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Evaluation of Medicare Part D Late Enrollment Penalty Demonstration for Low- Income Subsidy Applicants and Residents Affected by Hurricane Katrina

Final Report

September 30, 2010

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Candace Natoli

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EXECUTIVE SUMMARY

With the initiation of Medicare Part D prescription drug coverage in January 2006, and in accordance with Section 1860D-14 of the Social Security Act, the Centers for Medicare & Medicaid Services (CMS) established a low-income subsidy (LIS) program to reduce or eliminate low-income enrollees' out-of-pocket expenses associated with the drug benefit. Nondeemed low-income beneficiaries are required to apply for and submit written proof of income and assets to the Social Security Administration (SSA) or their state Medicaid agencies to be considered for premium and other federal cost-sharing subsidies under Part D.[1,2] The application review process takes time and, if eligibility cannot be determined until after the end of the individual's initial enrollment period (IEP), the beneficiary, like non-LIS-eligible beneficiaries, would have been subject to a late enrollment penalty (LEP).[3] The LEP, equivalent to one percent of the national base premium amount for each uncovered month, is applied to each covered month for as long as the beneficiary remains enrolled in Part D. The permanent penalty payments might have prevented beneficiaries with limited financial resources from enrolling in the Medicare outpatient drug benefit even after they were determined eligible for the

[1] Low-income Medicare beneficiaries are composed of two groups, deemed and nondeemed. The deemed group consists of full-benefit dual eligibles (that is, those receiving full Medicare and Medicaid benefits) and partial-benefit dual eligibles (that is, those in the Medicare Savings Program), as well as Supplemental Security Income (SSI) beneficiaries who are not eligible for Medicaid. The nondeemed group consists of all other beneficiaries with incomes below 150 percent of the federal poverty level and assets below $11,990 (for an individual in 2008) and $23,970 (for a married couple in 2008) (42 CFR 423.773).

[2] Only one state (Kansas) temporarily participated in the LIS determination process. All other states relied on SSA to determine eligibility for the LIS. CMS officials noted that, although Kansas was alone in this respect, like every other state it had residents who applied via SSA as well.

[3] The IEP is either (1) May 15, 2006, for a beneficiary who was eligible for Medicare Part D in January 2006; or (2) the last day of the third month following the month of initial eligibility for Medicare Part D for a beneficiary who becomes eligible for Part D after January 2006.

LIS, or deterred them from purchasing drug coverage until they are sick and need prescription medications.

To encourage all nondeemed low-income beneficiaries who were eligible for the LIS to take up prescription drug coverage during the first year of the new drug benefit program, CMS used its demonstration authority to eliminate the LEP for LIS applicants who enrolled in a Part D drug plan in 2006 more than 62 days after the end of their IEP. Because of the temporary hardships they faced, CMS also granted LEP demonstration status to beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in 2005. The initial demonstration applied mainly to beneficiaries who were already eligible for prescription drug coverage but had not yet enrolled in a Part D drug plan by the end of July 2006 (at least 63 days after the end of the first-year IEP). CMS later extended the demonstration for two additional years and then, under the 2008 Medicare Improvements for Patients and Providers Act, Congress made the LEP exemption permanent for all LIS applicants. As long as they remain continuously enrolled in a Part D drug plan, or have an alternative source of comparable coverage, beneficiaries who apply and are determined eligible for the LIS never have to pay a penalty for enrolling after the end of their IEP. Residents of Hurricane Katrina were eligible to participate in the LEP demonstration only in 2006.

In August 2007, CMS subcontracted with Mathematica Policy Research, through a contract with Acumen, LLC, to evaluate the first three years of the LEP demonstration. This report presents the findings from that evaluation, focusing on four key policy questions: (1) How many beneficiaries benefitted from the LEP demonstration and what are their characteristics? (2) What was the impact of the LEP demonstration on the use and cost of Part D services? (3) Did the elimination of the LEP for beneficiaries exercising their option to enroll in a Part D plan during the extended enrollment period increase the efficiency and economy of Medicare through a

reduction in Medicare Parts A and B spending? and (4) What was the overall net cost of the LEP demonstration to the federal government? We summarize the findings as they pertain to each of the four research questions and briefly discuss the limitations of the study in the following sections.

