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Evaluation of the Medicare Demonstration to Limit Annual Changes in Part D Premiums

June 2009

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The logo for Acumen, LLC, featuring the word "Acumen" in a large, blue, serif font, with "LLC" in a smaller, blue, sans-serif font to its right.

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EXECUTIVE SUMMARY

Authorized by the Medicare Modernization Act of 2003 (MMA), the Medicare prescription drug program known as Medicare Part D administers benefits to over 26 million beneficiaries through private drug plans. These plans include both standalone prescription drug plans (PDPs) and Medicare Advantage prescription drug plans (MA-PDs), which provide prescription drugs in combination with HMO-style coverage of hospital and physician services. Medicare pays for up to 75 percent of the cost of an average plan, with beneficiaries paying the rest in premiums. Both the direct subsidies paid by the Centers for Medicare & Medicaid Services (CMS) and the monthly premiums paid by beneficiaries are based on the national average of bids submitted by all plans each year.

As defined by the MMA, the national average monthly bid amount is computed by taking an average of PDP and MA-PD plan bids, weighted by each plan's enrollment in a reference month of the previous year. Because PDP plans had no enrollment prior to 2006, CMS calculated the national average bid amount by assigning equal weights to PDP plans, zero weights to new MA-PD plans, and weights for existing MA-PD plans based on enrollment as of March 31, 2005. Given disproportionate enrollment in low cost plans in 2006, a switch to the MMA-defined enrollment weighting methodology for 2007 would have significantly reduced the calculated national average bid. A lower national average bid results in lower CMS subsidies to plans and higher premiums for beneficiaries. To avoid a sharp increase in premiums in the second year of the program, CMS decided to phase in the transition to the enrollment weights methodology by launching the "Medicare Demonstration to Limit Annual Changes in Part D Premiums Due to Beneficiary Choice of Low-Cost Plans." Under this demonstration, the national average bid amount in 2007 and 2008 was a composite of the "uniform weights" methodology used in 2006 and the enrollment weights methodology specified in the MMA. The weighting was 80 percent uniform weights and 20 percent enrollment weights in 2007 and a 40-60 composite in 2008.

This demonstration occurred in the context of rapid growth in the number of prescription drug plans available to beneficiaries and falling premiums. The number of standalone PDPs rose by 30 percent between 2006 and 2008, while the number of MA-PDs increased by nearly two-thirds. For both types of plans, the share offering enhanced benefits grew rapidly. Between 2006 and 2007, the median premium among continuing PDP plans fell by more than \$4.00. Median premiums fell more than \$2.00 among continuing MA-PD plans, and new MA-PD plans came in with even lower typical premiums. Exit of higher cost plans between 2007 and 2008 held the median premium down in the following year as well, even though premiums rose somewhat among plans continuing into 2008.

In this report, we examine the impact of the demonstration in four areas: the effect on premiums faced by beneficiaries, the likelihood of beneficiaries switching plans as a result of higher premiums, the likelihood of lower take-up of Part D, and the costs to Medicare of the higher direct subsidies. Our analysis draws on administrative data from CMS, including plan information and premiums from the Health Plan Management System (HPMS), enrollment files and beneficiary information from the Common Medicare Environment (CME), and prescription drug spending from the prescription drug event (PDE) files. We review the key findings below.

Reduction in Premiums

The costs of drug coverage, as represented in the plan bids, are split between CMS and the beneficiaries. When the national average bid falls, the beneficiaries' monthly premium goes up by the amount the direct subsidy falls. Thus, as shown in the table below, the demonstration led to a \$2.72 increase in the direct subsidy paid by CMS and an equal reduction in the monthly plan premium paid by beneficiaries in 2007. In 2008, the difference was far smaller, at \$0.57.

Impact of Demonstration on National Average Bid, Beneficiary Base Premium and Direct Subsidy Amounts

Year and Component	Demonstration Methodology	Full Enrollment Methodology	Difference
2007 National Average Bid Amount	\$80.43	\$76.59	\$3.84
Beneficiary Base Premium	\$27.35	\$26.23	\$1.12
Direct Subsidy if Risk=1.0	\$53.08	\$50.36	\$2.72
Monthly Plan Premium			-\$2.72
2008 National Average Bid Amount	\$80.52	\$79.30	\$1.22
Beneficiary Base Premium	\$27.93	\$27.28	\$0.65
Direct Subsidy if Risk=1.0	\$52.59	\$52.02	\$0.57
Monthly Plan Premium			-\$0.57

Source: Centers for Medicare & Medicaid Services, Instructions for Completing the Medicare Prescription Drug Plan Bid Pricing Tool for Contract Years 2008 and 2009.

Unless they receive subsidies for low income, these increases are uniform across beneficiaries, regardless of their plan, although rebates for MA-PD lower the share of the increase paid for through the Part D premium.

As a result, in the absence of the demonstration, the change in premium would have represented different shares of the full monthly premium paid by beneficiaries. On average, the increase would have been an 11 percent increase for PDP enrollees and a 7 percent increase for MA-PD enrollees. Beneficiaries with greater health issues, based on their risk score or ESRD status, would have faced slightly higher percentage increases than healthier beneficiaries, but largely because of lower participation in MA-PD. Since average premiums differ by region, the uniform increase in PDP premiums would have represented only a 9 percent increase in the

higher cost regions, but as much as a 13 percent increase in lower cost regions. There is greater variation in the percentage increase across regions for MA-PD enrollees. In Regions 11, 21 and 29 (Florida, Louisiana and Nevada), MA-PD premiums would have increased by only 1 percent. In contrast, the increase for MA-PD in Region 27 (Colorado) would have exceeded 25 percent.

In addition to MA-PD, the other group that would have faced lower premium increases, in absolute amount, is the low-income subsidy (LIS) group. In particular, partial LIS beneficiaries would have paid only a portion of the increase, equal to their subsidy share (25, 50 or 75 percent). Fully subsidized LIS beneficiaries would typically face no increase in premiums.¹ Although partial LIS beneficiaries would not have paid the full cost of the increase, their share would have represented a larger percentage share of their premium. Because of differences in the level of subsidy, the underlying premiums, and the share of LIS beneficiaries paying additional costs for higher-premium or enhanced plans, we estimate that the extra costs in the absence of the demonstration would have varied from a low of 9 percent in Regions 10 and 34 (Georgia and Alaska) to a high of 19 percent in Region 32 (California).²

Switching Plans

Beneficiaries who would face higher premiums in the absence of the demonstration could switch plans. For this reason, we examined the patterns of plan switching that have occurred between 2006 and 2008. During this period, beneficiaries rarely switched between plans, but often moved between benefit types, especially among MA-PD enrollees. Much of this movement, however was driven by the plans: rather than beneficiaries switching to enhanced MA-PD plans, many basic plans became enhanced and beneficiaries did not switch out.

When faced with premium increases, the vast majority of non-LIS PDP enrollees still stayed in the same plan between 2006 and 2007. For those in basic PDPs with premium increases, the share staying did not dip below 90 percent for increases below \$6 per month, and more than 85 percent stayed among plans with increases greater than \$6. Moreover, when they did switch, beneficiaries often moved to higher premium plans, particularly if the plans offered enhanced benefits. For beneficiaries in enhanced plans, more than 90 percent stayed in their existing plans unless premium increases exceeded \$10 per month. However, for those who did switch from enhanced plans, it was more common to move to lower premium plans.

¹ Only full subsidy LIS beneficiaries who selected a plan whose premium is too high to be fully subsidized would face an increase in premiums. However, beneficiaries who paid any premium in 2006 represented only 3.8 percent of full subsidy LIS beneficiaries.

² Changes in the national bid would have also changed the LIS regional benchmark, which in turn can affect how much of a plan's premium is covered by the subsidy. We estimated the impact on regional benchmarks using the benchmark calculation used in 2007 or 2008 using enrollment figures from June of the previous year, and assuming that there was no behavioral response by LIS beneficiaries in response to premium changes.

Based on these patterns, we used regression modeling to assess the increased probability of beneficiaries switching plans if the demonstration had not occurred. We estimate that, controlling for other characteristics, the premium increase in the absence of the demonstration would have only minor effects on the number beneficiaries staying in the same plan in 2007. However, for the beneficiaries who switch plans, the absence of the demonstration would have discouraged them from selecting higher cost plans, pushing an additional 130,000 beneficiaries toward lower cost plans. This impact is much smaller than the influence of other factors, including the effect of LIS subsidies, different experiences in utilization, and different plan types. Holding other factors constant, institutionalized beneficiaries, older beneficiaries and men are more likely to stay in their existing plans, while those with higher utilization are more likely to switch.

Take-Up of Part D

One concern that prompted this demonstration was the possibility that the increase in beneficiary premiums would have discouraged newly eligible beneficiaries from enrolling in Part D. Excluding Medicaid and SSI beneficiaries, who are auto-enrolled in Part D when they become eligible for Medicare, about 42 percent of new eligibles in 2007 enrolled in Part D within one year of becoming Medicare-eligible. Of them, over 80 percent enrolled in Part D within the first three months of Medicare eligibility.

Using comparable models to those for plan switching, we predict the probability of Part D take-up in the absence of the demonstration, based on the relationship between take up and the cost of the lowest priced plans available in a region. If premiums had increased by \$2.72, as expected without the demonstration, we find that 6,500 fewer beneficiaries would have enrolled in Part D in 2007. For 2008, the expected increase of \$0.57 absent the demonstration is predicted to result in 1,200 fewer beneficiaries enrolling in Part D. Again, these effects are low relative to the role of demographic factors.

Increase in CMS Costs

As noted above, the impact of the demonstration was to shift costs from beneficiary premiums to the Medicare program through the direct subsidies. To calculate the cost to Medicare of this shift, we examine the impact on both the direct subsidy payments and the LIS premium subsidies (LIPS) paid on behalf of partial LIS enrollees. For all beneficiaries excluding 100% LIS enrollees, we calculated the number of member months per plan year and applied \$2.72 per plan month, adjusted by Part D risk scores. We also estimate the role of reduced take-up rates which would lead to fewer beneficiaries enrolled, and consequently, lower total direct subsidy payments. However, because the predicted change in take-up probabilities was quite

small, this has a minimal effect on the final estimate of the costs absent the demonstration. To calculate the demonstration's impact on LIPS payments for partial subsidy LIS beneficiaries, we estimate increases in the regional benchmarks using enrollment from June of the previous year. As the table below shows, we estimate the total cost in CMS payments to have been nearly \$500 million in CY2007 and over \$114 million in CY2008.

Demonstration Costs in Direct Subsidies and LIS Premium Subsidies (LIPS)

	CY 2007	CY 2008
All Beneficiaries		
Average Change in Direct Subsidy	\$2.72	\$0.57
Total Change in Direct Subsidy Costs	\$494,900,247	\$113,319,804
Additional Change from Reduced Take Up	\$593,659	\$188,294
Partial Subsidy LIS Beneficiaries		
Average Change in LIPS	\$1.52	\$0.29
Total Change in LIPS	\$4,252,984	\$791,258
Demonstration Costs for Direct Subsidies and LIPS	\$499,153,231	\$114,111,062
With Take-up Effects	\$499,746,890	\$114,299,356

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1 INTRODUCTION

Authorized by the Medicare Modernization Act of 2003 (MMA), the Medicare prescription drug program known as Medicare Part D was launched on January 1, 2006. The Centers for Medicare & Medicaid Services (CMS) administers the program, which currently covers over 26 million beneficiaries, about 60 percent of all Medicare beneficiaries. Beneficiaries must opt in to the program, except for Medicaid and Supplemental Security Income (SSI) beneficiaries who are automatically enrolled. Enrollees in Part D receive prescription drug benefits through private drug plans. CMS makes payments to each plan in the form of a direct subsidy, which covers a share of the monthly premium, and reinsurance, which covers 80 percent of the costs of drugs for beneficiaries whose Part D out-of-pocket costs reach the catastrophic threshold (which is \$4,350 for 2009). These payments cover nearly 75 percent of average plan costs, with beneficiaries paying the rest in premiums. Plans in each of 34 prescription drug plan (PDP) regions compete with each other for enrollees, who make their selection based on plan features such as premiums, co-pays, deductibles, pharmacy networks and formulary generosity.

Both the direct subsidies paid by CMS and the monthly premiums paid by beneficiaries are based on the national average of bids submitted by all plans each year. As defined by the MMA, the national average monthly bid amount is computed by taking an average of PDP and MA-PD plan bids, weighted by each plan's enrollment in a reference month of the previous year. Enrollment weights for each plan are a percentage with the numerator representing the number of Part D eligible beneficiaries enrolled in the plan and the denominator representing all Part D eligible beneficiaries enrolled in all Part D plans. Because PDP plans had no enrollment prior to 2006, CMS calculated the national average bid amount by assigning equal weights to PDP plans, zero weights to new MA-PD plans, and weights for existing MA-PD plans based on enrollment as of March 31, 2005. The "enrollment weights" methodology envisioned by the MMA was expected to be implemented in 2007.

In 2006, the first year of the Part D program, beneficiaries disproportionately enrolled in lower premium plans. Given this pattern of enrollment, a switch to enrollment weights for 2007 would have significantly reduced the calculated national average bid. A lower national average bid results in lower CMS subsidies to plans and higher premiums for beneficiaries, even if plans did not change their bid amounts between 2006 and 2007. Given these concerns, CMS decided to phase in the transition to the enrollment weights methodology by launching the "Medicare Demonstration to Limit Annual Changes in Part D Premiums Due to Beneficiary Choice of Low-Cost Plans." Under this demonstration, the national average bid amount in 2007 and 2008 was a composite of the "uniform weights" methodology used in 2006 and the enrollment weights methodology specified in the MMA.

This report evaluates the effect of the demonstration on CMS, plans, and beneficiaries by addressing the following key research questions:

- 1) What was the effect of the demonstration on the national average bid and consequently, the premiums faced by beneficiaries?
- 2) What was the impact of the demonstration on beneficiary choices of plans?
- 3) What was the impact on take-up of Part D?
- 4) How much did the demonstration increase Medicare payments to plans?

