal government to be \$1.9 billion over 5 years and \$2.2 billion the 10 year period. We

¹¹⁹ Barendregt JJ, Bonneux L Van Der Maas PJ. "The Health Care Costs of Smoking.", *The New England Journal of Medicine*, October 1997.

estimate the savings to State and Local governments to be \$4.4 billion over 5 years and \$11.5 billion over 10 years.

Figure 5
Projected Effects of Healthy Incentives Proposal on National Health Spending
(in billions)

Year	Savings to state Medicaid Programs	Savings From Preventive Services	Savings From Reductions in Medical Costs for Overweight and Obese	Savings From Reductions in Medical Costs for Ex-Smokers	FEHBP and Grant Costs	Combined Savings From Program	Savings to NHE	Savings to NHE (Cum.)
2008	\$1.4	\$0.2	\$0.006	\$0.0013	\$1.5	\$0.2	\$0.2	\$0.2
2009	1.6	0.5	0.007	0.0014	1.6	0.5	0.6	0.8
2010	1.7	0.8	0.007	0.0015	1.7	0.8	1.0	1.8
2011	1.9	1.2	0.008	0.0016	1.8	1.2	1.5	3.3
2012	2.0	1.6	0.008	0.0017	1.9	1.6	2.0	5.4
2013	2.2	1.7	0.009	0.0018	2.1	1.8	2.2	7.6
2014	2.4	1.8	0.009	0.0020	2.2	2.0	2.5	10.1
2015	2.6	1.9	0.010	0.0021	2.4	2.2	2.7	12.8
2016	2.8	2.1	0.011	0.0022	2.5	2.4	3.0	15.7
2017	\$3.0	\$2.3	\$0.012	\$0.0024	\$2.7	\$2.6	\$3.2	\$19.0

Sources: Lewin Group Estimates

Figure 6
Distribution of Projected Savings to Payer Groups from the Healthy Incentives Proposal
(in billions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer Savings (Cum.)	Federal Cost	Federal Cost (cum.)	State and Local	State and Local (Cum.)
2008	\$0.05	\$0.05	\$0.03	\$0.03	\$0.08	\$0.08	\$0.62	\$0.6	\$0.6	\$0.6
2009	0.12	0.17	0.07	0.09	0.16	0.24	0.48	1.1	0.8	1.4
2010	0.19	0.36	0.11	0.20	0.26	0.50	0.39	1.5	0.9	2.3
2011	0.28	0.63	0.15	0.35	0.37	0.87	0.28	1.8	1.0	3.3
2012	0.37	1.00	0.20	0.56	0.50	1.36	0.15	1.9	1.1	4.4
2013	0.40	1.40	0.22	0.78	0.53	1.90	0.13	2.1	1.2	5.6
2014	0.43	1.83	0.24	1.02	0.58	2.47	0.10	2.2	1.3	6.9
2015	0.47	2.30	0.26	1.27	0.61	3.09	0.06	2.2	1.4	8.3
2016	0.50	2.80	0.28	1.55	0.66	3.75	0.01	2.2	1.5	9.8
2017	\$0.55	\$3.35	\$0.30	\$1.85	\$0.71	\$4.45	\$-0.03	\$2.2	\$1.7	\$11.5

Source: Lewin Group Estimates.

XIV. MEDICARE PATIENT SHARED DECISION MAKING - EXPANDED TO 11 CONDITIONS

In this analysis we estimate the cost impacts of a proposal to promote the use of Patient Shared Decision Making in Medicare for eleven procedures. The selected procedures include coronary revascularization for angina, mastectomy for early breast cancer, lumbar spine surgery for lower back pain, and prostatectomy for benign prostatic hypertrophy, stroke prevention, hypertension, tube feeding in dementia patients, colorectal cancer screening, prostate cancer screening, menorrhagia, and mechanical ventilation for chronic obstructive pulmonary disease. Patient Shared Decision Making is an approach where the patient and care-giver make the treatment choice when there are multiple choices with comparable health outcomes. The critical component of this is the education of the patient on treatment options. Methods of patient education include counseling and Patient Decision Aid's (PtDA). PtDA's can take the form of instructive pamphlets or interactive computer or web based teaching tools.

O'Connor *et al.* (2004) suggests that the implementation of Patient Shared Decision Making does improve patient satisfaction and reduce the prevalence of invasive procedures where patients are educated on all the treatment options.¹²⁰ The affect on educated patient choice on costs is dependent on the cost of implementing the patient decision tools and the relative cost of the alternative procedures. We estimate the savings to national health spending to be \$3.8 billion over 5 years and \$9.2 billion over ten years.

Background

In the case of diseases where there are multiple treatment options with similar outcomes, numerous studies have demonstrated that patient satisfaction has been greater when the patient can share in the decision making with the physician. O'Connor (2004) cited eleven studies that used randomized controlled trials to determine patient satisfaction with the treatment decision. PtDA's are designed to enable the patient to participate in the selection of treatment options.

The eleven studies each examined the impact of decision aids on patient decisions over treatment options in a randomized controlled setting. A control group was allowed to make the treatment decision based on traditional information. Their decisions were then compared to the treatment decisions of the group that received the decision aid.

Policy Proposal and Rationale

The policy proposal is to promote the use of PtDA's by all providers for the selected procedures. The rationale for this proposal is that patients that are well educated about their treatment options are more likely to make medical decisions that match their own preferences. This may result in choosing less invasive and less expensive treatments.¹²¹

¹²⁰ A.M. O'Connor, et al, "Modifying Unwarranted Variations in Health Care: Shared Decision Making Using Patient Decision Aids," Health Affairs Web Exclusive October 7, 2004.

¹²¹ Durgin J. "Feds examine decision making a la DHMC", Dartmouth Medicine, Spring 2005

The Center for Medicare and Medicaid Services (CMS) would implement this initiative by creating a web based tool accessible to all beneficiaries. In addition, CMS would support regional nurse PtDA call centers for patients where the patient's care team is not able to facilitate PtDA. The provider will verify that the patient has received PtDA by collecting a signed attestation from the patient that they have utilized PtDA. Failure to collect the attestation will result in the provider receiving 90% of the Medicare reimbursement for the procedure.

Methodology

To calculate the baseline expenditures on the selected procedures we used the 5 percent Medicare Outpatient claims file for 2005 to identify the procedure expenditures performed in the outpatient setting. To estimate the expenditures for the procedures performed in the inpatient setting we used the 2006 Medicare Provider Analysis and Review (MEDPAR) File. We grew these expenditures to 2008 levels using a weighted average of CBO baseline growth rates for Medicare Inpatient and Outpatient expenditures.¹²²

We estimated the effects of PtDA on expenditures for the select procedures by estimating the costs of the invasive procedure before and after the intervention of PtDA. We estimate the cost of the increase in utilization of the alternative treatment and add it to the cost of the invasive procedure after PtDA intervention. We compare that combined cost to the pre-PtDA cost of the invasive procedure to estimate a net savings or cost from the implementation of PtDA.

Based on CMS experience in linking provider reporting to payment we assumed that 98 percent of providers would insure beneficiaries utilized PtDA.¹²³ As a result, we expect 2 percent of the providers to receive a reimbursement cut that would accrue as savings to Medicare. This savings to Medicare however, does represent a net loss to providers which research has shown would initiate some form of cost shift of that loss to other payers. Based on our cost shift research, we assumed 40 percent of this saving would be shifted as a cost to the other payers.¹²⁴

Finally, we assume that cost of the call center would be similar to other Medicare education and outreach call center based initiatives. We used the annual costs of the Medicare & You Education Program as a model.¹²⁵ We estimate the 2008 cost of the call center to be \$46.8 million dollars.

Coronary Revascularization for Angina

Bernstein S. *et al*, (1998) conducted a randomized controlled trial on a group of surgical candidates diagnosed with coronary artery disease.¹²⁶ They had the choice of two surgical procedures to treat the condition. They could select either a Coronary Artery Bypass Graft

¹²² Fact Sheet for CBO's March 2007 Baseline:Medicare.

¹²³ Lidenauer, P. *et al* "Public Reporting and Pay for Performance in Hospital Quality Improvement", New England Journal of Medicine, 356:5, February 1, 2007.