LEP Demonstration Enrollment in Part D

The LEP demonstration benefitted a small but significant number of low-income Medicare beneficiaries who might not have joined the federal prescription drug program if they had been required to pay a penalty (Table ES.1). A total of 8.3 percent of all LIS applicants (203,865 individuals) enrolled in Part D under the LEP demonstration between 2006 and 2008. Nearly one-quarter of these demonstration participants enrolled in a Part D drug plan during the last five months of 2006. In addition, 7,058 beneficiaries affected by Hurricane Katrina enrolled in Part D under the LEP demonstration in 2006, representing 2.5 percent of all beneficiaries living in one of the counties or parishes affected by the storm who enrolled in Part D in 2006. The majority of LIS applicants and Hurricane Katrina residents who benefitted from the demonstration (83 percent and 95 percent, respectively) remained continuously enrolled in a Part D plan during the study period. Compared with the nondemonstration beneficiaries, the LEP demonstration beneficiaries were slightly younger and healthier, more likely to be male, non-white or disabled, and less likely to be enrolled in Medicare Advantage plans.

Table ES.1. Number and Percentage of LIS Applicants and Hurricane Katrina Residents Enrolled in Part D, by LEP Demonstration Status

	LIS Applicants		Hurricane Katrina Residents	
Demonstration Status	Number	Percentage	Number	Percentage
Demonstration Enrollees	203,865	8.32	7,058	2.52
Nondemonstration Enrollees	2,246,613	91.68	272,535	97.48
Total	2,450,478	100.0	279,593	100.0

Source: Mathematica analysis of CME file, EDB, and CMS-provided administrative files, 2006–2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. A total of 1,631 beneficiaries enrolled in Part D under both LIS and Hurricane Katrina demonstration authority and are included in both categories.

Part D Service Use and Expenditures among LEP Demonstration Enrollees

Compared with nondemonstration beneficiaries, fewer of the LEP demonstration participants incurred a Part D event (PDE) during their first year of enrollment (70 percent for participants versus 85 percent for nonparticipants, among LIS applicants, and 75 percent versus 91, respectively, among Hurricane Katrina residents) Among beneficiaries who used Part D services, the LEP demonstration participants incurred fewer PDEs and lower Medicare payments ($929 versus $1,282 among the LIS applicants and $184 vs. $212 among the Katrina beneficiaries).

Because demonstration enrollment began only in August 2006, Part D utilization rates remained relatively low during the first year of the program. By the second year of the demonstration, 76 percent of LIS applicants and 90 percent of Hurricane Katrina residents who benefitted from the demonstration used a Part D prescription medication. Among users, LIS applicants who benefitted from the LEP demonstration purchased on average 28 prescriptions and participants from the counties or parishes affected by Hurricane Katrina filled on average 36 prescriptions. Only 4.3 percent of the LIS applicants and 2.5 percent of the Hurricane Katrina residents who participated in the demonstration reached the catastrophic coverage threshold. By

2008, 78 percent of demonstration LIS applicants had at least one prescription drug event and, among users, purchased on average 34 covered prescription medications. Less than seven percent of demonstration LIS applicants reached the catastrophic coverage threshold. The rate and amount of Part D service use among demonstration Hurricane Katrina residents remained roughly the same in 2008.

Eighty percent of all LIS applicants between 2006 and 2008 are fully subsidized for premiums, annual deductibles, and copayments after reaching catastrophic coverage and partially subsidized for copayments on drugs up to the catastrophic threshold. By 2008, when most demonstration participants were enrolled in Part D for the full year, CMS paid a total of $1,165 in drug costs for each LIS applicant. Twenty percent of this annual average federal payment amount was attributable to the low-income premium subsidy (LIPS), 55 percent was attributable to the low-income cost share (LICS), and 25 percent was due to the full copayment subsidy after reaching catastrophic coverage. Because non-LIS-eligible Hurricane Katrina residents who enrolled in Part D under the LEP demonstration authority are not eligible for the federal low-income premium and copayment subsidies, CMS paid only $119 on average for this demonstration population in 2008.