To reach findings for these research questions, we measure what actually occurred under the demonstration and compare that to our estimates of what would have occurred had the demonstration not been implemented. We rely on data from CMS for our analysis; these data include plan information and premiums from the Health Plan Management System (HPMS), enrollment files and beneficiary information from the Common Medicare Environment (CME), and prescription drug spending from the prescription drug event (PDE) files.

In the next section, we provide an overview of the Part D program, the national average bid calculation and the design of the demonstration. In Section 3, we review the trends in plan availability and premiums between 2006 and 2008. Section 4 reviews the impact of the demonstration on premiums faced by beneficiaries, distinguished by beneficiary characteristic and region. Sections 5 and 6 examine two potential behavioral responses to the demonstration. We examine in Section 5 the sensitivity of plan switching due to premium increases. We then examine the effects of premium changes on Part D take up. Finally, in Section 7, we calculate the cost to CMS of the increase in direct subsidies and LIS premium subsidies.

2 BACKGROUND

For each beneficiary enrolled in a Part D plan, CMS pays a direct subsidy that covers a portion of the monthly premiums charged by the plan; the beneficiary pays the rest. The amount of the direct subsidy and the beneficiary's share of the premium each year are based on the national weighted average of approved bids submitted to CMS in the prior year. Hence, different approaches to calculating the national average bid leads to different levels of beneficiary premiums and direct subsidy amounts. To provide context for understanding the analyses in this report, we start in this section by reviewing the process of plan bidding and the determination of the national average bid amount. We then discuss how monthly beneficiary premiums are calculated. Finally, we present the design and objectives of the demonstration.

2.1 Determination of the National Average Monthly Bid Amount

The national average monthly bid is calculated from bids submitted yearly to CMS by plan sponsors for each of their proposed plans. For each plan, the Part D sponsor submits a bid that reflects the expected revenues needed to cover the beneficiaries' drug costs under the plan's benefit design. All bids must include a minimum level of coverage mandated by the MMA, called the defined standard benefit. CMS reviews each bid and may engage in negotiations with plan sponsors before approving bids.

All bids included in the calculation of the national average bid are standardized to capture the expected costs in approved bids that are attributable to the basic Part D prescription drug coverage. Bids for PDP plans that provide just the basic Part D benefit are taken as is for the calculation. For "enhanced alternative" plans, which offer benefit packages that actuarially exceed the Part D defined standard benefit, CMS requires the sponsors to submit "standardized bid amounts" that reflect only the components of their benefit packages attributable to the defined standard benefit. Similarly, the bid amount used for Medicare Advantage Prescription Drug Plans (MA-PDs) is the portion of the approved bid that is attributable to basic prescription drug coverage. For other "alternative" types of Part D plans that have a different benefit structure from the defined standard plan but are actuarially equivalent, their full bids are included in the calculation.³

As shown in equation (2.1) below, the national average monthly bid amount is designed in the MMA to be computed by taking an average of approved PDP and MA-PD plan bids, weighted by each plan's enrollment in a reference month of the previous year. The enrollment

³ Bids from fallback plans, MSA plans, MA PFFS plans, MA Special Needs Plans (SNP), Program of All Inclusive Care for the Elderly (PACE) programs, and section 1876 cost plans are excluded from the national bid calculation.

Part D Benefit Design

There are different types of benefit plans that can be offered under Part D. The MMA defines a “standard” benefit plan for Part D coverage. Plans can offer benefits under this standard plan design, or choose from one of three types of alternative plan designs.

The Defined Standard Plan

Intended to balance beneficiary coverage with incentives to avoid the overutilization of prescription drugs, the standard benefit structure includes four separate coverage phases. The threshold expenditures for each coverage phase are set every year by CMS; for 2009, the defined standard benefit includes:

- A *deductible* of \$295; the enrollee covers all initial drug costs up to this amount.
- *Initial coverage period* (ICP), during which the plan pays 75 percent of total drug expenses and the enrollee pays the remaining 25 percent (known as co-insurance). The ICP applies to total drug expenses up to a limit of \$2,700.
- A *coverage gap*, more commonly known as the “doughnut hole.” During this third phase, the beneficiary pays for 100 percent of drug costs up to an out-of-pocket limit of \$4,350.
- A *catastrophic phase*, during which the beneficiary pays the greater of 5 percent co-insurance or co-payment of \$2.40 for generic or preferred brand name drugs and co-payment of \$6.00 for other drugs. The plan pays the rest of the cost, but receives reimbursements from CMS equal to 80 percent of drug costs (known as reinsurance). Once the end of the calendar year is reached, the beneficiary returns to the first coverage phase.

Alternative Part D Plans

As an alternative to the standard benefit design, Part D sponsors can offer one of three alternative types of plans:

- *Actuarially equivalent standard plans.* These plans maintain the standard deductible but have a different ICP and catastrophic cost structure. Under the ICP, they may charge tiered payment amounts for drugs instead of the 25 percent co-insurance. For example, a plan may charge a \$10 co-pay for a generic drug, \$25 for a preferred brand, \$50 for a non-preferred, and a 25 percent coinsurance for a specialty drug. Even though these plans are structured differently, they are “actuarially equivalent” because an enrollee’s projected average payment under these plans should be the same as that expected if the enrollee were in a defined standard plan.
- *Basic alternative plans.* These plans are also actuarially equivalent to the defined standard plan, but in addition to having different ICP and catastrophic cost structures, these plans also reduce or eliminate the deductible requirement. For example, some plans can choose to absorb the cost of the enrollee’s deductible when generic prescriptions are filled.
- *Enhanced alternative plans.* The value of these plans must actuarially exceed that of the defined standard plans. The enhanced benefits can include expanded formularies, lower deductibles, reduced cost sharing, increase initial coverage levels, or coverage in the doughnut hole. Enhanced alternative plans often charge higher premiums to cover the improved benefits. However, Medicare only reimburses the plans for the portion of benefits attributable to the elements of the defined standard plan, so the enrollee must pay a supplemental premium for the extra benefits.

weight for each plan is expressed as the number of Part D eligible beneficiaries enrolled in the plan divided by the number of all Part D eligible beneficiaries enrolled in all Part D plans (equation 2.2).

$$(2.1) \text{ National Average Monthly Bid} = \sum_i \text{ Standardized Bid}_i * w_i$$

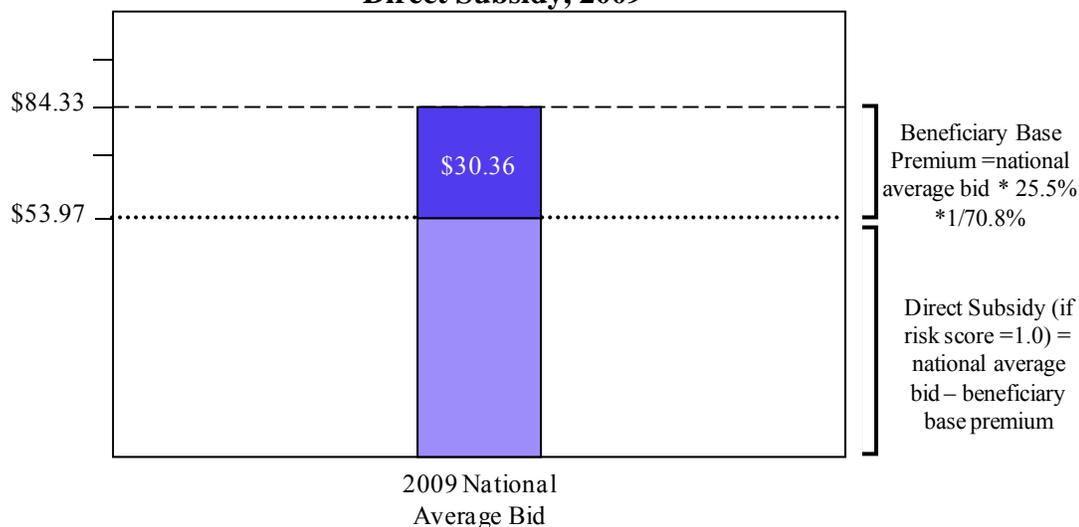
$$(2.2) w_i = \text{ Enrollment in Plan } i / \sum_i \text{ Enrollment in Plan } i$$

This methodology could not be applied in 2006, because PDP plans did not exist in 2005. Therefore, CMS calculated the national average bid amount using a “uniform weights” methodology of assigning equal weights to PDP plans, zero weights to new MA-PD plans, and weights for existing MA-PD plans based on enrollment as of March 31, 2005.

2.2 Calculation of Monthly Beneficiary Premiums and Direct Subsidy

The national average bid amount is key to determining the direct subsidy paid by CMS to plans and the base beneficiary premium. The beneficiary base premium is 25.5 percent of the national average bid times an adjustment for reinsurance.⁴ The reinsurance adjustment can be significant. In 2009, the first year the enrollment weights shown in equation (2.2) were fully implemented, the actual beneficiary base premium percentage was 36 percent. Ignoring the issue of risk adjustments (which we discuss below), the direct subsidy is then calculated as the national average bid amount minus the beneficiary base premium. Figure 2.1 shows this division for 2009.

Figure 2.1: Relation between National Average Bid, Base Beneficiary Premium and Direct Subsidy, 2009



⁴ The adjustment factor is one over the share of all Part D plan revenues that come from the direct subsidy and beneficiary payments, where the remaining share represents the cost of reinsurance, the 80 percent of drug costs paid by CMS in the catastrophic coverage phase. For 2009, reinsurance represented more than 29 percent of the expected Part D revenues for plans.

The amounts shown in Figure 2.1 do not necessarily reflect the exact premium paid by a beneficiary nor the exact direct subsidy. The monthly premium paid by a beneficiary is equal to the base beneficiary premium plus the difference between the plan's bid and the national average bid, as shown in equation (2.3):

$$(2.3) \text{ Plan monthly premium} \\ = \text{base beneficiary premium} + (\text{plan bid} - \text{national average bid})$$

For a bid equal to the national average, the beneficiary premium equals the beneficiary base premium. Plans with bids below the national average will have lower beneficiary premiums; plans with bids above the national average will have higher premiums.⁵

The direct subsidy is also calculated from the national average bid, as shown in Figure 2.1. In addition to a subsidy that is identical across all plans and individuals, a risk adjustment factor is added to increase the subsidy provided for beneficiaries with greater health needs that are expected to yield higher drug costs. The risk adjustment factor is based partly on estimates from the prescription drug hierarchical condition category (RxHCC) model, which determines an enrollee's risk based on his diagnoses, disability status and age/gender. In addition to RxHCCs, an enrollee's low-income status and long-term institutionalized status are also used in determining the risk adjustment factor. This adjustment factor, which takes the form of a risk score with minimum value of 1.0, is applied to the portion of the plan bid attributable to the basic drug benefit.

$$(2.4) \text{ Direct subsidy} = \text{National average bid} - \text{base beneficiary premium} + \\ \text{standardized plan bid} * (\text{risk score} - 1)$$

Table 2.1 presents the beneficiary premium and direct subsidy calculations for three example plans. The first plan's bid is below the national average, the second is above and the third is an enhanced plan with the standardized bid below the national average. For the below-average cost standard plan A, the beneficiary receives the benefit of the reduced cost, while CMS pays the same direct subsidy as for an above average national plan when the risk score is 1.0. For plans with bids above the national average, either because the bid was high or the plan was enhanced, the beneficiary pays the difference in costs through the premium. However, a plan with a high standardized bid receives the risk adjustment factor on the full amount of the standardized bid, so the plan receives a larger increment for the risk factor in this situation than for either the enhanced plan or the lower bid plan.

⁵ A beneficiary's premium is also adjusted by an increase for any late enrollment penalty, a decrease for MA-PD plans that apply MA Part A and B rebates to buy down the Part D premium, and/or a decrease/elimination by a low-income premium subsidy.

Table 2.1: Monthly Beneficiary Premium, Direct Subsidy and Total Plan Revenues for Three Example Plans, 2009 National Average Bid and Base Premium

	A	B	C
Plan Type	Standard	Standard	Enhanced
Plan Bid	\$80.00	\$90.00	\$90.00
Standardized Bid Amount	\$80.00	\$90.00	\$80.00
National Average Bid	\$84.33	\$84.33	\$84.33
Beneficiary Base Premium	\$30.36	\$30.36	\$30.36
Plan Monthly Premium	\$26.03	\$36.03	\$36.03
Direct Subsidy			
Risk Factor = 1.0	\$53.97	\$53.97	\$53.97
Risk Factor = 1.2	\$69.97	\$71.97	\$69.97
Total Monthly Revenue			
Risk Factor = 1.0	\$80.00	\$90.00	\$90.00
Risk Factor = 1.2	\$96.00	\$108.00	\$106.00

2.3 Design and Objectives of the Demonstration

Because beneficiaries disproportionately enrolled in plans with lower premiums, the enrollment weighting methodology called for in the MMA would have driven down the national average bid for 2007 compared to the uniform weights used in 2006. A change in weights that lowers the national average bid has no direct effect on the revenues plans receive, but shift costs from CMS (through the direct subsidy) to the beneficiaries (through the plan premium). This can be seen through equation (2.3) above. Using Δ to denote a change and assuming no change in the plan's bid (thus, $\Delta plan\ bid=0$):

$$\begin{aligned}
 (2.5) \Delta Plan\ monthly\ premium &= \Delta base\ beneficiary\ premium + \\
 &\quad (\Delta plan\ bid - \Delta national\ average\ bid) \\
 &= Beneficiary\ premium\ percentage * \Delta national\ average\ bid - \Delta national\ average\ bid \\
 &= - (1 - beneficiary\ premium\ percentage) * \Delta national\ average\ bid \\
 &= - \Delta Direct\ subsidy.
 \end{aligned}$$

In other words, when the national average bid falls, the beneficiaries' monthly premium goes up by the amount the direct subsidy falls.