¹²⁴ Sheils, J., Claxton, G., "Potential Cost Shifting Under Proposed Funding Reductions for Medicare and Medicaid: The Budget Reconciliation Act of 1995," (Report to the National Coalition on Health Care), The Lewin Group, December 6, 1995

¹²⁵ Assessment of the Pilot Test and First Year of the Medicare & You Education Program (1998-1999). Report found at: http://www.cms.hhs.gov/ConsumerResearch/04_NMEPAssessment.asp

¹²⁶ Bernstein, S. *et al.*, "A Randomized Controlled Trial of Information-Giving to Patients referred for Coronary Angiography: Effects on Outcomes of Care" Health Expectations, 1, pp 50-61, 1998.

(CABG) or the less invasive Percutaneous Transluminal Coronary Angioplasty (PTCA). The PtDA group selected the PTCA 17.3 percent more of the time than the control group receiving no decision aids.

We estimate the expenditures on CABG for patients with Angina under the current law to be \$458.3 million over 5 years and \$705.2 million over 10 years.¹²⁷ The shift of 17.3 percent of the procedures from CABG to PTCA results in a decline in CABG costs to \$377.2 million over 5 years and \$580.4 million over 10 years (*Figure 1*). We estimate the increase in expenditures due to increased PTCAs to be \$24.2 million over 5 years and \$34.0 million over 10 years. We estimate the net expenditures under the policy to be \$401.4 million over 5 years and \$614.4 million over 10 years. We estimated savings to Medicare to be \$241.2 million over 5 years and \$620.8 million over 10 years.

Figure 1
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Coronary Artery Bypass Graft (in millions)

Year	Projected Medicare Expenditures for CABG Procedure under current Policy ^{a/}	Projected Medicare Expenditures for CABG Procedure under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures for PTCA under Policy Proposal ^{c/}	Projected Medicare Expenditures for CABG with PTCA increase under Policy Proposal	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$341.9	\$281.4	\$19.9	\$301.3	\$40.6	\$40.6
2009	365.2	300.6	20.7	321.3	43.9	84.5
2010	391.8	322.5	21.7	344.2	47.6	132.2
2011	424.0	349.0	22.9	371.8	52.2	184.3
2012	458.3	377.2	24.2	401.4	56.9	241.2
2013	500.0	411.6	25.8	437.4	62.6	303.9
2014	543.5	447.4	27.6	475.0	68.6	372.4
2015	591.9	487.2	29.6	516.8	75.2	447.6
2016	645.2	531.0	31.7	562.7	82.4	530.0
2017	\$705.2	\$580.4	\$34.0	\$614.4	\$90.8	\$620.8

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

b/ Current Policy expenditures reduced by 17.3 percent for 98 percent of providers. Two percent of costs reduced by 10 percent to represent non-participating providers.

c/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

¹²⁷ We used the average share of CABG recipients with an Angina diagnosis (44 percent) from three studies investigating Coronary Artery Disease. The studies were as follows: Weintraub, et al, "Twenty-Year Survival After Coronary Artery Surgery" America Heart Association, October 2002; Brener S., et al "Predictors of revascularization method and long-term outcome of repeat coronary bypass surgery in patients with multivessel coronary disease and previous coronary bypass surgery", European Heart Journal (2006) 27 413-418; Kohl P., et al, "Concurrent coronary and carotid artery surgery: factors influencing perioperative outcome and long-term results", European Heart Journal, (2006) 27 49-56.

Mastectomy for Early Breast Cancer

Street R. *et al*, (1995) performed a study on evaluating the treatment choices of patients with an Early Breast Cancer diagnosis.¹²⁸ The choices available to the PtDA and control groups were a Mastectomy or the less invasive Lumpectomy with follow-up radiation therapy. The candidates were split into two groups. One group was able to utilize PtDAs while the control group received no decision tools. The group receiving PtDA selected a lumpectomy with follow-up radiation over mastectomy 17.7 percent more of the time than the control group.

We estimate the cost of mastectomies for early breast cancer under the current policy to be \$63.2 million over 5 years and \$92.5 million over 10 years.¹²⁹ We estimate the policy lowers the projected cost of mastectomies to \$51.8 million over 5 years and \$75.8 million over 10 years. As patients shift their preference from mastectomy to lumpectomy, the cost of lumpectomies with follow-up radiation increase by \$10.5 million over 5 years and \$16.1 million over 10 years. We estimate the savings to Medicare to be \$4.9 million over 5 years and \$8.8 million over 10 years (*Figure 2*).

¹²⁸ Street, R. *et al.*, "Increasing Patient Involvement in Choosing Treatment for Early Breast Cancer", *Cancer*, December 1995, Volume 76, No. 11.

¹²⁹ We assumed the share of mastectomies from a early stage breast cancer diagnosis to be 83 percent. This share was taken from study that examined the recurrence rate of individuals that had a mastectomy. Simmons R., *et al*, "Analysis of Nipple/Areolar Involvement with Mastectomy: Can the Areola be Preserved?", *Annals of Surgical Oncology*; 9(2):165-168.

Figure 2
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program
on Early Breast Cancer
(in millions)

Year	Projected Medicare Expenditures for Mastectomy Procedure under current Policy ^{a/}	Projected Medicare Expenditures for Mastectomy Procedure under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures for Lumpectomy plus Radiation Protocol under Policy Proposal ^{c/}	Projected Medicare Expenditures for Mastectomy with Lumpectomy increase under Policy Proposal	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$49.7	\$40.7	\$7.9	\$48.6	\$1.1	\$1.1
2009	52.3	42.8	8.4	51.3	1.0	2.1
2010	55.4	45.4	9.0	54.4	1.0	3.1
2011	59.1	48.4	9.8	58.2	0.9	4.0
2012	63.2	51.8	10.5	62.3	0.9	4.9
2013	68.1	55.8	11.5	67.3	0.9	5.8
2014	73.4	60.1	12.4	72.6	0.8	6.6
2015	79.2	64.9	13.5	78.4	0.8	7.4
2016	85.6	70.1	14.7	84.8	0.7	8.1
2017	\$92.5	\$75.8	\$16.1	\$91.9	\$0.7	\$8.8

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare. Reconstruction costs included.

b/ Current Policy expenditures reduced by 17.7 percent for 98 percent of providers. Two percent of costs reduced by 10 percent to represent non-participating providers.

c/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

Lumbar procedure for Lower Back Surgery

Deyo *et al.*, (2000) did a controlled trial of two groups of surgical candidates for lower back surgery. Both groups suffered from symptoms of disk herniation, spinal stenosis, or other related diagnosis.¹³⁰ The PtDAs made available instructed them on the treatment outcomes associated with having the surgery versus forgoing a surgical option and continuing with conservative therapy. We did not consider the increase in the number of candidates electing to continue conservative therapy as an increased cost. Had these candidates elected surgery, they would have incurred costs for some type of conservative therapy as part of rehabilitation.

Deyo found that the group receiving the PtDa elected to have surgery 22 percent less of the time than the group that did not receive the PtDA.

¹³⁰ Deyo, R., et al, "Involving Patients in Clinical Decisions: Impact of Interactive Video Program on Use of Back Surgery" Medical Care, Volume 38, Number 9, pp 959-969, 2000.

Under current law, we estimated expenditures on lower back surgery would be \$1.7 billion dollars over 5 years and \$2.5 billion dollars over 10 years. We estimate the total expenditure on treating the condition under the policy would be \$1.3 billion over 5 years and \$2.0 billion over ten years. We estimated savings to Medicare to be \$1.5 billion over 5 years and \$3.6 billion over 10 years (*Figure 3*).

Figure 3
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Lower Back Surgery.
 (in millions)

Year	Projected Medicare Expenditures for Lombar Procedure under current Policy ^{a/}	Total Projected Medicare Expenditures under Policy Proposal ^{b/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$1,267.0	\$1,009.8	\$257.2	\$257.2
2009	1,342.1	1,069.6	272.4	529.6
2010	1,429.4	1,139.2	290.2	819.8
2011	1,533.6	1,222.3	311.3	1,131.1
2012	1,647.3	1,312.9	334.4	1,465.5
2013	1,784.6	1,422.3	362.3	1,827.8
2014	1,929.6	1,537.9	391.7	2,219.5
2015	2,090.2	1,665.9	424.3	2,643.8
2016	2,266.3	1,806.2	460.1	3,103.9
2017	\$2,461.5	\$1,961.8	\$499.7	\$3,603.6

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using weighted average of inpatient and outpatient growth rates found on Fact Sheet for CBO's March 2007 Baseline:Medicare.

b/Current Policy expenditures reduced by 22 percent for 98 percent of providers. Two percent of costs reduced by 10 percent to represent non-participating providers.