Medicare spent a total of $11.9 million in 2006, $101.1 million in 2007, and $193.9 million in 2008 in overall Part D subsidies for LIS applicants and Hurricane Katrina residents who signed up late and were exempted from the LEP. Total federal outlays for Part D services among all LEP demonstration participants during the first three years of the program were $306.9 million, equivalent to 0.2 percent of total federal benefit payments for Part D services during this period. In 2008, LIS applicants who enrolled in Part D under the LEP demonstration authority represented 0.8 percent of total Part D enrollment, but accounted for 0.4 percent of total Part D benefit payments during the year.

Impact of LEP Demonstration on Medicare Spending for Medical Services

Estimating the effect of drug coverage on medical expenditures is particularly difficult. Beneficiaries who enroll in Part D are likely to be in poorer health than those who do not enroll and, as a result, are likely to incur higher future medical costs even with outpatient drug coverage. We were fortunate in being able to take advantage of a natural experiment created by the provision of transitional drug assistance to low-income beneficiaries before the implementation of Part D. Although the income requirements for the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance Program and the Part D LIS program were similar, only the latter has an asset requirement. Low-income beneficiaries who received transitional drug assistance and either did not apply for the LIS or, because of the stricter asset test, were ineligible to receive the LIS represent the best comparison group that can be constructed from administrative data. Further, because most LIS applicants receive a full premium subsidy and minimal cost-sharing requirements, adverse selection into Part D on the basis of health status among the treatment population should be less than adverse selection among the Medicare population generally.

The findings from the Medicare spending offset analysis suggest that the elimination of the LEP for beneficiaries exercising their option to enroll in Part D during their special enrollment periods resulted in a reduction in the use of hospital inpatient services, particularly among the beneficiaries who suffer from age-related chronic conditions. Demonstration LIS applicants experienced a decline in hospital admissions and a reduction in Medicare spending for hospital inpatient services after enrollment in Part D relative to the change over the same period among the nonenrolled transitional assistance recipient comparison group. When estimated over Medicare beneficiaries ages 65 and older, and thus more likely to suffer from the types of age-related chronic conditions that benefit from timely and consistent access to prescription

medications, the offset analysis revealed a statistically significant $204 (5.5 percent) relative reduction in average annual Medicare spending for Parts A and B services after enrollment in Part D. The potential savings from a reduction in medical spending among the elderly should help offset some of the costs of the LEP demonstration to the federal government. The estimated offset effect among beneficiaries who qualify for Medicare on the basis of disability was not statistically different from zero.

Net Cost of LEP Demonstration to Federal Government

Under section 402(a)(1)(A) of the Social Security Amendments of 1967, 42 U.S.C. § 1395b-1(a)(1)(A) (expressly made applicable to Part D in section 1860D-42(b) of the Social Security Act), the Secretary of the Department of Health and Human Services has authority to implement demonstration projects to determine whether "changes in methods of payment or reimbursement" under Medicare "would have the effect of increasing the efficiency and economy of health services" covered under Medicare through the "creation of additional incentives to these ends." However, determining the cost and efficiency gains associated with the LEP demonstration is particularly difficult. Between 2006 and 2008, CMS incurred an estimated $2.0 million in costs attributable to foregone LEP revenues from demonstration beneficiaries (that is, revenues that the agency would have collected if all LEP demonstration participants had been required to pay the penalty) (see Table ES.2).[4] During the same period, CMS incurred $306.9 million in benefit payments and administrative costs attributable to total Part D

[4] The average LEP monthly adjustment factor among demonstration LIS applicants was $2.87 (roughly 10 percent of the base premium amount), and the average total LEP payment amount per demonstration beneficiary was $32.92. The average LEP adjustment factor among demonstration Hurricane Katrina residents was $1.15; because they could be covered under the LEP demonstration authority in 2006 only, they had less time to accumulate uncovered months. The average total LEP payment amount per demonstration Hurricane Katrina resident was $27.11.

expenditures for demonstration participants, but realized an estimated savings of $37.3 million from a reduction in the use of Parts A and B services. Thus the LEP demonstration resulted in a total net cost to the federal government of $271.7 million between 2006 and 2008, equivalent to $1,298 per demonstration participant.