With the launch of the new Part D program, CMS was concerned that premium increases induced by the transition to enrollment weights in 2007 would discourage new Medicare beneficiaries from enrolling in Part D and drive existing enrollees to change plans. Therefore, CMS launched the "Medicare Demonstration to Limit Annual Changes in Part D Premiums Due

to Beneficiary Choice of Low-Cost Plans.” This demonstration slowed the transition by calculating the 2007 and 2008 average bid using a composite of the uniform-weights and enrollment-weights averages. For 2007, 80 percent of the bid amount was calculated using the uniform-weights methodology used for 2006, and 20 percent was calculated using the MMA-defined enrollment-weights methodology. In 2008, 40 percent of the amount was a uniform-weights average and the remaining 60 percent was an enrollment-weights average. The demonstration ended in 2008; starting with 2009, 100 percent of the national average bid will be calculated as an enrollment-weights average. Table 2.2 below shows the formula for calculation of the benchmark for each year.

Table 2.2: Transitional Structure of National Average Monthly Bid Amount Calculation

Year	Weighting Methodology
2006	Equal weighting to PDP plans, zero weights to new MA-PD plans, and weights based on March 31, 2005 enrollment for MA-PD plans.
2007	80% of the national average monthly bid amount for 2007 was calculated using uniform weights for PDP plans and enrollment-based weights for MA-PD plans. The other 20% was calculated by weighting all Part D plans by enrollment. Weights used were based on June 2006 enrollment numbers.
2008	40% of the national average monthly bid amount for 2008 was calculated using uniform weights for PDP plans and enrollment-based weights for MA-PD plans. The other 60% was calculated using enrollment weights for all Part D plans. Weights used were based on June 2007 enrollment numbers.
2009 (Post-Demo)	100% of the national average monthly bid amount was weighted by enrollment in PDP and MA-PD plans as of June 2008.

The demonstration resulted in national average bid amounts that were \$3.84 higher in 2007 than they would have been in the absence of the demonstration and \$1.22 higher in 2008, as shown in Table 2.3. If these bid amounts had fallen as planned, the premiums that beneficiaries paid would have risen by the corresponding fall in the direct subsidy (as shown in equation 2.5), which was \$2.72 in 2007 and \$0.57 in 2008.

Table 2.3: Impact of Demonstration on National Average Bid, Beneficiary Base Premium and Direct Subsidy Amounts

Year and Component	Demonstration Methodology	Full Enrollment Methodology	Difference
2007 National Average Bid Amount	\$80.43	\$76.59	\$3.84
Beneficiary Base Premium	\$27.35	\$26.23	\$1.12
Direct Subsidy if Risk=1.0	\$53.08	\$50.36	\$2.72
2008 National Average Bid Amount	\$80.52	\$79.30	\$1.22
Beneficiary Base Premium	\$27.93	\$27.28	\$0.65
Direct Subsidy if Risk=1.0	\$52.59	\$52.02	\$0.57

Source: Centers for Medicare & Medicaid Services, Instructions for Completing the Medicare Prescription Drug Plan Bid Pricing Tool for Contract Years 2008 and 2009.

These increases are uniform across beneficiaries, regardless of their plan. The only exceptions are beneficiaries eligible for low-income subsidies (LIS). In particular, partial LIS beneficiaries pay only a portion of the increase, equal to their subsidy share. For example, an LIS beneficiary with a 50 percent subsidy would have faced a \$1.36 increase in premium, rather than a \$2.72 increase, unless she already paid an additional cost for a high premium plan. In that case, the partial LIS beneficiary faces the same nominal increase as non-LIS beneficiaries. For beneficiaries eligible for 100 percent premium subsidy, there is generally no additional cost from a higher national average bid.⁶ As we explore the impacts of the Demonstration to Limit Annual Changes in Part D Premiums, we examine the effects for non-LIS and partial LIS beneficiaries.

⁶ Full subsidy LIS beneficiaries who selected a plan whose premium is too high to be fully subsidized would face an increase in premiums. However, beneficiaries who paid any premium in 2006 represented only 3.8 percent of full subsidy LIS beneficiaries. We address issues for full subsidy LIS beneficiaries in the companion report, *Evaluation of the Medicare Demonstration to Transition Enrollment of Low Income Subsidy Beneficiaries*.

3 TRENDS IN PLANS AND BENEFICIARY PREMIUMS 2006-2008

As further background to understanding the beneficiary response to the demonstration, we review in this section the overall trends in the availability of Part D and the premiums associated with these plans, and then turn to beneficiary enrollment by premium level.

3.1 Availability of Plans by Beneficiary Premium by Year

Between 2006 and 2007, the number of plans available grew substantially (Table 3.1). The number of standalone PDPs in the 34 regions rose by 31 percent, and the number of MA-PDs rose by 29 percent. Most of this increase was concentrated among enhanced plans, which represented 48 percent of PDP plans and 65 percent of MA-PD plans in 2007, compared to 43 percent and 56 percent in 2006. By 2008, the number of PDPs fell back somewhat, as new MA-PD plans came in. The number of enhanced MA-PDs grew by over 50 percent annually between 2006 and 2008.

Table 3.1: Availability of Plans by Beneficiary Premium Level

Plan Type	Year	# of Plans	Monthly Premium Level					
			\$0	>\$0-\$20	>\$20-\$30	>\$30-\$40	>\$40-\$50	>\$50
All PDPs	2006	1,429	0%	6%	22%	32%	23%	16%
	2007	1,865	0	6	34	26	23	12
	2008	1,824	0	7	34	21	16	22
Basic Plans*	2006	821	0	7	31	40	13	8
	2007	978	0	10	51	31	7	1
	2008	899	0	9	53	27	7	4
Enhanced	2006	608	0	6	9	21	37	27
	2007	887	0	1	14	21	41	24
	2008	925	0	5	15	16	25	39
All MA-PDs	2006	1,662	31	17	23	15	5	10
	2007	2,137	28	20	30	9	5	7
	2008	2,789	31	17	25	13	4	9
Basic Plans*	2006	738	11	24	33	21	4	6
	2007	744	14	26	43	8	2	6
	2008	649	8	22	45	14	1	10
Enhanced	2006	924	47	10	14	10	6	12
	2007	1,394	36	17	23	9	6	8
	2008	2,140	38	16	19	13	5	9

*Basic plans include standard include defined standard plans, basic alternative plans, and actuarially equivalent standard plans.

Among PDP plans, 2007 and 2008 plans were more likely to have premiums in the >\$20 to \$30 range compared to 2006 and less likely to have premiums above \$30, except for a jump in the number of high-premium (greater than \$50 per month) plans in 2008. For basic PDP plans (standard, basic alternative, and actuarially equivalent plans), the share of plans with premiums

of \$30 or less increased in 2007, while the share of plans above \$30 decreased. In 2008, increases occurred only for plans with premiums in the >\$20 to \$30 range and >\$50 range. Among enhanced PDP plans, 2007 plans were more likely to have premiums in the >\$20 to \$50 range and 2008 plans were more likely to have premiums in the >\$20 to \$30 and >\$50 ranges compared to 2006. Moving to MA-PDs, the only increases in basic MA-PD plans in 2007 occurred at the \$30 and below premium levels, while the number of enhanced MA-PD plans increased for premium levels from the greater than \$0 through \$30. In 2008, some basic MA-PD plans returned to the greater than \$20 level, with the exception of the > \$40-\$50 level. Among enhanced MA-PD plans, the 2008 shares of low and medium priced plans (in the >\$0-\$40 premium range) stayed above the 2006 levels.

3.2 Enrollment by Plan Premiums

Part D plans have enrollment levels that range from fewer than 10 beneficiaries to more than 300,000. As a result, the availability of plans by premium level shown in Table 3.1 says little about the levels of premiums actually paid by beneficiaries. In Table 3.2, we present the shares of beneficiaries paying different premium levels by plan type in each year. Each row shows the breakdown of each plan type's enrollment by premium level. The table includes two groups of beneficiaries: non-LIS beneficiaries and LIS beneficiaries who receive only a partial subsidy to cover their premiums, paying 25, 50 or 75 percent themselves. As described in Section 2.3, these beneficiary groups are the main beneficiaries we expect to be affected by the premium changes associated with the demonstration.

For all plan types, beneficiaries are disproportionately enrolled in low cost plans (i.e. plans with premiums less than \$20). PDP plans with premiums below \$20 represented 6 percent of all PDP plans in 2006 (Table 3.1), but 28 percent of the enrollment. For 2006, the enrollment shares in low-cost enhanced PDP plans far outweighed their share of available enhanced PDPs, but the two proportions came more in line as PDP enrollment shares shifted somewhat away from basic plans toward enhanced plans in 2007 and 2008, as illustrated by the enrollment numbers shown in Table 3.2. Similarly, low cost MA-PDs represented 48 percent of MA-PDs in 2006 and 2007 (Table 3.1), but captured more than 70 percent of the enrollment. Low-cost plans represent a larger share of the enhanced MA-PDs and receive about three-fourths of enrollees in plans of this type. By 2008, relatively few of the MA-PD enrollees had selected basic MA-PD plans; when they did, these tended to be somewhat higher cost plans.

Table 3.2: Distribution of Enrollment by Beneficiary Premium by Year and Plan Type, Non-LIS and Partial LIS Beneficiaries

Year	Plan Type	Partial & Non-LIS Enrollment	Premium Level		
			<\$20	\$20-\$50	>\$50
2006	PDP	7,601,734	28%	64%	8%
	Basic	5,183,329	26	73	<1
	Enhanced	2,418,405	31	43	26
2007	PDP	8,029,383	21	72	7
	Basic	5,109,259	27	73	<1
	Enhanced	2,920,124	10	70	20
2008	PDP	8,297,824	5	84	11
	Basic	5,055,922	3	97	<1
	Enhanced	3,241,902	9	63	28
2006	MA-PD	4,172,479	71	27	2
	Basic	1,108,299	57	42	1
	Enhanced	3,064,180	76	21	3
2007	MA-PD	4,656,930	73	26	1
	Basic	1,006,455	62	38	<1
	Enhanced	3,650,475	76	22	2
2008	MA-PD	5,287,557	70	27	3
	Basic	422,037	33	67	<1
	Enhanced	4,865,520	73	24	3

3.3 Year-to-Year Changes in Premiums

The numbers in the previous tables reflect the availability of and enrollment in plans by premium level, but they do not capture any changes over time in premiums. Of course, the specific plans offered in any one year may or may not have been available the previous year, and plans often converted from basic to enhanced plans over time. Table 3.3 looks at the change in premiums for plans that continue across plan years. We compare these plans to both those that exited each year and those that were new the following year.

As this table shows, median beneficiary premiums fell between 2006 and 2007, with continuing plans dropping in price for both MA-PD and PDP. The typical new PDP plan in 2007 was priced slightly higher than the typical continuing plan, but new MA-PDs came in cheaper than the continuing plans. Just three PDP plans exited between 2006 and 2007, although 86 MA-PD plans did not continue into 2007. More than half of the exiting MA-PDs had zero premiums for Part D in 2006.

Table 3.3: Changes in Beneficiary Premiums, 2006-2008

	Transition 2006-2007			Transition 2007-2008		
	Number of Plans	2006	2007	Number of Plans	2007	2008
		Median Premium	Median Premium		Median Premium	Median Premium
All Plans		\$26.90	\$23.90		\$23.90	\$23.60
Exiting Plans	89	\$0.00	-	158	\$29.50	-
Continuing Plans	3,002	\$27.08	\$23.80	3,844	\$23.75	\$24.50
New Plans	1,401	-	\$24.10	1,212	-	\$15.25
PDP Plans		\$32.11	\$28.70		\$28.70	\$28.40
Exiting Plans	3	\$47.55	-	86	\$33.30	-
Continuing Plans	1,426	\$32.10	\$28.00	1,779	\$28.30	\$28.90
New Plans	619	-	\$30.45	201	-	\$24.90
MA-PD Plans		\$18.84	\$15.90		\$15.90	\$15.40
Exiting Plans	86	\$0.00	-	72	\$3.00	-
Continuing Plans	1,576	\$19.01	\$17.00	2,065	\$16.00	\$16.70
New Plans	853	-	\$14.40	1,011	-	\$11.40

Note: Some continuing plans merged during transitions between years. Therefore, the number of continuing plans and new plans do not sum up to equal the number of plans for each year as shown in Table 3.1

For both PDPs and MA-PDs, the median premium for continuing plans increased somewhat between 2007 and 2008, while new 2008 plans had lower typical premiums. For MA-PD, plans exiting between 2007 and 2008 were again among the least expensive. In contrast, the PDP plans that exited the program after 2007 were typically more expensive than continuing plans.

4 IMPACT OF DEMONSTRATION ON BENEFICIARY PREMIUMS

Due to the demonstration, beneficiary premiums were \$2.72 lower in 2007 and \$0.57 lower in 2008 than they would have been if the full-enrollment methodology had been used to calculate the national average bid. Because the impact was far smaller in 2008, we concentrate primarily on 2007 effects.

As we show in this section, despite the common reduction in Part D premiums under the demonstration, the exact effect on individual beneficiaries depended on whether they received partial subsidies to cover premium costs and whether they were in an MA-PD plan that lowered premiums through rebates. We use information on the plan bids and direct subsidy amounts to determine what beneficiary premiums would have been under the full enrollment weighting for the national average bid. For MA-PD plans that were zero-premium under the demonstration, we assume no change in the premium. In addition, because we do not have the specific enrollment data used in calculating the national average bid and the regional benchmarks, we estimate the effect of changes to premiums on the 2007 regional benchmarks using June 2006 enrollment in MA-PD plans and uniform weights for PDP plans. The effect of the regional benchmark varies by region as a function of the number of zero-premium plans and these plans' enrollment, with the estimated increase in regional benchmarks varying from \$0.97 to \$2.72. This affects both the premium that partial-LIS beneficiaries pay and how much CMS subsidizes premiums for this population.

Based on this approach, we examine the impact of the demonstration on premium levels for different groups of beneficiaries. In Section 4.1, we consider the different impacts based on beneficiary characteristics. In Section 4.2, we present the impacts across regions.

4.1 Implications by Beneficiary Characteristics

On average, premiums would have been ten percent higher in the absence of the demonstration. Table 4.1 compares the beneficiary premiums and differences in premiums under the demonstration methodology with that of the full enrollment methodology, focusing on beneficiaries with no LIS or only partial LIS. The average difference in premiums is actually \$2.17, rather than \$2.72, because of the mix of beneficiaries who have a lower increase because they are in MA-PD plans or because they are partially subsidized. Although the average difference is 10 percent of the demonstration premium, one in six beneficiaries would have experienced an increase of more than 15 percent.