Prostatectomy for Benign Prostatic Hypertrophy

Barry M. *et al*, (1997) also performed a randomized control trial on treatment options for Benign Prostatic Hyperplasia.¹³¹ All the subjects were candidates for prostatectomy (complete or partial removal of the prostate). The invasive procedures included Transurethral resection of the prostate (TURP), transurethral microwave therapy (TUMT), and a Prostatectomy. The active treatment alternative was to treat the condition medically. The group that received the PtDA elected surgery 1.7 percent less than the control group. The PtDA group also elected drug therapy 2.1 percent more of the time than the control group. We estimated the cost of the drug therapy by using a cost estimate of the prevailing drug therapy in 2002.¹³²

¹³¹ Barry, M. *et al* "A Randomized Trial of a Multimedia Shared Decision-Making Program for Men Facing a Treatment Decision for a Benign Prostatic Hyperplasia", Disease Management and Clinical Outcomes 1:1:5-14,1997.

¹³² Dull, P. *et al*, "Managing Benign Prostate Hyperplasia", American Family Physician, July 1, 2002. Found at <http://www.aafp.org/afp/20020701/77.html>. Growth rates to grow costs to 2008 found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

The group that utilized PtDAs had an incidence of electing the invasive procedure 1.7 percent less and drug therapy 2.1 percent more than the control group. Reductions in the incidence of the invasive procedure types were estimated in the same proportion they occur under current policy.

Our estimates of the total costs for the invasive procedures under current law are \$36.2 million over 5 years and \$55.7 million over 10 years. We estimated the increase in drug expenditures to be \$2.9 million over 5 years and \$6.8 million over 10 years. We estimate the net cost under the policy proposal to be \$38.3 million over 5 years and \$61.2 million over 10 years. We estimated cost to Medicare to be \$4.5 million over 5 years and \$25.8 million over 10 years (*Figure 4*). The policy results in increased costs to Medicare in the projection because the drug costs are projected to grow at a faster rate than the cost of the invasive procedures.

Figure 4
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Prostatectomy
(in millions)

Year	Projected Medicare Expenditures for Prostatectomy Procedure under current Policy ^{a/}	Projected Medicare Expenditures for Prostatectomy Procedure under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures for Drug Therapy under Policy Proposal ^{c/}	Projected Medicare Expenditures for Prostatectomy with Drug Therapy increase under Policy Proposal	Projected Cost to Medicare under Policy Proposal	Projected Cost to Medicare under Policy Proposal (Cum.)
2008	\$27.0	\$26.0	\$0.5	\$26.9	-\$0.2	-\$0.2
2009	28.9	27.8	1.0	29.2	0.3	0.1
2010	31.0	29.8	1.6	31.8	0.9	1.0
2011	33.5	32.3	2.2	35.0	1.4	2.5
2012	36.2	34.9	2.9	38.3	2.1	4.5
2013	39.5	38.1	3.7	42.3	2.8	7.3
2014	42.9	41.4	4.5	46.4	3.5	10.8
2015	46.8	45.0	5.4	51.1	4.3	15.1
2016	51.0	49.1	6.4	56.2	5.2	20.3
2017	\$55.7	\$54.4	\$6.8	\$61.2	\$5.5	\$25.8

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline: Medicare.

b/ b/Current Policy expenditures reduced by 1.7 percent for 98 percent of providers. Two percent of costs reduced by 10 percent to represent non-participating providers.

c/Cost of drug therapy for Prostatic Hyperplasia found on report at <http://www.aafp.org/afp/20020701/77.html>. Growth rates to grow costs to 2008 found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Stroke Prevention in Atrial Fibrillation (AF)

Malcolm et al (1999) studied the effect of a decision aid on patients at risk of a stroke due to atrial fibrillation. The patients in the study had to choose between aspirin or warfarin as the antithrombotic therapy. Aspirin is less effective than warfarin in stroke prevention but there is a lower risk of excessive bleeding.¹³³ Malcolm found that the patients given the decision tool selected warfarin 3.7 percent less than those patients that did not receive the tool. We estimate the annual cost of warfarin to be \$1,360.0.¹³⁴ We estimate 2.3 million Medicare beneficiaries experienced AF and 34 percent of them would be prescribed warfarin.¹³⁵

Eckman et al (1998) showed the marginal life-time medical costs for individuals taking aspirin to be \$1792.0 greater than patients taking warfarin in 1998.¹³⁶ We estimate those costs would be \$3670.0 per patient in 2008. We estimate the net cost to Medicare after adjusting for the decreased drug expenditures and the increased medical expenditures to be \$2.1 billion over 5 years and \$5.0 billion over 10 years (*Figure 5*).

¹³³ Malcolm, et al, "A Patient Decision Aid Regarding Antithrombotic Therapy for Stroke Prevention in Atrial Fibrillation" JAMA, August 1999, Vol 282, No.8

¹³⁴ Gage, et al "Stroke-Preventing drug cost-effective, improves life expectancy", JAMA, Dec 1996. The drug cost was grown to 2008 using using the growth rate in Prescription Drug Prices
<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

¹³⁵ Gabe, et al, "Adverse outcomes and predictors of underuse of antithrombotic therapy in Medicare beneficiaries with chronic atrial fibrillation." JAMA , April 2000

¹³⁶ Eckman, et al, "Making Decisions about Antithrombotic Therapy in Heart Disease: Decision Analytic and Cost-Effectiveness Issues

Figure 5
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Stroke Prevention
(in millions)

Year	Projected Medicare Expenditures for Stroke Prevention under current Policy ^{a/}	Projected Medicare Expenditures for Stroke Prevention under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures for Increased Morbidity under Policy Proposal ^{c/}	Projected Medicare Expenditures for Stroke Prevention with Morbidity Increase under Policy Proposal ^{d/}	Projected Cost to Medicare under Policy Proposal	Projected Cost to Medicare under Policy Proposal (Cum.)
2008	\$1,215.7	\$1,170.7	\$417.2	\$1,572.6	\$356.9	\$356.9
2009	1,317.8	1,269.1	448.9	1,701.3	383.5	740.4
2010	1,431.2	1,378.2	483.9	1,844.1	412.9	1,153.2
2011	1,558.5	1,500.9	519.2	2,000.4	441.9	1,595.1
2012	1,700.4	1,637.5	557.6	2,173.7	473.3	2,068.4
2013	1,858.5	1,789.7	601.7	2,368.0	509.5	2,577.9
2014	2,033.2	1,958.0	648.0	2,580.4	547.1	3,125.0
2015	2,226.4	2,144.0	696.6	2,812.5	586.2	3,711.2
2016	2,442.3	2,352.0	750.2	3,071.4	629.1	4,340.3
2017	\$2,442.3	\$2,352.0	\$809.5	\$3,130.7	\$688.4	\$5,028.6

a/Average cost of warfarin * 34 percent of Medicare beneficiaries that experience Atrial Fibrillation in 2005. Costs grown using projected growth in prescription drug expenditures found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/3.7 percent decline under baseline expenditures reflecting drop in utilization.

c/ Annualized lifetime cost increase due to decreased warfarin utilization*# of beneficiaries selecting aspirin.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

Hypertension

Montgomery et al (2001) examined the effect of a decision aid used by hypertensive candidates for blood pressure reducing medications. The decision tool informed the candidates of the risks and side effects of the drugs. Montgomery found that candidates that received the aids chose to begin taking medication 7 percent more than candidates that did not receive the decision aid.¹³⁷

We estimate that 21.5 percent of Medicare beneficiaries have hypertension and 53 percent of them are currently on blood pressure lowering medication.¹³⁸ Graden (2003) found that

¹³⁷ Montgomery, et al, "Shared decision making in hypertension: the impact of patient preferences on treatment choice." Family Practice, Oxford University Press, January 2001.

¹³⁸ Vasan, et al, "Impact of high-normal blood pressure on the risk of cardiovascular disease.", New England Journal of Medicine 2001, Nov 1;345(18):1291-7.

persistent use of blood pressure lowering medication lowered annual medical costs by 19 percent.¹³⁹

We estimated the total expenditure by Medicare on hypertension medications would be \$4.7 billion in 2008.¹⁴⁰ After adjusting for the decrease in medical expenditures and the increase in drug expenditures, we estimate Medicare would save \$1.5 billion over 5 years and \$3.2 billion over 10 years (*Figure 6*).