Table ES.2. Estimated Net Cost of LEP Demonstration for LIS Applicants and Hurricane Katrina Residents Using 100 Percent Inducement Rate, 2006–2008

Costs	Demonstration LIS Applicants	Demonstration Hurricane Katrina Residents	All Demonstration Beneficiaries
Total Costs (Dollars)			
Foregone LEP revenues	1,841,973	191,374	2,033,347
Administrative costs	55,259	5,741	61,000
Part D expenditures	305,890,940	995,531	306,886,471
Part A and B Savings (Dollars)	-35,678,054	-1,635,141	-37,313,195
Total Net Costs (Dollars)	272,110,118	-442,496	271,667,623

Source: Mathematica analysis of CME file, EBD, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and **SAF**, 2006–2008.

Note: Figures based on LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid benefits are excluded during year of dual eligibility. Foregone LEP revenues are based on 1 percent of premiums during uncovered months multiplied by number of months of enrollment. Administrative costs are assumed to be 3 percent of LEP payments over all demonstration participants. Part D expenditures are based on costs incurred by participants after demonstration-related enrollment. Savings are calculated over demonstration participants currently entitled to Medicare on the basis of age only.

All of the total net costs of the LEP demonstration are attributable to the LIS applicant population. The LEP program led to a net *reduction* in total costs among demonstration Hurricane Katrina residents of $442,496, largely because non-LIS-applicants who enrolled in Part D under the LEP demonstration in 2006 solely on the basis of their residency status were ineligible for federal Part D low-income subsidy payments below the catastrophic coverage threshold. Without the additional federal premium and cost-sharing subsidies, the reduction in

benefit payments for Parts A and B services outweighs the total costs of the demonstration for the non-LIS-applicant Hurricane Katrina population.

However, the costs and savings associated with the LEP demonstration do not account for the number of participants who would have accepted the penalty and enrolled in Part D in the absence of the program. Using the late enrollment rate among transitional drug assistance recipients (who were subject to the LEP) as the rate of late enrollment that would have occurred in the absence of the demonstration, we estimate that only 30 percent of the participants were induced to enroll in Part D because of the exemption; 70 percent of all participants would have enrolled in Part D late and paid the penalty. Thus, foregone LEP revenues should be calculated only over the 70 percent of participants who would have enrolled in Part D and accepted the penalty in the absence of the demonstration; net benefit payments should be calculated only over the 30 percent who were induced to enroll in Part D because of the penalty exemption.

Under the assumption that 70 percent of all demonstration participants would have enrolled in Part D in the absence of the program (that is, using an LEP inducement rate of 30 percent), the net cost of the LEP demonstration to the federal government between 2006 and 2008 was $82.8 million, equivalent to $396 per demonstration beneficiary (Table ES.3). Total net costs include $1.4 million in foregone LEP revenues among participants who would have enrolled in Part D and paid the fee without the exemption and $92.6 million in Part D benefit payments and administrative costs among beneficiaries who were induced to enroll because of the elimination of the penalty. Total federal expenditures were offset by an estimated $11.3 million reduction in Medicare expenditures for Parts A and B services among elderly nondisabled beneficiaries who were incentivized to enroll in Part D because of the elimination of the penalty.

Table ES.3. Estimated Net Cost of LEP Demonstration for LIS Applicants and Hurricane Katrina Residents using 30 and 12 Percent Inducement Rates, 2006–2008

Costs	Medicare Payments (Using a 30 Percent LEP Inducement Rate)	Medicare Payments (Using a 12 Percent LEP Inducement Rate)
Total Costs (Dollars)		
Foregone LEP revenues	1,419,886	1,789,345
Administrative costs	42,596	53,680
Part D expenditures	92,587,649	36,826,377
Part A and B Savings (Dollars)	-11,257,391	-4,477,583
Total Net Costs (Dollars)	82,792,740	34,191,819