The percentage increases faced by Medicare beneficiaries did not differ substantially by basis for eligibility. On average, Medicare beneficiaries who qualified for coverage based on their age paid lower Part D premiums under the demonstration than those who qualified for other

reasons, including disability, end-stage renal disease (ESRD) or a combination. However, those qualifying based on disability without ESRD also would have had a lower average increase in absolute amounts.

As expected, the premium increases that MA-PD enrollees would have faced are smaller in both magnitude and percentage increase than those faced by PDP enrollees, whose Part D premiums were nearly three times as high as the Part D portion of the MA premium. The premiums for a majority (55 percent) of MA-PD enrollees would have increased by 5 percent or less, compared to only 7 percent for PDP enrollees.

Table 4.1: Implications of the Enrollment Weight Methodology on Beneficiary Premiums by Medicare Characteristics, 2007

Enrollee Characteristics	% of Partial & Non-LIS Enrollees	Average Premium		Average Difference in Premium		Distribution of Differences in Beneficiary Premiums			
		Demo	Full Enrollment	Level	%	< 5%	5% - 10%	10%-15%	> 15%
Overall	100.0%	\$23.45	\$25.62	\$2.17	9%	24%	34%	26%	16%
Medicare Status (%)									
Aged without ESRD	92.3	\$23.53	\$25.72	\$2.19	10	24	35	25	16
Aged with ESRD	0.4	\$29.16	\$31.45	\$2.29	9	25	39	22	14
Disabled w/o ESRD	7.2	\$23.96	\$26.06	\$2.10	9	27	32	27	14
Disabled with ESRD	0.1	\$31.93	\$34.38	\$2.45	10	21	39	25	16
ESRD only	0.02	\$31.29	\$33.81	\$2.52	10	19	36	28	17
Plan Type (%)									
MA-PD	35.3	\$11.11	\$12.34	\$1.23	7	55	15	14	15
PDP	64.7	\$30.19	\$32.87	\$2.68	11	7	44	32	17
Benefit Type (%)									
Standard	3.5	\$21.12	\$23.61	\$2.50	13	3	35	29	32
Actuarially Equiv	34.1	\$25.79	\$28.35	\$2.56	10	5	54	34	8
Basic Alternative	11.3	\$16.39	\$19.04	\$2.65	17	1	4	20	75
Enhanced	51.1	\$23.62	\$25.40	\$1.78	7	43	28	21	8
Risk Score Level (%)*									
Low	53.3	\$17.22	\$19.01	\$1.79	9	36	24	22	18
Medium	21.9	\$28.97	\$31.57	\$2.60	10	9	44	31	16
High	24.8	\$32.57	\$35.21	\$2.64	10	11	47	28	13

*Risk score levels correspond to the lower, middle, and upper thirds of the distribution of risk scores.

Turning to plan benefit types, beneficiaries in basic alternative plans are most affected by the demonstration, paying an average of \$2.65 less than they would have had to pay under the full enrollment methodology. In fact, 75 percent of beneficiaries in these plans would have had premiums that were more than 15 percent higher absent the demonstration. Enhanced plan enrollees are least affected by the demonstration, with 43 percent of them having premium differences of less than 5 percent.

MA-PD enrollees are generally healthier than other enrollees, so we also see lower dollar increases faced by beneficiaries with lower risk scores. On average, beneficiaries with low risk scores are less affected by the demonstration compared to their medium and high risk counterparts. The difference in premium between the two methodologies would have been less than 5 percent for 36 percent of low risk beneficiaries, compared to 9 and 11 percent of medium- and high-risk beneficiaries, respectively. However, when looking at differences of more than 15 percent, a larger share of low-risk beneficiaries fall into this category compared to riskier beneficiaries.

To look in greater depth at impacts by health status, we next examine how beneficiaries with different health conditions are affected by the demonstration. Table 4.2 compares the beneficiary premiums and changes in premiums under the demonstration methodology with that of the full enrollment methodology for beneficiaries with the top 10 most frequent RxHCCs. The RxHCCs represent ICD-9-CM diagnostic groups, currently used by CMS for risk adjustment in Part D.

Table 4.2: Implications of the Enrollment Weight Methodology on Beneficiary Premiums by Clinical Conditions, 2007

RxHCCs	% of Non-LIS & Partial LIS Enrollees	Average Premium		Average Difference in Premium		Distribution of Differences in Beneficiary Premiums			
		Demo	Full Enrollment	Level	%	< 5%	5% - 10%	10%- 15%	> 15%
Hypertensive Heart Disease or Hypertension	35%	\$30.20	\$32.83	\$2.62	10%	10%	45%	31%	14%
Disorders of Lipoid Metabolism	32	\$30.82	\$33.46	\$2.64	10	10	46	30	14
Other Musculoskeletal and Connective Tissue Disorders	23	\$30.20	\$32.83	\$2.63	10	10	44	31	15
Acute Myocardial Infarction and Unstable Angina	15	\$32.15	\$34.80	\$2.64	10	11	47	28	13
Disorders of the Vertebrae and Spinal Discs	13	\$30.98	\$33.63	\$2.65	10	10	45	30	15
Other Specified Endocrine/Metabolic/Nutritional	14	\$31.45	\$34.10	\$2.65	10	10	46	30	14
Bullous Dermatoses and Other Spec. Erythematous Conditions	10	\$29.89	\$32.54	\$2.66	10	8	45	31	16
Esophageal Disease	10	\$31.80	\$34.44	\$2.65	10	11	47	29	13
Asthma and COPD	10	\$32.11	\$34.74	\$2.64	10	11	47	29	12
Diabetes without Complication	9	\$31.87	\$34.47	\$2.60	10	13	46	29	12

Enrollees with these common conditions paid somewhat higher premiums than the average for all enrollees. Because they were less likely to participate in MA-PD, they were also more likely to face the full premium increase in the absence of the demonstration. Beneficiaries with these conditions were more likely to face increases above 10 percent of their premium level.

Among beneficiaries with these conditions, those with an RxHCC for Bullous Dermatoses and Other Specified Erythematous Conditions were slightly more likely to face full enrollment premiums that are more than 15 percent higher than the demonstration premiums, while those with RxHCCs for Diabetes with Complication and Asthma and Chronic Obstructive Pulmonary Disease are somewhat less likely to face the higher increases.

4.2 Implications by Region

Regional variation in the impact of the demonstration is driven by regional competition among plans, the level of MA penetration, and the influence of the regional benchmarks on subsidies for LIS beneficiaries. To understand these different effects, we present three breakdowns of impacts by region: non-LIS PDP enrollees, partial LIS PDP enrollees, and non-LIS MA-PD enrollees. Tables 4.3 through 4.5 show the variation in premiums between the demonstration methodology and the full enrollment methodology across the 34 PDP regions.⁷

For non-LIS PDP enrollees (Table 4.3), we see the consistent \$2.72 effect of the change in weighting methodology. The largest effect is seen in Region 4 (New Jersey), where full enrollment premiums are more than 15 percent higher than demonstration premiums for 39 percent of non-LIS enrollees, compared to less than 1 percent of enrollees in Region 12 (Alabama and Tennessee). In most regions there are few non-LIS enrollees with premium differences of less than 5 percent, with the exception of Region 8 (North Carolina), with 20 percent of enrollees falling under this category.

Next, we turn to differences in PDP plan premiums for partial LIS enrollees in each PDP region. Table 4.4 shows that partial LIS enrollees on average face premiums that are \$1.40 higher under the full enrollment methodology. Because the exact premium each partial LIS enrollee pays depends on the subsidy level he or she qualifies to receive (25, 50 or 75 percent), and the effect of premium change on the regional benchmark varies by region, the average differences in premiums for these beneficiaries vary across regions. Absent the demonstration, the premium for an average enrollee in Region 32 (California) would have been 19 percent higher, compared to only 9 percent higher for the average enrollee in Regions 10 and 34 (Georgia and Alaska).

Because partial subsidy LIS beneficiaries pay lower premiums, increases are often a larger percentage. This is especially true for beneficiaries in plans above the regional benchmarks, since they face the full impact of the full enrollment methodology. On average, more than half of enrollees in each region would have had premiums that are more than 10 percent higher than what they were under the demonstration. The impact is even greater in

⁷ See the appendix for a mapping of states to PDP regions.

Region 11 (Florida), where 66 percent of enrollees would have had premiums that were more than 15 percent higher absent the demonstration, compared to 1 percent of enrollees in Region 1 (New Hampshire and Maine) and Region 34 (Alaska). On average, about 7 percent of partial enrollees across all regions face premium differences of less than 5 percent.

Table 4.3: Implications of the Enrollment Weight Methodology on Non-LIS Beneficiary PDP Premiums by PDP Region, 2007

Region	Number of Non-LIS Enrollees	Average Premium		Average Difference in Premium		Distribution of Differences in Beneficiary Premiums			
		Demo	Full Enrollment	Level	%	< 5%	5%-10%	10%-15%	> 15%
1	109,062	\$30.82	\$33.54	\$2.72	9%	1%	35%	63%	1%
2	332,742	\$29.26	\$31.98	\$2.72	10	3	32	50	15
3	247,096	\$27.77	\$30.49	\$2.72	11	3	67	14	16
4	297,758	\$24.13	\$26.85	\$2.72	13	2	18	42	39
5	171,546	\$29.77	\$32.49	\$2.72	11	5	36	48	11
6	442,712	\$28.84	\$31.56	\$2.72	11	3	44	41	11
7	208,374	\$30.94	\$33.66	\$2.72	11	6	31	51	12
8	287,225	\$37.68	\$40.40	\$2.72	9	20	52	17	11
9	134,431	\$32.01	\$34.73	\$2.72	10	5	66	15	14
10	255,448	\$32.91	\$35.63	\$2.72	9	3	73	11	12
11	529,226	\$30.28	\$33.00	\$2.72	10	3	68	12	17
12	326,174	\$32.80	\$35.52	\$2.72	10	7	55	38	<1
13	233,972	\$33.26	\$35.98	\$2.72	9	4	61	17	18
14	274,406	\$32.24	\$34.96	\$2.72	10	6	63	19	12
15	391,190	\$33.02	\$35.74	\$2.72	10	6	59	16	20
16	158,012	\$32.13	\$34.85	\$2.72	10	3	47	40	10
17	473,828	\$31.95	\$34.67	\$2.72	9	11	43	38	8
18	216,811	\$30.23	\$32.95	\$2.72	11	5	50	27	19
19	124,101	\$30.14	\$32.86	\$2.72	11	6	46	27	21
20	111,233	\$31.19	\$33.91	\$2.72	11	9	43	26	23
21	96,942	\$33.96	\$36.68	\$2.72	10	8	59	18	16
22	499,453	\$31.06	\$33.78	\$2.72	11	12	48	28	12
23	113,650	\$31.86	\$34.58	\$2.72	10	4	69	15	11
24	143,160	\$27.91	\$30.63	\$2.72	13	5	51	6	38
25	683,204	\$31.98	\$34.70	\$2.72	13	13	22	30	36
26	36,929	\$27.71	\$30.43	\$2.72	11	3	20	67	10
27	82,228	\$29.80	\$32.52	\$2.72	11	6	25	53	16
28	112,742	\$26.81	\$29.53	\$2.72	12	5	17	65	13
29	40,050	\$28.56	\$31.28	\$2.72	11	5	23	58	15
30	267,726	\$29.11	\$31.83	\$2.72	11	5	29	50	17
31	100,503	\$29.19	\$31.91	\$2.72	12	7	46	24	24
32	503,054	\$27.27	\$29.99	\$2.72	12	4	23	58	15
33	6,854	\$26.88	\$29.60	\$2.72	11	1	19	76	3
34	7,634	\$30.54	\$33.26	\$2.72	10	3	29	65	3

Table 4.4: Implications of the Enrollment Weight Methodology on Partial LIS Beneficiary Premiums by PDP Region, 2007

Region	Number of Partial-LIS Enrollees	Average Premium		Average Difference in Premium		Distribution of Difference in Beneficiary Premiums			
		Demo	Full Enrollment	Level	%	< 5%	5%-10%	10%-15%	> 15%
1	3,297	\$15.18	\$16.56	\$1.37	10%	6%	26%	68%	1%
2	9,420	\$13.24	\$14.55	\$1.31	11	5	20	57	18
3	8,527	\$11.33	\$12.70	\$1.36	14	3	7	51	40
4	9,381	\$9.25	\$10.53	\$1.28	16	2	11	22	65
5	6,220	\$14.75	\$16.05	\$1.31	11	7	36	42	16
6	12,509	\$13.80	\$15.08	\$1.28	11	9	35	45	12
7	7,878	\$15.19	\$16.47	\$1.29	11	10	32	41	17
8	12,753	\$17.12	\$18.92	\$1.80	13	8	47	14	32
9	6,625	\$15.58	\$16.87	\$1.29	10	11	62	13	15
10	9,667	\$15.68	\$16.96	\$1.27	9	9	70	7	14
11	11,794	\$12.05	\$13.50	\$1.45	16	5	13	16	66
12	14,249	\$15.19	\$16.74	\$1.55	12	7	35	43	15
13	9,200	\$15.54	\$16.85	\$1.30	10	10	57	12	21
14	9,114	\$14.77	\$16.80	\$2.02	17	5	13	35	47
15	15,505	\$15.74	\$17.04	\$1.29	10	9	62	7	22
16	2,061	\$14.70	\$16.00	\$1.30	10	9	35	45	11
17	11,070	\$13.86	\$15.19	\$1.33	10	2	42	53	4
18	5,946	\$14.12	\$15.42	\$1.30	11	9	36	35	20
19	5,359	\$15.24	\$16.52	\$1.29	11	10	47	22	21
20	4,104	\$15.78	\$17.14	\$1.36	11	8	56	11	24
21	5,398	\$15.18	\$17.03	\$1.86	15	7	13	43	38
22	21,085	\$15.11	\$16.65	\$1.53	14	8	25	33	34
23	4,397	\$15.38	\$17.02	\$1.64	13	6	50	10	34
24	3,070	\$14.36	\$15.65	\$1.29	12	10	53	18	20
25	11,004	\$15.14	\$16.43	\$1.29	13	9	28	44	20
26	1,664	\$12.17	\$13.46	\$1.29	13	8	16	57	20
27	2,270	\$14.33	\$15.62	\$1.29	11	10	17	53	21
28	2,722	\$11.77	\$13.06	\$1.29	14	5	22	45	28
29	1,190	\$13.65	\$15.26	\$1.61	15	5	13	27	55
30	6,546	\$14.47	\$15.76	\$1.29	11	8	28	46	18
31	2,277	\$14.98	\$16.29	\$1.31	11	11	53	11	25
32	8,481	\$10.65	\$12.20	\$1.55	19	3	7	32	58
33	297	\$11.93	\$13.21	\$1.28	11	1	7	89	2
34	208	\$16.86	\$18.20	\$1.33	9	7	47	46	1

Turning to non-LIS Beneficiaries in MA-PD, the demonstration produces an average savings of \$1.38 in premiums (Table 4.5). Compared to non-LIS beneficiaries in PDP plans, those in MA-PD plans tend to be affected by the demonstration by a lesser degree, with the majority of beneficiaries in most regions seeing differences in premiums of less than 10 percent. In fact, beneficiaries in Regions 11 (Florida), 21 (Louisiana) and 29 (Nevada) faced on average just a 1 percent difference in premiums. The effect of the demonstration is significantly greater for Region 27 (Colorado), where the average full enrollment premium is 28 percent higher than the average demonstration premium. Additionally, for more than 85 percent of beneficiaries in Region 20 (Mississippi) and more than 68 percent in Region 9 (South Carolina), the premium differences were greater than 10 percent. In Region 27 (Colorado), 69 percent of beneficiaries would have had full enrollment premiums that were more than 15 percent higher than demonstration premiums.