Figure 6
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Hypertension Treatment
(in millions)

Year	Projected Medicare Expenditures for Hypertension Treatment under current Policy ^{a/}	Projected Medicare Expenditures for Hypertension Treatment under Policy Proposal ^{b/}	Projected Decrease in Medicare Expenditures for Decreased Morbidity under Policy Proposal ^{c/}	Projected Medicare Expenditures for Hypertension Treatment with Morbidity Reduction under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$4,690.0	\$5,018.2	\$640.5	\$4,436.8	\$253.2	\$253.2
2009	5,084.0	5,439.7	690.5	4,813.3	270.7	523.9
2010	5,521.2	5,907.5	740.9	5,236.2	285.0	808.9
2011	6,012.6	6,433.3	795.7	5,713.3	299.2	1,108.1
2012	6,559.7	7,018.7	858.6	6,242.8	316.9	1,425.0
2013	7,169.8	7,671.5	924.7	6,837.1	332.6	1,757.7
2014	7,843.7	8,392.6	994.1	7,497.4	346.3	2,104.0
2015	8,588.9	9,189.9	1,070.6	8,227.5	361.3	2,465.3
2016	9,422.0	10,081.3	1,155.2	9,044.9	377.1	2,842.5
2017	\$10,335.9	\$11,059.2	\$1,246.4	\$9,943.0	\$392.9	\$3,235.4

a/15 billion spend in 2004 (Spurgeon, 2004) represents 7.9 percent of total prescription drug expenditure. 2008 cost derived from 7.9 percent of projected Part D expenditures. Costs grown using projected growth in prescription drug expenditures found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/7 percent increase over baseline expenditures reflecting increased drug utilization.

c/ Cost savings cited in Graden * additional beneficiaries taking hypertension medication.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

¹³⁹ Graden, Suzanne, "National Estimate of Cost of Illness for Hypertension and Non-Persistence with Drug Therapy using the Medical Expenditure Panel Survey." Dissertation, Ohio State University 2003.

¹⁴⁰ Spurgeon, David, "NIH promotes use of lower cost drugs for hypertension", News, BMJ Volume 328 6 March 2004.

Dementia and Tube Feeding

Mitchell et al (2001) investigated the use of a decision aid for substitute decision makers (SDM) on the decision to place a feeding tube into a cognitively impaired patient.¹⁴¹ The aid educated the SDM on the potential risks and possible benefits of the tube placement. Gillik (2000) found there was no improvement in life expectancy or reduction in morbidity due to the introduction of the feeding tube.¹⁴² Mitchell found a 43 percent reduction in the SDMs that had received the decision tool.

Caprio et al (2007) showed the cost of tube placement and maintenance to be \$5,085.0.¹⁴³ We estimate approximately 54,000 dementia patients would receive feeding tubes in 2008.¹⁴⁴ The increased cost of hand feeding over tube feeding will offset some of the savings accrued to Medicare by the reduction in tube placement.¹⁴⁵ We estimate the savings to Medicare to be \$619.1 million over 5 years and \$1.5 billion over 10 years (*Figure 7*).

¹⁴¹ Mitchell, et al, "A Decision Aid for Long-Term Tube Feeding in Cognitively Impaired Older Persons", *Journal of American Geriatric Society* 49:313-316, 2001.

¹⁴² G.lick, MR., "Rethinking the Role of Tube Feeding in Patients with Advanced Dementia." *New England Journal of Medicine.*, 2000:342:206-210.

¹⁴³ Caprio, et al, "End-of-Life care for Nursing Home Residents with Advanced Dementia and Feeding Problems: A Cost-Consequence Analysis." AGS Meeting, May 2007 - Seattle, WA.

¹⁴⁴ See note 27. Gillick estimated in 1995 a third of the 121,000 elderly patients with feeding tubes had Dementia. We used 30 percent of the 121,000 and grew it to 2008 using population growth.

¹⁴⁵ See note 28.

Figure 7
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program
on Long Term Tube Feeding in Dementia patients
(in millions)

Year	Projected Medicare Expenditures for Feeding Tube Placement under current Policy ^{a/}	Projected Medicare Expenditures for Feeding Tube Placement under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures due to Increased Feeding Costs under Policy Proposal ^{c/}	Projected Medicare Expenditures for Feeding Tube Placement with Increased Feeding costs under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$273.1	\$155.7	\$14.4	\$166.7	\$106.4	\$106.4
2009	293.9	167.5	15.5	179.3	114.5	220.9
2010	316.8	180.6	16.8	193.3	123.4	344.4
2011	339.9	193.7	18.0	207.4	132.5	476.8
2012	365.1	208.1	19.3	222.8	142.3	619.1
2013	393.9	224.5	20.8	240.4	153.5	772.6
2014	424.2	241.8	22.4	258.9	165.3	937.9
2015	456.0	259.9	24.1	278.3	177.7	1,115.6
2016	491.2	280.0	26.0	299.8	191.4	1,307.0
2017	\$530.0	\$302.1	\$28.0	\$323.4	\$206.5	\$1,513.6

a/Cost of Feeding Tube insertion and maintenance (Caprio 2007) * number of elderly that received tubes and have dementia. Costs grown using projected growth in medicare expenditures found at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

b/43 percent decline under baseline expenditures reflecting increased drug utilization.

c/ Feeding costs paid by Medicare (17% of total feeding increase) . Medicare pays 17% of nursing home expenses.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

Colon Cancer Screening

Dolan et al (2002) performed a study of the impact of a decision aids on a candidate's decision to undergo colorectal cancer screening. The decision tool included information of the different screening procedures, the mortality rate of colorectal cancer and the impact of early detection on that rate. Dolan found a 19 percent increase in the decision to be screened by the candidates that received the decision tool. ¹⁴⁶

Frazier et al (2000) estimated a 58 percent decline in incidence of colorectal cancer due to screening. We estimate an increase of 7,700 cases detected early due to increased screening. ¹⁴⁷

¹⁴⁶ Dolan, et al "Randomized Controlled Trial of a Patient Decision Aid for Colorectal Cancer Screening", Medical Decision Making, Apr 2002.

¹⁴⁷ Frazier et al, "Cost Effectiveness of Screening for Colorectal Cancer in the General Population." JAMA 2000.283:1954-1961.

Pyenson et al (2005) estimated the cost of treating invasive colorectal cancer was to be \$4,500.0 per member per month.¹⁴⁸ We estimated the rate that Medicare would pay would be \$4,050.0 per member per month. We estimate the net savings to Medicare after adjusting for the increased testing costs and reduced expenditure on treating cancer would be \$1.6 billion over 5 years and \$3.8 billion over 10 years (*Figure 8*).

Figure 8
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Colon Cancer Screening
(in millions)

Year	Projected Medicare Expenditures for Colon Cancer Screening under current Policy ^{a/}	Projected Medicare Expenditures for Colon Cancer Screening under Policy Proposal ^{b/}	Projected Decrease in Medicare Expenditures for Decreased Morbidity under Policy Proposal ^{c/}	Projected Medicare Expenditures for Colon Cancer Screening with Morbidity Reduction under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$637.7	\$758.8	\$374.7	\$376.2	\$261.5	\$261.5
2009	686.2	816.5	409.5	398.4	287.8	549.3
2010	739.7	880.2	447.6	423.3	316.4	865.7
2011	793.7	944.5	476.7	457.8	335.9	1,201.6
2012	852.4	1,014.4	512.9	490.7	361.7	1,563.2
2013	919.7	1,094.5	552.9	530.0	389.7	1,953.0
2014	990.6	1,178.8	593.3	573.0	417.5	2,370.5
2015	1,064.9	1,267.2	637.2	616.6	448.3	2,818.8
2016	1,146.8	1,364.7	687.5	662.8	484.1	3,302.9
2017	\$1,237.4	\$1,472.6	\$740.5	\$716.5	\$520.9	\$3,823.8

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

b/19 percent increase over baseline expenditures reflecting increased screening.

c/ 58 percent of the cancer's costs* number of beneficiaries screened *incidence.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

Prostate Cancer Screening

Volk et al (1999) evaluated the impact of a decision tool educating men in the decision to be screened for prostate cancer. Eligible candidates were men currently without prostate cancer and no history of prostate cancer. Volk found an 18 percent reduction in screening by the men that received the decision tool.¹⁴⁹

¹⁴⁸ Pyenson et al, "Cancer Screening: Payer Cost/Benefit thru Employee Benefits Programs.

¹⁴⁹ Volk et al, "Randomized Controlled Trial of Shared Decision Making for Prostate Cancer Screening", Arch. Family Med., Vol 8, July/Aug 1999.