Table 4.5: Implications of the Enrollment Weight Methodology on Non-LIS Beneficiary MA-PD Premiums by PDP Region, 2007

Region	Number of Non-LIS Enrollees	Average Premium		Average Difference in Premium		Distribution of Differences in Beneficiary Premiums			
		Demo	Full Enrollment	Level	%	<5%	5%-10%	10%-15%	> 15%
1	3,158	\$17.68	\$19.18	\$1.50	6%	45%	37%	15%	3%
2	176,112	\$24.51	\$26.94	\$2.42	10	12	40	43	5
3	293,690	\$9.87	\$10.97	\$1.10	5	60	7	32	1
4	71,206	\$21.57	\$23.60	\$2.03	8	26	47	6	21
5	20,137	\$24.90	\$27.20	\$2.29	9	25	13	60	2
6	343,825	\$28.80	\$31.33	\$2.53	10	8	57	22	13
7	43,381	\$6.79	\$7.68	\$0.89	5	67	5	15	13
8	92,286	\$9.04	\$9.94	\$0.90	4	67	26	3	4
9	30,694	\$16.86	\$18.91	\$2.05	10	25	6	68	1
10	48,627	\$12.99	\$14.34	\$1.34	6	50	7	41	2
11	555,008	\$2.24	\$2.44	\$0.20	1	93	4	4	1
12	143,985	\$12.52	\$13.65	\$1.13	5	58	27	3	12
13	85,417	\$25.26	\$27.43	\$2.17	8	21	69	5	6
14	206,953	\$13.04	\$14.18	\$1.14	5	62	17	14	8
15	49,854	\$10.02	\$11.15	\$1.13	5	59	10	23	8
16	71,528	\$12.20	\$13.44	\$1.24	5	55	24	15	7
17	72,212	\$16.75	\$18.03	\$1.29	5	60	23	11	7
18	104,201	\$6.64	\$7.53	\$0.89	5	67	2	22	9
19	19,157	\$4.95	\$5.48	\$0.54	3	80	3	14	3
20	8,730	\$20.40	\$22.96	\$2.56	12	6	9	85	1
21	69,539	\$1.66	\$1.85	\$0.19	1	93	3	4	<1
22	220,315	\$6.30	\$6.87	\$0.57	2	81	9	10	1
23	37,584	\$8.74	\$9.65	\$0.91	5	67	14	14	6
24	18,788	\$9.94	\$11.26	\$1.31	6	52	1	47	<1
25	144,123	\$13.83	\$15.29	\$1.47	7	50	6	38	6
26	40,610	\$12.96	\$13.76	\$0.80	3	70	17	9	4
27	100,388	\$11.90	\$14.27	\$2.37	28	17	12	2	69
28	172,192	\$2.25	\$2.59	\$0.34	2	88	1	5	7
29	75,129	\$2.08	\$2.27	\$0.20	1	95	<1	5	1
30	164,494	\$19.78	\$22.35	\$2.57	22	8	32	12	48
31	48,462	\$13.92	\$15.27	\$1.34	5	50	23	26	1
32	864,637	\$5.90	\$7.12	\$1.22	11	55	<1	6	39
33	38,702	\$29.37	\$31.86	\$2.49	13	21	61	<1	18
34	81	\$12.72	\$14.33	\$1.61	10	42	17	11	30

5 BENEFICIARY RESPONSE TO PREMIUM CHANGES

As we saw in the previous section, beneficiaries would have faced premium increases of approximately 10 percent if the demonstration had not been in place in 2007. In this section, we turn to the question of how these changes might have affected beneficiaries' plan choices. To understand this, we look at the responses of beneficiaries who did experience premium changes in 2007, even with the demonstration. We first describe how beneficiaries transition across plan types each year depending on the change in premiums that they would face if they stay in the same plan. Then, we present a statistical model that quantifies how sensitive plan choices are to changes in premium across years. In particular, our model estimates the likelihood that a beneficiary will switch to a lower premium plan in response to an increase in the costs of staying in his current plan.

5.1 Enrollment Transitions across Plan Types

Tables 5.1 and 5.2 illustrate how non-LIS beneficiaries transitioned across plan types from 2006-2007 and 2007-2008, respectively. Beneficiaries who dropped out of Part D between 2006 and 2007 are excluded. In each table, the rows describe enrollment in the baseline year and the columns describe enrollment in the next year. Each cell depicts the number of beneficiaries who were enrolled in the plan type listed in its row in 2006 and enrolled in the plan type indicated by the column in 2007. The percent number below this count shows the fraction of beneficiaries who switched from the row plan to the column plan. For example, out of more than 5 million non-LIS beneficiaries in basic PDP plans in 2006, 85 percent stayed in basic PDPs in 2007, while 13 percent moved to enhanced PDPs; one percent moved to basic MA-PDs while another one percent moved to enhanced MA-PDs.

As these tables reveal, beneficiaries rarely switch between MA-PDP and PDP plan types, but they do move across benefit types. In particular, a significant share of beneficiaries enrolled in MA-PDP basic plans upgraded to enhanced plans in 2007 and 2008. Much of this movement, however, was driven by the plans: rather than beneficiaries switching to enhanced MA-PD plans, many basic MA-PD plans became enhanced plans in 2008 and the beneficiaries did not switch out. Beneficiaries who enrolled in PDPs remained mostly in the same plan benefit type as the plan in which they originally enrolled. From 2007 to 2008, about 90 percent of beneficiaries enrolled in PDP plans did not switch benefit type or plan type.

**Table 5.1: 2006-2007 Enrollment Transitions
Non-LIS Beneficiaries Enrolled in 2006-2007**

Plan in 2006	All Non-LIS 2006	PDP in 2007		MA-PD in 2007	
		Basic	Enhanced	Basic	Enhanced
PDP					
Basic	5,088,225 100%	4,344,991 85%	649,128 13%	37,256 1%	56,850 1%
Enhanced	2,370,502 100%	258,211 11%	2,047,399 86%	23,167 1%	41,725 2%
MA-PD					
Basic	1,093,072 100%	4,240 0.4%	2,926 0.3%	568,033 52%	517,873 47%
Enhanced	2,999,333 100%	15,011 0.5%	14,244 0.5%	304,784 10%	2,665,294 89%

**Table 5.2: 2007-2008 Enrollment Transitions
Non-LIS Beneficiaries Enrolled in 2007-2008**

Plan in 2007	All Non-LIS 2007	PDP in 2008		MA-PD in 2008	
		Basic	Enhanced	Basic	Enhanced
PDP					
Basic	5,018,117 100%	4,537,778 90%	376,750 8%	27,119 1%	76,470 2%
Enhanced	2,875,738 100%	221,326 8%	2,581,359 90%	16,654 1%	56,399 2%
MA-PD					
Basic	991,925 100%	4,145 0.4%	4,715 0.5%	317,745 32%	665,320 67%
Enhanced	3,607,611 100%	12,264 0.3%	17,860 0.5%	55,660 1%	3,521,827 98%

5.2 Beneficiary Response to Changes in Premium Levels

Beneficiaries who would face higher premiums if they continued in their original plan can choose to stay in their current plan, switch to a similar plan with a higher or lower premium level, or look for other plan options with higher or lower coverage. Tables 5.3 and 5.4 summarize how beneficiaries responded to changes in premiums from 2006 to 2007 by level of premium change. Table 5.3 examines beneficiaries in basic PDPs, presenting the shares who remain in their plan, those who switch to another basic plan with lower or higher premiums, and those who choose an enhanced plan with a lower or higher premium. Table 5.4 tracks the choices of those in enhanced PDPs. To isolate the effect of premium changes from other factors, the populations in these tables exclude beneficiaries who were enrolled in a plan that either

became inactive in the next year or changed its benefit level. Beneficiaries who switch regions from one year to the next are also excluded.

Table 5.3: Response to Changes in Premiums by Non-LIS Beneficiaries in Basic PDP Plans, 2006-2007

Change in Premium of 2006 Plan	Number of Beneficiaries	Stayed in Same Basic Plan in 2007	Moved to Another Plan of the Same Type (Basic) in 2007		Moved to a Different Type Plan (Enhanced) in 2007	
			Lower Premium	Higher Premium	Lower Premium	Higher Premium
Negative	402,292	93%	2%	1%	1%	3%
\$0	555	91	3	0	4	1
>\$0 to \$2	1,521,533	95	1	1	1	2
>\$2 to \$4	879,232	93	2	1	1	3
>\$4 to \$6	682,451	91	2	2	1	4
>\$6 to \$8	307,632	86	2	2	1	9
>\$8 to \$10	253,399	91	1	2	1	5
Over \$10	143,552	86	2	5	1	5
Total	4,190,646	93	2	1	1	3

Sample includes non-LIS beneficiaries who were enrolled in a basic PDP plan in 2006 and continued to be enrolled in Part D in January 2007. Also excluded are beneficiaries whose plans changed from basic to enhanced or enhanced to basic between 2006-2007.

In 2007, most beneficiaries in basic PDP plans who experienced an increase in premiums continued in the same plan from one year to the next. Ninety-three percent of beneficiaries whose plans had a decrease in premium stayed in the plan, as did a similar share of those who experienced premium increases, at least for increases below \$6. As the level of change in premium increases, the percent of beneficiaries who chose to remain in the same plan drops, although not monotonically.

Movers are not predominantly searching for a lower premium plan. Less than one-quarter of beneficiaries who changed plans enrolled in a basic PDP with a lower premium. The majority of beneficiaries who switched plans either moved to a higher-premium basic plan or moved to an enhanced plan. The percent of beneficiaries staying in the same plan when the premium rises by \$6 to \$8 is lower compared to the share of stayers in plans where the premiums rise between \$8 to \$10. However, what is driving this differential across premium change levels is beneficiaries moving to a higher-premium enhanced plan. As the premium change levels increases, the share of movers who selected a higher-premium either basic or enhanced plan increases from about half in the lowest levels to around three-quarters in the highest level.

Table 5.4 has the same structure as Table 5.3, but it shows figures for beneficiaries who were enrolled in PDP enhanced plans at the end of 2006. Like the beneficiaries enrolled in basic PDPs, the vast majority of these beneficiaries stayed in the same plan for 2007, but the share of stayers also drops as the premium change level increases, especially for changes above \$10 per

month. However, there are some differences. First, beneficiaries who switched plans disproportionately chose plans with lower premiums, with a non-negligible share moving to a basic plan in search for lower premiums. Second, movers are predominantly selecting options of the same benefit type and not choosing higher premiums.

Table 5.4: Response to Changes in Premiums by Non-LIS Beneficiaries in Enhanced PDP Plans, 2006- 2007

Change in Premium of 2006 Plan	Number of Beneficiaries	Stayed in Same Enhanced Plan in 2007	Moved to Another Plan of the Same Type (Enhanced) in 2007		Moved to a Different Type Plan (Basic) in 2007	
			Lower Premium	Higher Premium	Lower Premium	Higher Premium
Negative	391,460	92%	3%	2%	2%	0%
\$0	2,212	95	2	1	2	0
>\$0 to \$2	89,502	92	3	2	2	0
>\$2 to \$4	208,083	93	2	2	2	1
>\$4 to \$6	385,851	91	2	3	2	2
>\$6 to \$8	229,790	92	2	3	2	2
>\$8 to \$10	144,473	91	3	3	2	3
Over \$10	789,664	75	12	5	6	2
Total	2,241,035	86	6	3	4	1

Sample includes non-LIS beneficiaries who were enrolled in an enhanced alternative PDP plan in 2006 and continued to be enrolled in Part D in January 2007. Also excluded are beneficiaries who did not move out of their plan but whose plans changed from basic to enhanced or enhanced to basic between 2006-2007.

5.3 Predictors of Beneficiary Switch

To assess the likelihood that beneficiaries would have switched plans in the absence of the demonstration, we use statistical methods to estimate the impact of premium changes on the likelihood that a beneficiary will enroll in a lower premium plan, controlling for confounding demographic and clinical characteristics and Part D usage. Our analysis population includes all beneficiaries not receiving full-LIS subsidy who were enrolled in non-employer PDPs as of December 2006 and who continued to be enrolled in Part D in January 2007. To isolate the impact of changes in premiums on the likelihood to stay in the same plan, three additional restrictions are imposed in selecting the population to be included in the analysis. First, we select only beneficiaries who did not switch regions between 2006 and 2007. Second, the population excludes beneficiaries who were enrolled in a plan that became inactive in 2007. Third, beneficiaries had to have at least one lower and one higher cost option to choose from in 2007. Of the nearly 14 million non-LIS and partial-LIS beneficiaries who were enrolled in December 2006, over 6.4 million meet the inclusion criteria.