Geol et al (2005) showed a 35 percent reduction in the incidence of metastatic prostate cancer. We estimate 2,757 new cases of metastatic prostate cancer to occur due to the decline in testing.¹⁵⁰ The mortality rate for metastatic prostate cancer is 56 percent. R M Benoit, et al (2001) showed that the annual savings in medical expenditures saved for each avoided death from prostate cancer to be \$7,088.0 per year.¹⁵¹ Consequently, the increased mortality resulting from the decline in screening would increase medical expenditures. We estimate a net savings to Medicare due to a decline in screening expenditures after the increase in medical expenditures resulting from added cancer cases. We estimate Medicare saves \$54.8 million over 5 years and \$134.0 million over 10 years (*Figure 9*).

Figure 9
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Prostate Cancer Screening
(in millions)

Year	Projected Medicare Expenditures for Prostate Cancer Screening under current Policy ^{a/}	Projected Medicare Expenditures for Prostate Cancer Screening under Policy Proposal ^{b/}	Projected Increase in Medicare Expenditures for Increased Morbidity under Policy Proposal ^{c/}	Projected Medicare Expenditures for Prostate Cancer Screening with Morbidity Increase under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$105.8	\$86.7	\$55.8	\$96.3	\$9.4	\$9.4
2009	113.8	93.3	60.1	103.7	10.1	19.6
2010	122.7	100.6	64.8	111.7	10.9	30.5
2011	131.6	107.9	69.5	119.9	11.7	42.2
2012	141.4	115.9	74.7	128.8	12.6	54.8
2013	152.5	125.1	80.5	138.9	13.6	68.4
2014	164.3	134.7	86.8	149.6	14.6	83.0
2015	176.6	144.8	93.3	160.9	15.7	98.8
2016	190.2	156.0	100.4	173.3	16.9	115.7
2017	\$205.2	\$168.3	\$108.4	\$186.9	\$18.3	\$134.0

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline: Medicare.

b/18 percent decline under baseline expenditures reflecting increased screening.

c/ 35 percent of the cancer's costs* number of beneficiaries screened *incidence.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

¹⁵⁰ Goel et al, "Early Prostate Cancer Screening may Decrease Mortality Rate", Journal of Urology, August 2005.

¹⁵¹ Benoit et al, "A quantitative Analysis of the costs and benefits of Prostate Cancer Screening", Prostate Cancer and Prostate Diseases, 2001 Volume 4, Number 3, 138-145.

Menorrhagia Treatment

Kennedy et al (2002) conducted a randomized controlled trial on a decision aid for the treatment of Menorrhagia. The aid presented information on the prevailing treatment choices including the risks and side effects. Women participating in the trial could choose between a hysterectomy and medical treatment for the condition. Kennedy found that the group of women given the decision aid selected hysterectomy 38 percent less than the women that did not receive the tool.¹⁵²

Hurskainen et al (2004) found the long term medical expenditures of women that were treated medically for Menorrhagia to be 61 percent of those that received a hysterectomy.¹⁵³ We estimated the savings to Medicare to be \$45.9 million over 5 years and \$112.3 million over 10 years (*Figure 10*).

Figure 10
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Menorrhagia Treatment (in millions)

Year	Projected Medicare Expenditures for Menorrhagia Treatment under current Policy ^{a/}	Projected Medicare Expenditures for Menorrhagia Treatment under Policy Proposal ^{b/}	Projected Increase Medicare Expenditures due to alternative Therapy under Policy Proposal ^{c/}	Projected Medicare Expenditures for Menorrhagia with Alternative Therapy Cost under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$49.1	\$30.4	\$11.4	\$41.2	\$7.9	\$7.9
2009	52.8	32.8	12.2	44.3	8.5	16.4
2010	57.0	35.3	13.2	47.8	9.2	25.6
2011	61.1	37.9	14.2	51.3	9.8	35.4
2012	65.6	40.7	15.2	55.1	10.6	45.9
2013	70.8	43.9	16.4	59.4	11.4	57.3
2014	76.3	47.3	17.7	64.0	12.3	69.6
2015	82.0	50.8	19.0	68.8	13.2	82.8
2016	88.3	54.8	20.5	74.1	14.2	97.0
2017	\$95.3	\$59.1	\$22.1	\$80.0	\$15.3	\$112.3

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

b/38 percent decline under baseline expenditures reflecting decreased occurrence of hysterectomy.

c/ 61 percent of the hysterectomy costs for candidates that select medical therapy.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

¹⁵² Kennedy, et al "Effects of Decision Aids for Menorrhagia on Treatment Outcomes, and Costs", JAMA December 2002.

¹⁵³ Hurskainen et al, "Clinical Outcomes and Costs With the Levonorgestrel-Releasing Intrauterine System or Hysterectomy for Treatment of Menorrhagia" JAMA March 24/31, 2004 - Vol 291, No. 12.

Coronary Obstructive Pulmonary Disease (COPD)

Dales et al (1999) investigated the impact of a decision aid the decision to introduce mechanical ventilation for patients with advanced COPD. The choice presented to patients with COPD was in the event of respiratory failure to receive mechanical ventilation or receive palliative care. The decision to receive palliative care would result in 100 percent mortality. The results of the study showed that the patients that received the decision tool elected palliative care 10 percent more of the time than the patients that did not receive the tool.¹⁵⁴ We estimated the combined savings of reduced medical costs from the patients that receive palliative care and the cost of mechanical ventilation to be \$59.7 million over 5 years and \$145.9 million over 10 years (*Figure 11*).

Figure 11
Projected Savings to Medicare from Implementing Patient Decision Sharing in the Medicare Program on Mechanical Ventilation for Coronary Obstructive Pulmonary Disease (COPD) (in millions)

Year	Projected Medicare Expenditures for Mechanical Ventilation for COPD under current Policy ^{a/}	Projected Medicare Expenditures for Mechanical Ventilation for COPD under Policy Proposal ^{b/}	Projected Decrease in Medicare Expenditures under Policy Proposal ^{c/}	Projected Medicare Expenditures for Mechanical Ventilation for COPD with reduced Medicare Expenditures under Policy Proposal ^{d/}	Projected Savings to Medicare under Policy Proposal	Projected Savings to Medicare under Policy Proposal (Cum.)
2008	\$53.5	\$48.2	\$4.2	\$43.3	\$10.3	\$10.3
2009	57.6	51.9	4.6	46.6	11.0	21.3
2010	62.1	55.9	4.9	50.2	11.9	33.2
2011	66.6	60.0	5.3	53.9	12.8	46.0
2012	71.6	64.4	5.7	57.9	13.7	59.7
2013	77.2	69.5	6.1	62.4	14.8	74.5
2014	83.2	74.9	6.6	67.2	15.9	90.4
2015	89.4	80.5	7.1	72.3	17.1	107.6
2016	96.3	86.7	7.6	77.8	18.5	126.0
2017	\$103.9	\$93.5	\$8.2	\$84.0	\$19.9	\$145.9

a/2005 Medicare MEDPAR data set and 2005 Medicare 5 percent Outpatient data sets. Expenditures grown using Fact Sheet for CBO's March 2007 Baseline:Medicare.

b/10 percent decline under baseline expenditures reflecting increased use of palliative care.

c/ The COPD costs for the 10 percent that elect palliative care.

d/New expenditure-Change in medical costs + Savings from cut in savings rate to providers that did not provide PtDA.

¹⁵⁴ Dales, et al "Intubation and Mechanical Ventilation for COPD: Development of an Instrument to Elicit Patient Preferences." *Chest* 1999;116;792-800

Savings to National Health Spending and Payers

We estimate the net savings to Medicare from the implementation of PtDA on the eleven procedures to be \$3.1 billion over 5 years and \$7.6 billion over 10 years (*Figure 12*). The portion of the savings to Medicare we estimate subject to a cost shift is \$68.1 million over 5 years and \$164.4 million over 10 years. After adjusting for the net affect of costs and savings to the other payers, national health spending accrues a saving of \$3.8 billion over 5 years and \$9.3 billion over 10 years.

Since the implementation of PtDAs generates savings by improving utilization management and health outcomes, beneficiaries and payers providing wrap around coverage to Medicare beneficiaries would also accrue savings. We estimate savings to the payer groups (*Figure 13*) as follows. We estimate the savings to out-of-pocket expenses at \$347.7 million over 5 years and \$904.1 million over 10 years. We estimate the savings to household insurance premiums to be \$105.7 million over 5 years and \$255.3 million over 10 years. We estimated the savings to private employers to be \$146.9 million over 5 years and \$354.9 million over 10 years. We estimated the combined savings of the Medicare program and reduction in Federal retiree expenses to the Federal government to be \$3.1 billion over 5 years and \$7.6 billion the 10 year period. We estimate the savings to State and Local governments to be \$70.7 million over 5 years and \$170.7 million over 10 years.