In the transition from 2006 to 2007, beneficiaries in our analysis population have one of three response options: (i) choose to stay in the same plan (ii) choose a lower-priced plan or (ii) choose another plan with a premium equal to or higher than that of the current plan. Because of the categorical nature of these responses, we use multinomial logistic regression to predict beneficiary choice. The regression includes demographic measures for gender, age, an interaction between age and gender, and race; Medicare enrollment and institutional status variables, which capture both health and program effects; and a clinical risk score and two Part D utilization measures, which capture clinical characteristics. We create the clinical risk variable by summing the relative risk factors for all the HCCs identified from 2006 for a beneficiary. This differs from the RxHCC risk measure as it excludes demographic variables, which we include independently in the regression. The measures for utilization are the annual out-of-pocket PDE costs and the number of PDE claims filed in 2006 for a beneficiary.

Beneficiary choices to change plans will depend not only on the cost of their own plan, but also on the cost of other options. We handle this distinction in two ways. First, we seek to capture both the income effect and the substitution effect by including in the model both changes in the premium for a beneficiary's own plan and the gap between that premium and the lowest premium available. Second, we capture information on the number of lower cost choices available in the region, using the rank of the 2006 plan in the distribution of 2007 premiums. For example, if a beneficiary is enrolled in a plan with rank equals 20, it means that in 2007 there were 19 lower cost options in the region compared to her 2006 plan. Finally, benefit type is included in the regression to reflect our finding that beneficiaries in basic PDPs are likely to upgrade their benefit type from one year to the next.

Table 5.5 presents the results of the regression. In logistic regression, predicted probabilities must take into account all of the characteristics of an individual. Therefore, to understand the impact of different characteristics, we run a series of different scenarios. In each scenario, we pick one characteristic to change and predict outcomes for everyone assuming different values of that characteristic. For example, if we wanted to understand the effect of gender alone, we would calculate expected behavior if everyone was male but was unchanged on every other characteristic (such as the beneficiary's age, health, etc.) We then calculate it again assuming everyone is female and compare the predicted results. The difference in the values is the predicted effect of that characteristic.

For example, the second scenario considers the effect of the drug benefit type of the beneficiary's 2006 plan on 2007 plan choice. We use the regression results to predict how many beneficiaries would stay in their current plan if all beneficiaries had enrolled in an enhanced alternative plan in 2006. We compare these predicted results with the predicted values under each of the different types of drug benefit types. We predict that 89.6 percent of beneficiaries

would stay in their existing enhanced plan, 6.7 percent would move to a lower-priced plan and 3.7 percent would move to an equal- or higher-priced plan. In comparison, we predict 3.7 percent fewer beneficiaries would stay in their plan if they were enrolled in a defined basic plan in 2006, and 4.3 percent more would move to a higher-priced alternative compared to if all had been enrolled in an enhanced alternative plan in 2006.

The effect of the demonstration is the first scenario in Table 5.5. Since everyone did have the demonstration premiums, we start with the actual premium values for both own plan and lowest cost plan. As a comparison, we add \$2.72 to each premium and predict the

Table 5.5: Probability of Switching Part D Plans among Non-LIS and Partial LIS Beneficiaries Enrolled in 2006 PDPs

Scenario	Response to Premium Changes		
	Stay in Plan	Choose Lower-Priced Option	Choose Equal- or Higher-Priced Option
<u>Premium Change</u>			
Demonstration Premium Compared to Enrollment Weighted Premium	88.6%	6.2%	5.2%
	-0.3%	2.0%	-1.7%
<u>Part D Benefit in 2006</u>			
Enhanced Alternative Compared to Defined Basic	89.6%	6.7%	3.7%
Basic Alternative	-3.7%	-0.6%	4.3%
Actuarially Equivalent	1.2%	-0.2%	-1.0%
	-6.6%	6.2%	0.4%
<u>Subsidy Available</u>			
No LIS Compared to 25 percent	89.4%	6.9%	3.7%
50 percent	-7.4%	8.8%	-1.4%
75 percent	-7.0%	8.8%	-1.8%
	-6.7%	8.7%	-1.9%
<u>Gender/Age Effects</u>			
Female 65 Compared to Female 85	87.9%	7.5%	4.6%
Male 65	2.0%	-0.2%	-1.8%
Male 85	0.8%	-0.7%	-0.1%
	2.2%	-0.8%	-1.4%
<u>Race Effect</u>			
White Compared to Black	89.2%	7.1%	3.7%
Hispanic	0.6%	0.5%	-1.1%
Asian	0.8%	0.5%	-1.3%
Native American	0.8%	0.2%	-1.0%
Other Race	2.0%	-1.2%	-0.8%
	1.1%	-0.5%	-0.6%

Scenario	Response to Premium Changes		
	Stay in Plan	Choose Lower-Priced Option	Choose Equal-or Higher-Priced Option
<u>Medicare Status</u>			
Aged	89.1%	7.2%	3.7%
Compared to			
Aged with ESRD	0.7%	-1.0%	0.4%
Disabled	1.2%	-0.7%	-0.5%
Disabled with ESRD	1.3%	-1.7%	0.4%
ESRD	2.7%	-2.4%	-0.3%
<u>Risk Effect</u>			
Low Clinical Risk	89.4%	7.2%	3.4%
Compared to			
High Clinical Risk	-0.4%	-0.1%	0.5%
<u>2006 Part D Utilization</u>			
12 Claims	89.0%	7.8%	3.2%
Compared to			
70 Claims	0.5%	-1.8%	1.3%
<u>Out of Pocket Costs 2006</u>			
\$240	90.2%	6.8%	2.9%
Compared to			
\$2,600	-5.3%	1.8%	3.5%

probabilities of switching under this scenario, which is in the absence of the demonstration. The demonstration effect, therefore, changes one's own plan premium (income effect) but does not change the absolute gap between the beneficiary's own premium and the lowest available premium (substitution effect). Under the demonstration, 88.6 percent of beneficiaries chose to stay in the same plan, 6.2 percent chose a lower-priced plan, and 5.2 percent choose a plan with a premium equal to or higher than the current plan. If the full enrollment methodology had been in effect, beneficiaries would have been slightly less likely, by 0.3 percent, to stay in the same plan and more likely by 2 percent to choose a lower-premium plan.

We explored whether partial subsidy beneficiaries were more or less sensitive to premium change by including an interaction effect in the model. The results from this model show that partial beneficiaries are more sensitive to premium change, being 6 to 7 percent less likely to stay in their 2006 plan and over 8 percent more likely to choose a lower-premium plan compared to non-LIS enrollees.

The rest of the table shows additional scenarios to understand the influence of other factors. For example, in examining demographic variables, the model predicts that 87.9 percent of women aged 65 stay in the same plan, while 7.5 percent choose a lower-premium plan and 4.6

percent choose an equal or higher-premium plan. Men of the same age are slightly more likely, by 0.8 percent, to stay in their 2006 plan. For both men and women, older beneficiaries are more likely to remain in their 2006 plan rather than choose a different plan.

Both Part D utilization measures also positively predict choice of an equal- or higher-premium plan. A beneficiary who files about 70 claims a year has a 1.3 percent greater likelihood of choosing an equal- or higher-premium plan compared to one who files around 1 claim a month, and a beneficiaries who have annual costs placing them in the coverage gap threshold have a 3.5 percent greater likelihood of choosing a higher-premium plan, which may have more coverage in the gap, than those beneficiaries whose costs are within the deductible phase.

Our findings suggest that premium changes of the level created by the demonstration have a slight effect on the likelihood that a beneficiary will search for a lower-cost option. We predict that of the 6.4 million beneficiaries in our analysis population, 128,995 (2 percent) more beneficiaries would have switched to a lower-cost plan. Excluded from this analysis is an evaluation of the choice to leave Part D in response to premium change. Beneficiaries who are not enrolled in a Part D plan in 2007 are treated like those who moved to another region; that is they are dropped from the sample. However, unlike moving, dropping out of Part D is a response to the service or costs of plans. Further analysis will explore this decision along with the decision to switch plans.

6 TAKE-UP OF PART D BY NEW BENEFICIARIES

A particular concern of the National Bid demonstration is whether an induced increase in beneficiary premiums could have discouraged newly eligible beneficiaries from enrolling in Part D. To assess this concern, this section relies on statistical models to evaluate the decision to enroll in Part D by newly eligible Medicare beneficiaries. Using variation in regional premium options, we can predict the response to premium increases that would have occurred without the demonstration. In Section 6.1, we review the characteristics of newly eligible beneficiaries in 2007 and show the timing of the Part D take up decision. Section 6.2 discusses the method used to predict take up and shows the predicted rates by beneficiary characteristics.

6.1 Part D Take Up Among Newly Eligible Medicare Beneficiaries

In 2007, 2,187,128 individuals became eligible for Medicare benefits – either by turning age 65, becoming disabled or having ESRD – and faced the decision of whether or not to enroll in Medicare Part D. We exclude beneficiaries who are deemed eligible and auto-enrolled in the program with full LIS subsidies.⁸ This leaves a sample whose take-up choice could be affected by premium levels. Table 6.1 shows the characteristics of these beneficiaries, by gender, race, and Medicare enrollment status. By far, the largest share of this group, at 85.3 percent, became eligible by age. Next are beneficiaries who qualified due to disability, who represent 14.2 percent of beneficiaries who became eligible in 2007.

Table 6.1: Characteristics of Non-LIS and Partial LIS Newly Eligible Medicare Beneficiaries

	2007	
	Number	%
Overall	2,187,128	100%
Gender		
Male	1,062,496	48.6
Female	1,124,632	51.4
Race		
White	1,905,248	87.1
Black	168,435	7.7
Hispanic	23,390	1.1
Asian	29,134	1.3
Native American	6,953	0.3
Other	53,968	2.5
Medicare Status		
Aged without ESRD	1,865,150	85.3
Aged with ESRD	1,727	0.1
Disabled without ESRD	309,524	14.2
Disabled with ESRD	2,127	0.1
ESRD only	197	0.0

⁸ We also exclude 24,518 beneficiaries who became eligible in 2007 and died in the same year.

All newly eligible Medicare beneficiaries qualify to enroll in Part D on their first day of eligibility. However, a large share of beneficiaries chose to postpone Part D take up in 2007. Table 6.2 shows take up at monthly periods after eligibility, with the last row showing beneficiaries who did not enroll within a year of qualifying for Part D. Of those newly eligible in 2007 who did not die within a year of qualifying for Part D, only 42 percent enrolled in a prescription drug plan, either through a stand-alone PDP or a MA-PD plan within 12 months. Those who did not enroll within the first 12 months include those who enrolled at a later period or have never enrolled. Of those who did enroll in the first year, most chose a plan at the time they became eligible for Medicare, with 25 percent of newly-eligible beneficiaries enrolling in a Part D plan in the same month they qualified for Medicare. Another 5 percent enroll one month after Medicare eligibility, and 2.7 and 2.1 percent at the second and third month respectively. Just over a third of newly-eligible beneficiaries enrolled by the third month. After the third month, take up drops to less than 1 percent per month.

Table 6.2: Timing of Part D Take-Up by Newly Eligible Beneficiaries (Excluding Dual-Eligibles) in 2007

Timing of Take Up	Number of Beneficiaries	Percent	Cumulative Percent
In same month of eligibility	546,416	25.0%	25.0%
At 1 month	109,263	5.0%	30.0%
At 2 months	58,640	2.7%	32.7%
At 3 months	45,467	2.1%	34.7%
At 4 months	31,171	1.4%	36.2%
At 5 months	19,005	0.9%	37.0%
At 6 months	18,019	0.8%	37.9%
At 7 months	15,346	0.7%	38.6%
At 8 months	14,401	0.7%	39.2%
At 9 months	13,807	0.6%	39.9%
At 10 months	14,936	0.7%	40.5%
At 11 months	15,314	0.7%	41.2%
At 12 months	14,389	0.7%	41.9%
More than a year	1,270,594	58.1%	100.0%
Total	2,186,768	100	

*Total differs from Table 6.1 due to missing variables.

Of course, one common reason for newly eligible beneficiaries to delay take-up is the availability of creditable coverage, through a current or former employer or union, that offers drug benefits at least as good as those available under Part D. These individuals do not face late enrollment penalties, a key factor in the decision on whether to take up Part D. This issue is one

of the characteristics we control for in looking at the role of premium changes on take up, as explained in the next section.

6.2 Predictors of Part D Take Up

To assess the impact of premium prices on Part D take up, we evaluate the decisions of beneficiaries who became eligible between January and December 2007 to enroll in either a stand-alone PDP or a MA-PD plan by the end of 2007. We approach this using a model in which the dependent variable is a dichotomous choice: (i) take up Part D in monthly period of eligibility, or (ii) do *not* take up a Part D plan in monthly period of eligibility. We first estimate the probability that a newly eligible beneficiary will take up Part D in a given month depending on the number of months that he or she has been eligible and the number of months left in calendar year. In particular, we assume the probability that a beneficiary will enroll in Part D after t months of eligibility follows a logit distribution of the following form:

$$(6.1) \quad h_{it}(X_{it}, t) = \frac{\exp(X' \beta + \delta t)}{1 + \exp(X' \beta + \delta t)}$$

Our logit model includes measures of premium price, MA-PD plan availability, gender, race and Medicare eligibility status as independent variables. Our measure of premium price is the lowest premium for a stand-alone PDP within a region. This measure varies across regions from \$1.90 to \$24.40. As all regions have a \$0 premium MA-PD option, we cannot include a measure of minimum MA-PD price, but instead use the number of MA-PD plans within a region. Depending on their region, beneficiaries have between 7 and 311 MA-PD plans to choose from. Of course, a beneficiary must also enroll in a Part C Medicare Advantage plan to choose one of the plan's Part D offerings. Because newly-eligibles might not enroll if they have creditable coverage, a control is used to indicate whether a beneficiary has coverage from another source in a given period.

In modeling take-up, there are two issues of timing that we need to consider. First, as seen in Table 6.2, the probability of take-up changes as a function of the months since eligibility. To address this, we use a survival function, calculating the probability of not enrolling in Part D after T periods of eligibility using the formula

$$(6.2) \quad S(T) = \prod_{s \leq T} (1 - h_s(X, s))$$

Our model includes all beneficiaries who became eligible between January and December 2007. Thus, for a beneficiary who becomes eligible in January 2007, the probability that he will enroll in CY2007 is given by $S(12)$. Alternatively, the probability that a beneficiary who becomes eligible in October 2007 will enroll in 2007 is $S(3)$. As a second timing measure, we distinguish

the quarter of eligibility, since individuals may be more likely to wait to enroll, for example, if they become eligible late in the plan year.

Table 6.3 shows model predictions for take-up by December 2007 by different groups.⁹ As with our model of switching, we run a series of different scenarios to assess the impact of different characteristics. In each scenario, we pick one characteristic to change and predict outcomes for everyone assuming different values of that characteristic.

Table 6.3: Probability of Enrolling in Part D among Non-LIS Newly Eligible Medicare Beneficiaries in 2007

Beneficiary Characteristics	Take Up in 2007
<u>Premium Change</u>	
Demonstration Minimum Regional Premium	34.2%
Compared to Enrollment Minimum Regional Premium	-0.3%
<u>MA-PD Options</u>	
20 MA-PDs	34.3%
Compared to 100 MA-PDs	-0.1%
<u>Gender</u>	
Female	36.8%
Compared to Male	-5.5%
<u>Race</u>	
White	35.0%
Compared to Black	-6.7%
Hispanic	-7.3%
Asian	-4.8%
Native American	-15.2%
Other Race	-2.9%
<u>Medicare Status</u>	
Aged	34.9%
Compared to Aged with ESRD	4.1%
Disabled	-5.1%
Disabled with ESRD	-1.4%
ESRD	-4.2%

In Table 6.3, we isolate the effects by PDP premium price, MA-PD option, gender, race, and Medicare status. At the actual premiums for 2007, 34.2 percent of newly-eligible beneficiaries are predicted to take up Part D by the end of 2007, as shown in the first part of

⁹ Estimates of Equation 1 are found in the appendix.

Table 6.3. If premiums increased by \$2.72, the effect of going to a full-enrollment weighted national bid calculation, just 0.3 percent fewer beneficiaries are predicted to enroll in a Part D. The number of MA-PD plan options also has a negative effect on Part D take up, with 0.1 percent fewer beneficiaries predicted to enroll in either a PDP or MA-PD plan when there are 100 MA-PD options compared to 20.

Looking at beneficiary characteristics, we see that males are more than 5 percent less likely to enroll in a prescription drug program within three months of eligibility. There is also variability by race, with whites showing the highest probability of take-up, and Native Americans showing the lowest, at 15.2 percent below whites. The aged with ESRD status show the highest take-up, at nearly 40 percent, and those who are disabled show the lowest take-up.

While the lowest premium option does predict take up, it does not have a large effect relative to other factors. If minimum premiums increased by \$2.72, the model predicts that about 6,500 fewer newly-eligible beneficiaries would have enrolled in the first three months of eligibility in 2007. Applying these results to the effect of the 2008 premium, where premiums would have risen by \$0.57 were it not for the demonstration, about 1,200 fewer newly-eligible beneficiaries would have chosen a prescription drug plan within three months. (Note that these figures do not taken into account the effect of the demonstration on Part D take up for those eligible for Medicare prior to 2007.)

7 IMPACT OF DEMONSTRATION ON CMS DIRECT SUBSIDY AND PREMIUM SUBSIDY PAYMENTS

In this section, we turn to the impact of the demonstration on the subsidies paid by CMS. We showed in Section 2 that the demonstration resulted in national average bid amounts that were \$3.84 higher in 2007 than they would have been in the absence of the demonstration and \$1.22 higher in 2008. As a consequence, the direct subsidy for a beneficiary with an average risk score would have dropped by \$2.72 in 2007 and \$0.57 in 2008. In this section, we use the findings from the preceding analyses to estimate the cost of this change in premiums on total CMS direct subsidy payments and on the LIS payments for premiums on behalf of partial LIS enrollees. The first part of this section describes the calculations for the impact on direct subsidy payments for all beneficiaries except for those receiving the full LIS. The analogous calculations for the impact on premium subsidy payments for partial LIS beneficiaries are discussed in the second part of this section.

7.1 Implications of the Demonstration on Direct Subsidies

We calculate the estimated changes in direct subsidy payments for all non-LIS and partial LIS beneficiaries under two scenarios. First, we assume that beneficiaries were not discouraged from enrolling in Part D as a result of higher premiums. Under this assumption, total member-months of enrollment are obtained directly from CMS enrollment files. The calculations under this assumption are presented in the top panel of Table 7.1. For each calendar year, we present the total expected change in direct subsidies for CY2007 and CY2008. Equation (7.1) describes the calculation of the direct subsidy

$$(7.1) \sum_i \Delta base * Rx_score_j * m_j$$

Where

Rx_score_j is the Part D risk score for beneficiary j

$\Delta base$ is the difference in direct subsidy resulting from the demonstration for a beneficiary with Part D risk score equal to 1. This value was equal to \$2.72 in 2007 and \$0.57 in 2008.

m_j is the number of months of enrollment in calendar year.

If the full enrollment methodology had instead been used to calculate the national average bid, CMS would have saved almost \$495 million and over \$113 million in payments in

CY2007 and CY2008, respectively. The additional cost of the demonstration to CMS in CY2008 was smaller due to the heavier weighting of the average bid by enrollment.

The bottom panel shows the calculation when Part D take up is predicted to decrease among non-dual Medicare eligibles.¹⁰ Using the model presented in Section 6, we predict that of the 1,045,886 new enrollees (excluding 100% LIS) in 2007, 6,560 of them would not have enrolled absent the demonstration. This translates to a 0.04 percent reduction in total enrollment for 2007. When these behavioral responses are taken into account, the estimated savings from using the full enrollment methodology is higher by \$593,659 for CY2007 and \$188,294 for CY2008.

Table 7.1: Demonstration Costs in Direct Subsidies (Excluding Full-LIS Beneficiaries)

Scenario	CY2007	CY2008
No Beneficiary Behavioral Response		
Direct Subsidies Demonstration	\$ 9,691,644,500	\$10,455,243,251
Direct Subsidies Full Enrollment	\$ 9,196,744,253	\$10,341,923,447
Change in Direct Subsidy Payment	\$ 494,900,247	\$113,319,804
Behavioral Response		
Direct Subsidies Full Enrollment	\$9,196,150,594	\$10,341,735,153
Change in Direct Subsidy Payment	\$495,493,906	\$113,508,098

7.2 Implications of the Demonstration on LIS Premium Subsidies (LIPS) for Partial LIS Beneficiaries

The impact of the demonstration on LIPS for a partial LIS beneficiary depends his LIS subsidy level, the low-income benchmark premium in his region, and whether the plan in which he is enrolled is above or below the benchmark. To understand the mechanisms behind this, consider three different beneficiaries, each with a 50 percent LIS in a region where, under the demonstration, the regional benchmark in 2007 is \$18. With the \$2 de minimis range in 2007, CMS subsidizes up to \$10 ($0.5 * (\$18 + \$2)$) for plans with premiums at or below \$20, and subsidizes up to \$9 ($0.5 * \18) for those in plans with premiums above \$20. For this example, assume that the regional benchmark would have gone up by \$2 under a full-enrollment weighted national bid, increasing the benchmark in this region to \$20 and the de minimis range to \$22. As Table 7.2 shows, Beneficiary A is in a plan with a \$16 premium, which falls below the regional benchmark under the demonstration. Absent the demonstration, his premium would have been

¹⁰ Because we do not have income information to assess whether a newly non-dual eligible will qualify for partial LIS subsidies, we assumed that any drop in Part D participation is attributable solely to the non-LIS group. Since the average change in subsidy from the full enrollment methodology to the demonstration is lower among partial LIS enrollees, this assumption creates a slight over estimation of the cost of demonstration

\$18.72, but his plan would still have been below the benchmark. CMS is liable for a LIPS payment of \$8 under the demonstration, and would have been liable for \$9.36 ($0.5 * 18.72$) without it, for an increase cost of \$1.36. Beneficiary B is in a plan with a premium of \$19.50 that would have gone up to \$22.22. Because the demonstration premium price places the plan in the de minimis range, CMS's liability covers the whole premium, leading to a 50 percent subsidy of \$9.75. Without the demonstration, the beneficiary's plan premium would have risen to \$22.22, placing the plan above the assumed \$22 de minimis range, which means that CMS would have been only liable for subsidizing 50 percent of non-demonstration regional benchmark amount of \$20. So in this scenario, the subsidy moves from \$9.75 to \$10, for an increase of \$0.25. The last beneficiary is in a plan with a demonstration premium of \$20.50 that would have increased to \$23.22 under the full enrollment national bid, placing him in a plan with a premium above the benchmark and de minimis range. In this scenario, CMS incurs an extra \$1 in cost, moving from a \$9 to a \$10 LIPS for this beneficiary.

Table 7.2: Impact of Demonstration on Monthly Beneficiary Premiums and LIS Premium Subsidies (LIPS) for Three Example 50% LIS Beneficiaries

	A	B	C
Demonstration			
Below Regional Benchmark/ De Minimis (\$18/\$20)	Yes	Yes	No
Monthly Plan Premium	\$16.00	\$19.50	\$20.50
CMS LIPS Payment	\$8.00	\$9.75	\$9.00
Full Enrollment			
Below Regional Benchmark/ De Minimis (\$20/\$22)	Yes	No	No
Monthly Plan Premium	\$18.72	\$22.22	\$23.22
CMS LIPS Payment	\$9.36	\$10.00	\$10.00

Table 7.3 presents the change in LIPS payments on behalf of partial LIS beneficiaries in stand-alone PDPs for CY2007 and CY2008. These calculations assume no behavioral response and increases based on estimates of benchmark calculations using enrollment from June of the previous year. This approach leads to increases in regional benchmarks from \$0.97 to \$2.72 in 2007 and \$0.49 to \$0.57 in 2008. To calculate total LIPS payments, we multiply the number of partial LIS member-months in a calendar year, as reported in CMS enrollment files, by the average LIPS payments among partial LIS beneficiaries who were enrolled in January of the corresponding year. To calculate the average LIPS payment in our sample, we simply subtracted

the LIS beneficiary premium (see Table 4.4) from the plan bid and obtained the average of the resulting quantity. As the table shows, the demonstration increased the average LIPS by \$1.52 in 2007 and \$0.29 in 2008. Had the full enrollment methodology been used for the national average bid calculation, CMS would have saved over \$4.2 million in LIPS payments on behalf of partial-LIS beneficiaries in 2007 and more than three quarters of \$1 million in 2008.

Table 7.3: CMS Costs in LIS Premium Subsidy (LIPS) Payments for Partial LIS Beneficiaries

	CY 2007	CY 2008
Partial-LIS Beneficiaries	232,795	222,213
Demonstration Methodology		
Average LIPS Payment	\$12.94	\$16.01
Total LIPS Payments	\$36,137,406	\$42,680,139
Enrollment Methodology		
Average LIPS Payment	\$14.46	\$16.30
Total LIPS Payments	\$40,390,389	\$43,471,397
Demonstration Costs for LIS Premium Subsidies	\$4,252,983	\$791,258

Our model does not consider the likelihood of beneficiaries moving to plans with premiums below the LIS regional benchmark, choosing not to enroll in Part D, or dropping out of Part D. Further analysis is needed to predict how partial LIS beneficiaries would respond given higher premiums in order to measure the effect on actual savings to CMS. Because LIS can mitigate changes in premiums by moving to a plan that is below the benchmark and about 80 percent of partial LIS are enrolled in below benchmark plans, once behavioral responses are modeled, we expect the largest response in plan switching with limited response on Part D take up or disenrollment.

8 CONCLUSION

The MMA mandated that CMS direct subsidies to plans be determined annually by the national average bid weighted by each plan's share of enrollment in the previous year. In 2006, beneficiaries disproportionately enrolled in lower premium plans. Given this pattern of enrollment, the calculated national average bid for 2007 would have been significantly lower than that for 2006. A lower national average bid results in lower CMS subsidies to plans and higher premiums for beneficiaries, even if plans did not change their bid amounts between 2006 and 2007. To avoid this scenario, CMS launched the "Medicare Demonstration to Limit Annual Changes in Part D Premiums Due to Beneficiary Choice of Low-Cost Plans." Under this demonstration, the national average bid amount in 2007 and 2008 was a composite of the uniform weighting methodology used in 2006 and the enrollment weights methodology specified in the MMA.

This report evaluates the impact of the demonstration across four core areas:

- 1) Beneficiary premiums
- 2) Beneficiary response to changes in premiums
- 3) Part D take-up
- 4) Medicare payments to plans

A summary of our findings are presented below.

8.1 Effect on Beneficiary Premiums

We examine how the demonstration would have affected premium levels for beneficiaries in 2007 and 2008. Our main findings reveal:

- The demonstration led to a \$2.72 increase in the direct subsidy paid by CMS and an equal reduction in the monthly plan premium paid by beneficiaries in 2007. In 2008, the difference was smaller, at \$0.57.
- In absence of the demonstration, average premiums would have been 11 percent higher for PDP enrollees and 7 percent higher for MA-PD enrollees. Enrollees in basic alternative plans are most affected by the demonstration compared to those in other plan types; 75 percent would have faced premiums that were more than 15 percent higher. Enrollees in enhanced plans are least affected, as most (over 70 percent) would have faced premium increases of less than 10 percent.
- The impact of the demonstration varies widely across PDP regions. The share of non-LIS enrollees in PDP plans facing a premium increase of greater than 15 percent ranged from less than one percent in one region to nearly 40 percent in another. For partial LIS enrollees in PDP plans, the average difference in each region between demonstration premiums and enrollment weighted premiums ranged from 9 percent to 19 percent.

Average premium differences for enrollees in MA-PD plans ranged from 1 percent to as high as 28 percent.