Figure 12
Projected Savings to Medicare and National Health Spending from Implementing Patient Decision
Sharing in the Medicare Program
(in millions)

Year	Spending on Procedures under Current Law	Spending on Procedures under Policy	Cost of Policy	Savings to Medicare	Savings to Medicare (Cum)	Savings subject to Cost Shift	Savings subject to Cost Shift (Cum)	Savings to National Health Spending	Savings to National Health Spending (Cum)
2008	\$8,710.6	\$8,119.6	\$46.8	\$543.7	\$543.7	\$11.8	\$11.8	\$666.7	\$666.7
2009	9,394.5	8,758.3	50.4	585.2	1,128.8	12.7	24.5	714.0	1,380.7
2010	10,158.1	9,476.3	54.1	627.1	1,755.9	13.6	38.2	766.1	2,146.8
2011	11,014.3	10,291.3	58.1	664.2	2,420.1	14.5	52.6	811.6	2,958.5
2012	11,961.2	11,186.6	62.7	711.1	3,131.2	15.5	68.1	869.7	3,828.2
2013	13,034.8	12,205.6	67.5	760.9	3,892.1	16.6	84.7	928.2	4,756.4
2014	14,204.9	13,322.4	72.6	809.0	4,701.1	17.6	102.4	993.3	5,749.7
2015	15,492.2	14,549.1	78.2	864.1	5,565.2	18.9	121.2	1,057.2	6,807.0
2016	16,925.1	15,914.0	84.4	925.8	6,491.0	20.2	141.5	1,132.7	7,939.6
2017	\$17,351.1	\$16,204.4	\$91.0	\$1,054.5	\$7,545.5	\$22.9	\$164.4	\$1,288.5	\$9,228.1

Sources: Lewin Group Estimates

Figure 13
Distribution of Projected Savings to Payer Groups from Implementing Patient Decision Sharing in the Medicare Program Medicare Program.
(in millions)

Year	Out-of-pocket	Out-of-pocket (cum.)	Household insurance premiums	Household insurance premiums (Cum.)	Private Employer Savings	Private Employer Savings (Cum.)	Federal Savings ^{a/}	Federal Savings (Cum.)	State and Local	State and Local (Cum.)
2008	\$65.0	\$65.0	\$19.0	\$19.0	\$26.4	\$26.4	\$4.7	\$4.7	\$12.7	\$12.7
2009	70.0	135.0	19.3	38.3	26.9	53.3	4.8	9.5	12.9	25.6
2010	75.0	210.0	21.0	59.3	29.2	82.5	5.2	14.7	14.1	39.7
2011	79.5	289.5	22.3	81.6	31.0	113.5	5.5	20.2	14.9	54.6
2012	85.2	374.7	24.1	105.7	33.5	146.9	6.0	26.2	16.1	70.7
2013	91.2	465.9	25.0	130.8	34.8	181.7	6.2	32.4	16.8	87.4
2014	97.1	563.0	28.5	159.2	39.7	221.4	7.1	39.5	19.0	106.4
2015	103.7	666.8	29.3	188.6	40.8	262.2	7.3	46.7	19.6	126.0
2016	111.2	778.0	31.4	219.9	43.6	305.8	7.8	54.5	21.0	147.0
2017	\$126.1	\$904.1	\$35.4	\$255.3	\$49.2	\$354.9	\$8.8	\$63.3	\$23.7	\$170.7

a/Savings associated with reductions in Federal Retirees.

Source: Lewin Group Estimates.

XV. VALUE DRIVEN BENEFIT PLANS: MODIFY FEDERAL HSA LEGISLATION

The purpose of this analysis is to investigate the cost impacts of the proposal to modify the Federal Health Savings Account (HSA) legislation. The goals of the modifications are to encourage more value driven health benefit designs, encourage preventive care, manage chronic disease, and to target the tax preference to middle and low income families.

There are three modifications to the HSA provision in the policy proposal. The first would lower the deductible threshold for individuals from \$1,000 to \$350 and \$2,000 to \$500 for families. The second would cap the upper deductible range at \$1,000 for individuals and \$2,000 for families. The final modification would exclude individuals and families with incomes that exceeded the current income ceiling for traditional and ROTH IRAs.

In addition, the proposal would exempt preventive care services, primary care visits, essential and generic drugs, and essential chronic care services from the deductible. HSAs for employer plans with income related deductibles would be allowed and plans can lower the deductible for low income employees. We estimate the cost of this proposal on national health spending would be \$21.7 billion over 5 years and \$57.8 billion over ten years. We estimate the decline in Federal receipts would be \$35.3 billion over 5 years and \$66.6 billion over 10 years.

Background

The Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA) created the HSA as an instrument for purchasing health care services using tax free dollars. The HSA must be paired with a high deductible health insurance policy. The annual tax deductible contributions to the HSA cannot be greater than the deductible of the health insurance policy. Individuals between the ages of 55 and 65 years of age may make additional contributions. Employers may make contributions to employees' HSAs.

Individuals may use funds from their HSA's to pay for services up to their policy's deductible and for non-covered services. The funds may also be used for non-medical services but the withdrawal would be subject to income tax and a 10 percent penalty. Funds saved in an HSA may be rolled over from year to year. The rationale for the HSA was to restrain the growth in health care spending by giving consumers more control over health care utilization decisions. Buntin et al (2006) found health spending declined 2-7 percent among individuals that switched to a high deductible plan with an HSA.¹⁵⁵

Deductibility

We use the Kaiser Family Foundation and Health Research an Educational Trust (KFF/HRET) 2006 Employer Health Benefits Annual survey to estimate the distribution of covered lives across plans with different deductibles. We use the 2006 Current Population Survey (CPS) March Supplemental to estimate the distribution of covered individuals and families across incomes. We use these estimates to determine the number of covered singles and families that

¹⁵⁵ Buntin, M. et al "Consumer-Directed Health Care: Early Evidence about Effects on Cost and Quality", Health Affairs Web Exclusive, October 24, 2006.

would be impacted by the reduction in the deductibility thresholds, the cap on deductibility, and the individual and family income limits included in the policy.

In 2006, 3.2 million people were using a HSA paired with a high deductible health insurance policy.¹⁵⁶ We estimated a growth rate in HSA take-up based on a Congressional Budget Office (CBO) projection of the reduction in Federal receipts from 2004 to 2014. We estimate under current law HSA enrollment would grow to 5.6 million people in 2008 and 10.8 million by 2017.

Under the policy the deductible threshold falls from \$1,000 to \$350 for singles and \$2,000 to \$500 for families. In addition, singles with incomes greater than \$52,000 and families with incomes greater than \$83,000 are no longer eligible for the HSA. We estimate the net effect of these two policies would leave 23.2 million people eligible in 2008 and 25.0 million in 2017. We assumed a take up of the expanded HSA provision would be similar to the take up rate of 401(k)s. We used a take-up rate of 70 percent and estimated 16.3 million people covered in 2008 and 17.5 million people covered in 2017 (*Figure 1*).¹⁵⁷

Figure 1
Effect of HSA Modification on HSA participation
(numbers in millions)

Year	HSA Enrollment under Current Law	Number of people with Access to HSA due to Threshold Reduction ^{a/}	Number of People Excluded from HSA due to Income Restriction ^{b/}	Net Number of Eligibles for HSA under Policy	Number of people that take-up HAS ^{c/}
2008	5.6	36.5	13.3	23.2	16.3
2009	6.6	36.8	13.4	23.4	16.4
2010	7.2	37.1	13.5	23.6	16.5
2011	8.0	37.4	13.6	23.8	16.7
2012	8.7	37.7	13.7	24.0	16.8
2013	9.1	38.0	13.8	24.2	16.9
2014	9.5	38.4	13.9	24.4	17.1
2015	9.9	38.7	14.1	24.6	17.2
2016	10.3	39.0	14.2	24.8	17.4
2017	10.8	39.3	14.3	25.0	17.5

a/Number of covered lives between current deductible threshold and threshold under policy plus current enrollment in HSA. Source: 2006 HRET data projected using the growth in population.

b/Based on 2006 Current Population Survey (CPS) coverage and income distribution.

c/Net Eligibles *. 70.

We assume that individuals and families that have HSAs and lose the deduction due to the income restriction would switch to a base plan at the average premium and deductible. This

¹⁵⁶ See note 1.