8.2 Beneficiary Response to Premium Changes

The findings below present the effects of the increase in premiums on beneficiary choices. Our analysis of beneficiary plan switching reveal:

- When faced with premium increases, the vast majority of non-LIS PDP enrollees chose to remain in the same plan between 2006 and 2007.
- Among enrollees in basic PDP plans who chose to move plans, less than one-quarter chose another basic PDP plan with a lower premium. In contrast, enrollees of enhanced PDPs who switched were more likely to choose a lower-priced enhanced or basic plan.
- Had the demonstration not been in effect in 2007, our model predicts that 0.3 percent fewer beneficiaries would have chosen to remain in the same plan and 2 percent more would have switched a lower-premium plan.
- Partial-LIS enrollees are more likely to switch to a lower premium plan compared to their non-LIS counterparts.
- Responses vary across demographic characteristics. Whites, women, and younger beneficiaries are less likely to stay in the same plan and more likely to switch to an equal- or higher-priced plan.
- Beneficiaries with high drug utilization are slightly more likely to stay in the same plan and less likely to choose a lower-premium plan, while those who have high out-of-pocket drug costs are less likely to stay in the same plan, but are more likely to choose a lower-premium plan.

8.3 Part D Take-Up

Our main findings on the impact of the demonstration on initial enrollment into the Part D program are the following:

- Had the demonstration not been in effect, 0.3 percent fewer newly-eligible beneficiaries (excluding dual-eligibles) in 2007 are predicted to enroll in Part D; this translates to about 6,500 beneficiaries. For 2008, our model predicts a drop in take up of about 1,200 beneficiaries.
- Demographic characteristics affect the likelihood of take up. Whites and women are more likely to enroll in Part D within the first three months of eligibility.
- Beneficiaries who are aged with ESRD show the highest take-up, at close to 40 percent, while those in the disabled category show the lowest rate, at less than 30 percent.

8.4 CMS Payments to Plans

Finally, we examine the impact of the demonstration on CMS direct subsidy and LIS premium payments to plans on behalf of partial LIS enrollees. The results can be summarized as follows:

- Under the demonstration in 2007, the national average bid was \$2.72 higher than what it would have been, leading to an additional \$495 million in direct subsidy payments to plans by CMS. For 2008, the additional cost of the subsidy payments was over \$113 million.
- Assuming that premium increases in absence of the demonstration would have led to a decrease in Part D take up, CMS would have paid direct subsidies for a fewer number of beneficiaries. Taking this behavioral effect into account, the additional savings of the enrollment weighting methodology would have been \$593,659 for 2007 and \$188,294 in 2008.
- The demonstration increased the average premium subsidy for partial LIS enrollees by \$1.52 in 2007 and \$0.29 in 2008, translating to an additional \$4.2 million and \$791,000 in payments, respectively.

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This appendix provides additional technical information on the regression analyses presented in Sections 5 and 6. As noted in the text, the results for Tables 5.5 and 6.3 are based on logistic or multinomial logistic regression analyses. Table A.1 presents the regression coefficients, confidence intervals and other regression results from the STATA© output for the models of plan selection. The baseline option is stay in the same plan, with the first set of coefficients show the relationship between the independent variables and the probability in choosing another plan whose premium is lower than the beneficiary's 2006 plan, and the second set of coefficients showing the relationship between the independent variables and moving from the same plan to a plan that has a premium that is equal to or greater than the 2006 plan. Table A.2 presents results for the model of take-up.

Because logistic regression is nonlinear, the regression coefficients do not have a direct interpretation. In practice, interpretation of the logistic regression coefficient for any given variable requires assumptions on the values of all other variables. One common strategy is to interpret each coefficient at the means of all remaining variables. When many of the variables are dichotomous, as in this analysis, this approach sets each variable at its share in the sample population. For example, the average value for black would be the share of the population that is black. The resulting value for the variable under consideration is thus tested for averages that do not actually reflect any individual in the population.

As an alternative approach, we use simulation to calculate the impact of each focal variable. Consider the take-up model. To estimate the difference due to having more MA-PD choices, we estimate two values for each person. First, we have STATA predict take-up for each person using the coefficients from the logistic regression, keeping each person's actual values on all variables except the number of MA-PDs. For the number of MA-PDs, we set the value first to 20 for each person. The resulting predictions tell us how many people would be expected to take up Part D if they had a choice of 20 MA-PDs. We then repeat the calculations plugging in 100 MA-PD options instead, again keeping all other observed characteristics for each person. This gives us a second prediction on how many people would take up Part D if they had a choice of 100 MA-PDs. The difference between these two values is reported in Table 6.3. This approach has the benefit of using actual values for every member of the sample for all variables except the one being tested in the simulation. We use the same basic approach for all of the scenarios presented in Tables 5.5 and 6.3.

Table A.1: Regression Output for Probability of Switching to Lower-Premium or Equal-/Higher-Premium Part D Plan, 2006-2007

Choice/Independent Variables	Coef.	Std. Err.	z	P > z	[95% Conf. Interval]	
Choose Lower-Premium Plan						
Premium Change from 2006 to 2007	0.062	0.0003	196.65	0	0.061	0.062
Premium in Original Plan in 2007	-0.043	0.0006	-71.43	0	-0.044	-0.042
Difference between Original Plan Premium and Lowest PDP Premium	0.074	0.0006	114.39	0	0.072	0.075
Original Plan Rank*	0.000	0.0000	4.58	0	0.000	0.000
Standard	-0.067	0.0077	-8.75	0	-0.082	-0.052
Basic Alternative	-0.050	0.0044	-11.34	0	-0.059	-0.041
Actuarially Equivalent	0.811	0.0063	127.9	0	0.799	0.823
Original Plan Changed Benefits	0.813	0.0042	192.62	0	0.805	0.821
LIS subsidy 25%	1.020	0.0132	77.25	0	0.994	1.046
LIS subsidy 50%	1.010	0.0120	83.91	0	0.987	1.034
LIS subsidy 75%	1.003	0.0115	87.52	0	0.981	1.026
Female	0.192	0.0269	7.13	0	0.139	0.245
Female*age	-0.001	0.0004	-3.24	0.001	-0.002	0.000
Age	-0.001	0.0003	-4.52	0	-0.002	-0.001
Black	0.075	0.0076	9.92	0	0.060	0.090
Asian	0.020	0.0216	0.94	0.347	-0.022	0.063
Hispanic	0.065	0.0205	3.18	0.001	0.025	0.105
Native American	-0.223	0.0411	-5.43	0	-0.304	-0.143
Other Race	-0.092	0.0171	-5.36	0	-0.125	-0.058
Aged with ESRD	-0.180	0.0227	-7.94	0	-0.225	-0.136
Disabled	-0.118	0.0079	-14.91	0	-0.134	-0.103
Disabled with ESRD	-0.316	0.0406	-7.77	0	-0.395	-0.236
ESRD only	-0.478	0.1202	-3.97	0	-0.713	-0.242
Institutional in January 2007	-0.760	0.0259	-29.37	0	-0.811	-0.709
Number of PDEs in 2006	-0.005	0.0001	-54.81	0	-0.005	-0.005
Part D Out of Pocket Expenses	0.000	0.0000	48.62	0	0.000	0.000
Risk Score	-0.021	0.0049	-4.39	0	-0.031	-0.012
Constant	-3.143	0.0264	-119.01	0	-3.195	-3.091
Choose Equal- or Higher-Premium Plan						
Premium Change from 2006 to 2007	-0.011	0.0004	-30.41	0	-0.012	-0.010
Premium in Original Plan in 2007	-0.042	0.0008	-51.66	0	-0.044	-0.041
Difference between Original Plan Premium and Lowest PDP Premium	0.041	0.0009	47.77	0	0.040	0.043
Original Plan Rank*	-0.003	0.0000	-73.56	0	-0.003	-0.003
Standard	0.841	0.0073	114.64	0	0.826	0.855
Alternative Basic	-0.321	0.0054	-59.73	0	-0.332	-0.311
Actuarially Equivalent	0.180	0.0093	19.36	0	0.162	0.198
Original Plan Changed Benefits	0.126	0.0068	18.38	0	0.112	0.139
LIS subsidy 25%	-0.417	0.0301	-13.85	0	-0.475	-0.358
LIS subsidy 50%	-0.579	0.0294	-19.67	0	-0.637	-0.522
LIS subsidy 75%	-0.682	0.0293	-23.25	0	-0.739	-0.624
Female	0.592	0.0354	16.72	0	0.523	0.661

Choice/Independent Variables	Coef.	Std. Err.	z	P > z	[95% Conf. Interval]	
Female*age	-0.008	0.0005	-17.59	0	-0.009	-0.007
Age	-0.019	0.0004	-43.00	0	-0.019	-0.018
Black	-0.369	0.0126	-29.30	0	-0.394	-0.345
Asian	-0.337	0.0341	-9.88	0	-0.404	-0.270
Hispanic	-0.440	0.0373	-11.81	0	-0.513	-0.367
Native American	-0.286	0.0548	-5.22	0	-0.394	-0.179
Other Race	-0.187	0.0235	-7.94	0	-0.233	-0.141
Aged with ESRD	0.089	0.0255	3.50	0	0.039	0.139
Disabled	-0.164	0.0103	-15.87	0	-0.184	-0.144
Disabled with ESRD	0.091	0.0441	2.06	0.039	0.005	0.177
ESRD only	-0.124	0.1327	-0.93	0.35	-0.384	0.136
Institutional in January 2007	-0.502	0.0280	-17.94	0	-0.557	-0.448
Number of PDEs in 2006	0.006	0.0001	56.47	0	0.006	0.006
Part D Out of Pocket Expenses	0.000	0.0000	130.68	0	0.000	0.000
Risk Score	0.212	0.0063	33.44	0	0.199	0.224
Constant	-1.503	0.0345	-43.59	0	-1.570	-1.435

*Rank of the beneficiary's 2006 plan by its premium in 2007.

No. of obs= 6449767 LR chi2(54)=522938.21 P > chi2 = 0.0000 Pseudo R2=0.0986 Log Likelihood= -2390316.1

Table A.2: Logistic Regression Results for Part D Take-Up, 2007

Variable	Coef.	Std. Err.	z	P > z	[95% Conf. Interval]	
Lowest PDP premium	-0.004	0.0004	-10.49	0	-0.005	-0.004
Number of MA-PDPs	-0.0001	0.00002	-3.77	0	-0.0001	-0.00004
Creditable Coverage	-0.926	0.004	-231.35	0	-0.934	-0.918
Female	0.225	0.002	101.2	0	0.221	0.229
Black	-0.290	0.004	-66.6	0	-0.298	-0.281
Hispanic	-0.319	0.011	-30.13	0	-0.340	-0.298
Asian	-0.205	0.010	-21.19	0	-0.224	-0.186
Native American	-0.735	0.024	-31.08	0	-0.781	-0.688
Other Race	-0.120	0.007	-16.64	0	-0.134	-0.106
Aged ESRD	0.162	0.040	4.09	0	0.085	0.240
Disabled	-0.216	0.003	-65.41	0	-0.222	-0.209
Disabled and ESRD	-0.059	0.036	-1.65	0.1	-0.128	0.011
ESRD	-0.176	0.117	-1.5	0.134	-0.406	0.054
Month 2	-1.628	0.004	-459.26	0	-1.635	-1.621
Month 3	-2.285	0.005	-499.12	0	-2.294	-2.276
Month 4	-2.620	0.005	-500.27	0	-2.630	-2.610
Month 5	-3.071	0.006	-491.74	0	-3.083	-3.058
Month 6	-3.627	0.008	-469.05	0	-3.642	-3.612
Month 7	-3.748	0.008	-466.78	0	-3.764	-3.732
Month 8	-3.967	0.009	-459.95	0	-3.984	-3.950
Month 9	-4.093	0.009	-458.42	0	-4.111	-4.076
Month 10	-4.201	0.009	-458.25	0	-4.219	-4.183
Month 11	-4.197	0.009	-465.67	0	-4.215	-4.180
Month 12	-4.237	0.009	-468.67	0	-4.255	-4.220
Month 13	-4.361	0.009	-467.51	0	-4.379	-4.343
Month 14	-4.920	0.012	-413.03	0	-4.943	-4.896
Month 15	-5.010	0.013	-390.94	0	-5.035	-4.985
Month 16	-5.098	0.014	-367.4	0	-5.126	-5.071
Month 17	-5.124	0.015	-346.77	0	-5.153	-5.095
Month 18	-5.212	0.016	-320.76	0	-5.244	-5.180
Month 19	-5.248	0.018	-298.03	0	-5.283	-5.214
Month 20	-5.432	0.021	-261.84	0	-5.473	-5.392
Month 21	-5.543	0.024	-230.46	0	-5.590	-5.496
Month 22	-5.686	0.029	-194.22	0	-5.743	-5.628
Month 23	-5.857	0.039	-150.19	0	-5.933	-5.780
Month 24	-6.159	0.062	-98.56	0	-6.282	-6.037
CY2008	1.259	0.005	270.03	0	1.250	1.268
First Time Eligible in Q2	-0.072	0.003	-22.31	0	-0.078	-0.065
First Time Eligible in Q3	-0.234	0.003	-72.78	0	-0.240	-0.228
First Time Eligible in Q4	-0.425	0.004	-118.77	0	-0.433	-0.418
Constant	-0.832	0.008	-109.25	0	-0.847	-0.817

No. of obs= 25745732 LR chi2(40)=1982801.65 P > chi2 = 0.0000 Pseudo R2=0.2366 Log Likelihood= -3199249.6

Table A.3: States by PDP Region

PDP Region	State(s)
1	NH, ME
2	CT,MA,RI,VT
3	NY
4	NJ
5	DE, DC, MD
6	PA, WV
7	VA
8	NC
9	SC
10	GA
11	FL
12	AL, TN
13	MI
14	OH
15	IN, KY
16	WI
17	IL
18	MO
19	AR
20	MS
21	LA
22	TX
23	OK
24	KS
25	IA, MN, MT, ND, NE, SD, WY
26	NM
27	CO
28	AZ
29	NV
30	OR, WA
31	ID, UT
32	CA
33	HI
34	AK