¹⁵⁷ "Enhancing 401(k) Value and Participation, Taking the Automatic Approach", A report for AARP Prepared by Towers Perrin, June 2007

would result in an increase in utilization. Based on an elasticity of -0.2 we estimate utilization would increase by 13.4 percent for this group. We estimate the utilization increase would increase spending by \$8.8 billion over 5 years and \$24.5 billion over 10 years (*Figure 2*).

We assume that individuals and families that have HSAs and are under the income restrictions would switch to a plan at the new deductible cap. This would result in an increase in utilization. Based on an elasticity of -0.2 we estimate utilization would increase by 7.3 percent for this group.¹⁵⁸ We estimate the utilization increase would increase spending by \$8.0 billion over 5 years and \$22.2 billion over 10 years (*Figure 3*).

Figure 2
Effect of Income Restriction on Spending
(in billions)

Year	Spending on Individuals and Families that are Impacted by Income Restriction Under Current Law ^{a/}	Spending on Individuals and Families that are Impacted by Income Restriction Under Policy	Net Increase in Spending Due to Policy	Net Increase in Spending Due to Policy (Cum)
2008	\$9.1	\$10.3	\$1.2	\$1.2
2009	11.2	12.7	1.5	2.7
2010	13.0	14.7	1.7	4.5
2011	15.1	17.2	2.0	6.5
2012	17.4	19.7	2.3	8.8
2013	19.2	21.8	2.6	11.4
2014	21.2	24.0	2.8	14.2
2015	23.3	26.4	3.1	17.4
2016	25.5	28.9	3.4	20.8
\$2017	\$28.0	\$31.7	\$3.7	\$24.5

a/Spending estimates based on OACT/CMS National Health Expenditures of Private Health Insurance Expenditure projections.

Report for growth rate found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Source: Lewin Group Estimate

¹⁵⁸ Newhouse et al “Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment”, The American Economic Review, Vol. 77, No. 3 (Jun., 1987), pp. 251-277

Figure 3
Effect of Lower Deductibility Cap on Spending
(in billions)

Year	Spending on Individuals and Families with High Deductible Plan and HSA Under Current Law ^{a/}	Spending on Individuals and Families with High Deductible Plan and HSA Under Policy	Net Increase in Spending Due to Policy	Net Increase in Spending Due to Policy (Cum)
2008	\$15.4	\$16.5	\$1.1	\$1.1
2009	18.90	20.27	1.37	2.5
2010	21.89	23.48	1.59	4.1
2011	25.42	27.27	1.85	5.9
2012	29.14	31.25	2.12	8.0
2013	32.15	34.48	2.33	10.4
2014	35.35	37.92	2.57	12.9
2015	38.76	41.57	2.81	15.8
2016	42.41	45.49	3.08	18.8
\$2017	\$46.4	\$49.8	\$3.4	\$22.2

a/Spending estimates based on OACT/CMS National Health Expenditures of Private Health Insurance Expenditure projections. Report for growth rate found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Source: Lewin Group Estimate

Preventive Services and Generic drugs

We use the Kaiser Family Foundation and Health Research an Educational Trust (KFF/HRET) 2006 Employer Health Benefits Annual survey to estimate the share of the covered population where the deductible applies to preventive services. We also use this data to estimate the average deductible. We estimate that 57.0 percent of the privately covered population has to pay a deductible on preventive services and that the average deductible is approximately \$500. In the case of generic drugs, 24 percent of prescription drug expenditures are for generic drugs. Currently, 48 percent of covered lives have to pay a deductible for generic drugs.¹⁵⁹ Based on an elasticity of -0.2 and the \$500 decline in out-of-pocket expenses, we estimate a 10.4 percent increase in the utilization of preventive services and generic drugs.^{160, 161} We estimate savings from increased preventive service utilization would be a savings of \$640.0 million over 5 years and \$2.1 billion over 10 years (*Figure 4*). We estimate the increased utilization of generic drugs would cost \$5.5 billion over 5 years and \$13.2 billion over 10 years (*Figure 5*).

¹⁵⁹ Report found at: <http://www.gphaonline.org/Content/NavigationMenu/AboutGenerics/Statistics/default.htm>.

¹⁶⁰ Newhouse et al "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment", *The American Economic Review*, Vol. 77, No. 3 (Jun., 1987), pp. 251-277

¹⁶¹ Out-of-Pocket costs taken from Report for growth rate found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Figure 4
Savings to National Health Spending Due to the Elimination of the Deductible on Preventive Services
(dollars in billions, population in millions)

Year	Covered Population Utilizing Preventive Services Under Current Law	Increase in Utilizing Population Under Policy	Savings Due to Increased Utilization of Preventive Services	Savings Due to Increased Utilization of Preventive Services (Cum)
2008	63.5	6.6	\$0.03	\$0.03
2009	64.0	6.7	0.07	0.11
2010	64.6	6.7	0.12	0.23
2011	65.1	6.8	0.17	0.41
2012	65.6	6.8	0.23	0.64
2013	66.2	6.9	0.25	0.89
2014	66.7	6.9	0.27	1.17
2015	67.2	7.0	0.29	1.46
2016	67.8	7.0	0.32	1.78
2017	68.3	7.1	\$0.34	\$2.12

Source: Lewin Group Estimate

Figure 5
Increase in National Health Spending Due to Increased Utilization of Generic Drug
(dollars in billions)

Year	Generic Drug Utilization Under Current Law a/	Generic Drug Utilization Under Current Law Under Policy	Increase in Spending Savings Due to Policy	Increase in Spending Savings Due to Policy (Cum)
2008	\$9.4	\$10.4	\$1.0	\$1.0
2009	9.9	11.0	1.0	2.0
2010	10.5	11.6	1.1	3.1
2011	11.1	12.3	1.2	4.3
2012	11.7	13.0	1.2	5.5
2013	12.6	13.9	1.3	6.8
2014	13.6	15.0	1.4	8.2
2015	14.7	16.2	1.5	9.7
2016	15.8	17.5	1.6	11.4
2017	\$17.1	\$18.9	\$1.8	\$13.2

a/Spending estimates based on OACT/CMS National Health Expenditures of Private Health Insurance Expenditure projections. Report for growth rate found at:

<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2006.pdf>

Source: Lewin Group Estimate

Federal Receipts

We use the CBO cost estimate of the Health Savings Account Availability Act (H.R. 2351) as the basis for estimating baseline Federal receipts under current law and the change in Federal receipts due to the policy.¹⁶² We estimate an increase in Federal receipts from restricting participation to individuals and families that are under the income limits of the traditional and ROTH IRAs. We estimate there would be an offsetting decrease in receipts due to the greater number of individuals and families that could use an HSA under the lower deductible thresholds. We estimated the net effect of the income limitation, HSA cap, and lower deductible thresholds would result in a net decrease in Federal receipts \$35.3 billion over 5 years and \$66.6 billion over 10 years (*Figure 6*).

Figure 6
Effects of HSA Modification on Federal Receipts
(in billions)

Year	Cost of HSA Under Current Law a/	Increase in Federal Receipts Due to Income Limit on Deductibility	Decrease in Federal Receipts Due to Deductible Threshold and Cap	Net Decrease in Federal Receipts Due to HSA Under Policy	Decrease in Federal Receipts Due to HSA Under Policy (Cum)
2008	\$6.9	\$2.5	\$10.1	\$7.6	\$7.6
2009	8.1	2.9	10.2	7.3	14.8
2010	8.9	3.2	10.3	7.1	21.9
2011	9.8	3.6	10.4	6.8	28.7
2012	10.7	3.9	10.4	6.6	35.3
2013	11.1	4.1	10.5	6.5	41.7
2014	11.6	4.2	10.6	6.4	48.1
2015	12.2	4.4	10.7	6.3	54.4
2016	12.7	4.6	10.8	6.2	60.5
2017	\$13.3	\$4.8	\$10.9	\$6.0	\$66.6

a/ Estimates based on CBO projection of HSA caused loss in revenue. H.R. 2351 Health Savings Account Availability Act, Congressional Budget Office Cost Estimate, June 23, 2003.

Source: Lewin Group Estimate

Effects on National Health Spending and Payers

We estimated the combined effects of the changes the policy would be an increase in national health spending of \$21.7 billion after 5 years and \$57.8 billion after 10 years (*Figure 7*). The increase in spending is shared between out-of-pocket and private health insurance. We estimate the cost to out-of-pocket to be \$5.5 billion over 5 years and \$14.6 billion over 10 years. We estimate the cost to private health insurance to be \$16.6 billion over 5 years and \$44.2 billion over 10 years (*Figure 8*).

¹⁶² H.R. 2351 Health Savings Account Availability Act, Congressional Budget Office Cost Estimate, June 23, 2003.

Figure 7
Effects of HSA Modification on National Health Spending
(in billions)

Year	Increase in HSA Spending	Increase in Generic Drug Spending	Savings From Preventive Services	Increase in National Health Spending	Increase in National Health Spending (Cum)
2008	\$2.3	\$1.0	\$0.03	\$3.3	\$3.3
2009	2.9	1.0	0.07	3.8	7.1
2010	3.3	1.1	0.12	4.3	11.4
2011	3.9	1.2	0.17	4.9	16.3
2012	4.4	1.2	0.23	5.4	21.7
2013	4.9	1.3	0.25	6.0	27.7
2014	5.4	1.4	0.27	6.5	34.2
2015	5.9	1.5	0.29	7.2	41.4
2016	6.5	1.6	0.32	7.8	49.2
2017	\$7.1	\$1.8	\$0.34	\$8.6	\$57.8

Source: Lewin Group Estimate

Figure 8
Effects of HSA Modification on Payers
(in billions)

Year	Out-of-Pocket Costs	Cost to Out-of-Pocket (cum.)	Private Health Insurance Costs	Private Health Insurance Costs (Cum.)
2008	\$0.8	\$0.8	\$2.5	\$2.5
2009	1.0	1.8	2.9	5.4
2010	1.1	2.9	3.3	8.7
2011	1.2	4.1	3.7	12.5
2012	1.4	5.5	4.2	16.6
2013	1.5	7.0	4.6	21.2
2014	1.7	8.7	5.0	26.2
2015	1.8	10.5	5.5	31.7
2016	2.0	12.4	6.0	37.7
2017	\$2.2	\$14.6	\$6.6	\$44.2

Source: Lewin Group Estimate

XVI. COMBINED ESTIMATE FOR HIT, CENTER FOR CLINICAL EFFECTIVENESS, PUBLIC HEALTH, MEDICAL HOME, MEDICARE ADVANTAGE, RX NEGOTIATIONS AND EPISODE OF CARE/FFS

Building Consensus

We have estimated the combined effect of the seven proposals to be implemented with the Building Consensus proposal. We estimated effects on aggregate spending and the different payer groups. The estimates for HIT, the Center for Clinical Effectiveness, Public Health, Medical Home and RX Negotiations are additive. The Episode of care/FFS proposal will interact with the Medical Home and Medicare Advantage proposals.

The savings from Medical Home are derived from more efficient use of primary care in health care utilization, particularly in the ambulatory setting. This savings would overlap with the savings associated with Episode of care/FFS in the ambulatory setting. We re-estimated the savings associated with Episode of care/FFS excluding the savings associated with ambulatory care. In addition, the Medical Home estimates were adjusted to reflect the increased enrollment in Medicare, Medicaid, and Private Insurance.

In addition, the Episode of care/FFS proposal derives savings by reducing the FFS county rates. The Medicare Advantage proposal derives savings by resetting the benchmark rate to the FFS county rates. Since the FFS county rates are reduced by the Episode of care proposal, the savings from the Managed Care Excess Payments proposal would be increased. The combined savings for the seven proposals is \$496.4 billion over 5 years and \$1.8 trillion over 10 years. We show the combined estimate in *Figure 1*. We show the effects on the Payers in *Figure 2*. These savings are not net the cost of insurance implemented in Building Consensus proposal.

Figure 1
Savings for 7 Proposals Implemented with the Building Consensus Proposal
(in billions)

Year	HIT a/	Public Health: Smoking	Public Health: Obesity	Clinical Effect.	Medical Home	Medicare Advant.	RX Neg.	Episode of care	Total	Total (Cum)
2008	-\$8.0	\$4.5	\$0.0	\$16.4	\$7.2	\$6.4	\$5.7	\$13.9	\$46.1	\$46.1
2009	-\$5.7	\$10.2	\$7.3	\$18.8	\$10.7	\$7.5	\$6.5	\$14.5	\$69.8	\$116.0
2010	-\$2.8	\$13.4	\$15.5	\$21.5	\$18.3	\$8.4	\$7.2	\$15.3	\$96.9	\$212.9
2011	\$0.1	\$16.6	\$24.9	\$24.6	\$27.1	\$9.3	\$8.6	\$16.2	\$127.3	\$340.2
2012	\$2.8	\$19.6	\$35.5	\$28.1	\$34.9	\$10.2	\$8.1	\$17.2	\$156.2	\$496.4
2013	\$9.9	\$22.0	\$47.5	\$31.8	\$37.5	\$11.0	\$9.8	\$18.3	\$187.9	\$684.3
2014	\$16.4	\$24.0	\$61.0	\$36.3	\$40.4	\$11.9	\$11.0	\$19.6	\$220.4	\$904.7
2015	\$20.9	\$25.5	\$75.9	\$40.8	\$43.6	\$12.8	\$12.3	\$20.9	\$252.8	\$1,157.5
2016	\$25.4	\$26.3	\$92.7	\$46.0	\$47.0	\$13.7	\$15.0	\$22.6	\$288.5	\$1,446.0
2017	\$28.8	\$28.4	\$111.3	\$51.8	\$50.7	\$14.8	\$15.5	\$24.4	\$325.7	\$1,771.8

a/A negative indicates a cost in that year

Figure 2
Combined Savings to Payers
(in billions)

Year	Savings to Households a/	Savings to Private Employers	Savings to Federal	Savings to State and Local	Total	Total (cum)
2008	-\$4.5	-\$2.5	\$50.4	\$2.8	\$46.1	\$46.1
2009	-\$0.9	\$1.5	\$63.0	\$6.2	\$69.8	\$116.0
2010	\$3.5	\$5.8	\$77.6	\$10.0	\$96.9	\$212.9
2011	\$8.6	\$10.4	\$94.0	\$14.3	\$127.3	\$340.2
2012	\$13.7	\$14.9	\$109.1	\$18.6	\$156.2	\$496.4
2013	\$19.0	\$20.8	\$124.9	\$23.1	\$187.9	\$684.3
2014	\$24.6	\$26.9	\$141.0	\$27.9	\$220.4	\$904.7
2015	\$30.1	\$32.6	\$157.5	\$32.6	\$252.8	\$1,157.5
2016	\$35.9	\$38.7	\$176.3	\$37.7	\$288.5	\$1,446.0
2017	\$42.2	\$45.7	\$194.9	\$42.8	\$325.7	\$1,771.8

a/A negative indicates a cost in that year
 Source: Lewin Group Estimates

Seed Money and Revenue Changes

We estimate the costs and revenue changes from the seven options in *Figure 3*. The costs are associated with seed money required to implement the proposal. The revenue changes are associated with changes to tax policy called for in the proposals.

Figure 3
Seed Money and Revenue Changes from Seven Proposals
(in billions)

Year	HIT Federal Cost	Public Health:Smoking		Public Health:Obesity Federal Cost	Clinical Effect. Federal Cost	Medical Home	Medicare Advantage	RX Negotiations	Episode of care
		Federal Revenue Increase	State Revenue Loss						
2008	\$13.19	\$30.98	\$3.40	\$1.15	\$0.76	\$0.00	\$0.00	\$0.00	\$0.00
2009	\$13.50	\$30.70	\$3.36	\$1.15	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00
2010	\$13.81	\$30.44	\$3.33	\$1.14	\$0.87	\$0.00	\$0.00	\$0.00	\$0.00
2011	\$14.12	\$30.19	\$3.30	\$1.14	\$0.93	\$0.00	\$0.00	\$0.00	\$0.00
2012	\$14.45	\$29.95	\$3.26	\$1.14	\$1.00	\$0.00	\$0.00	\$0.00	\$0.00
2013	\$14.78	\$29.73	\$3.23	\$1.14	\$1.07	\$0.00	\$0.00	\$0.00	\$0.00
2014	\$15.12	\$29.53	\$3.20	\$1.14	\$1.15	\$0.00	\$0.00	\$0.00	\$0.00
2015	\$15.47	\$29.34	\$3.17	\$1.14	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00
2016	\$15.83	\$29.17	\$3.15	\$1.14	\$1.31	\$0.00	\$0.00	\$0.00	\$0.00
2017	\$13.14	\$29.03	\$3.12	\$1.14	\$1.40	\$0.00	\$0.00	\$0.00	\$0.00

Source: Lewin Group Estimates