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: Figures based on LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid benefits are excluded during year of dual eligibility. Foregone LEP revenues are based on 1 percent of premiums during uncovered months multiplied by number of months of demonstration-related enrollment. Administrative costs are assumed to be 3 percent of LEP payments over all demonstration participants. Part D expenditures are based on costs incurred by demonstration participants after demonstration enrollment. Savings are calculated over demonstration participants currently entitled to Medicare on the basis of age only. Foregone revenues and administrative costs are limited to beneficiaries likely to have enrolled in Part D in the absence of the demonstration, while benefit costs and savings are limited to those induced to enroll because of the elimination of the penalty.

However, an analysis of prescription drug event (PDE) data suggests that drug consumption levels might be too high to support the 30 percent induced enrollment rate assumption. The vast majority of LIS applicants have annual total drug costs above the threshold at which the financial benefits of enrollment outweigh the out-of-pocket costs of not enrolling.[5] Although the LEP increases the cost of enrolling in Part D, beneficiaries with the most generous LIPS amount would be better off by enrolling if they need to purchase drugs worth as little as $28.50 in a year. Beneficiaries with a coinsurance rate of 15 percent and a LIPS amount of 25 percent, on the

[5] The threshold amount is calculated using an annual premium of $300, an annual LEP of $34.50, and cash drug prices 25 percent above the Part D prices.

other hand, have an annual total drug cost threshold of $276.90, the highest among all applicants. The percentage of beneficiaries for whom Part D enrollment is financially beneficial, even with the LEP, varies between 10 and 20 percent, with a weighted average across all LIPS categories of 12 percent.

Table ES.3 also shows the net cost of the LEP demonstration to the federal government under the alternative assumption that 88 percent of demonstration beneficiaries would have enrolled in Part D in the absence of the LEP demonstration and only 12 percent were induced to enroll because of the elimination of the penalty. Using the lower inducement rate, the total cost of the LEP demonstration is $34.2 million (including $1.8 million in foregone LEP revenues and $36.9 million in Part D benefit payments and administrative costs). The lower inducement rate also results in a $4.5 million reduction in total benefit payments for Parts A and B services among beneficiaries entitled to Medicare on the basis of age only. Moreover, because of the lower inducement rate, the loss of LEP revenues outweighs net benefit payments for Hurricane Katrina participants and this population increases the overall cost of the demonstration. Thus, assuming only 12 percent of all late LIS applicants were incentivized to enroll in Part D because of the elimination of the penalty, the total net cost of the LEP demonstration to the federal government between 2006 and 2008 was $34.2 million, equivalent to $163 per demonstration beneficiary.

Conclusions

The main conclusions from our evaluation of the first three years of the LEP demonstration, as they pertain to the four research questions specified by CMS, can be summarized as follows:

- The LEP demonstration benefitted a small but significant number of low-income Medicare beneficiaries who might not have joined the federal prescription drug program if they had been required to pay a late enrollment penalty. Most participants remained continuously enrolled in Part D after benefitting from the demonstration.

- The vast majority of beneficiaries who benefitted from the LEP demonstration purchased at least one prescription medication, and most filled upwards of three dozen scripts by the third year of participation. During the first three years of the program, the federal government spent a total of $306.9 million for Part D services among all beneficiaries who participated in the LEP demonstration, representing $886 per participant-year observation and equivalent to 0.2 percent of total federal benefit payments for Part D services during this period.
- Federal savings from the program appear to be limited to beneficiaries who suffer from age-related chronic conditions that benefit from timely and consistent access to prescription medications. When estimated over beneficiaries who qualify for Medicare on the basis of age, the offset analysis indicates that the LEP demonstration led to a $204 (5.5 percent) reduction (savings) in average annual Medicare spending for medical services. The savings estimate for demonstration participants who are entitled to Medicare benefits on the basis of disability was not statistically different from zero.
- The overall net cost of the LEP demonstration to the federal government depends on the proportion of participants who would not have enrolled in Part D if they had been required to pay the penalty. If we assume that 30 percent of all beneficiaries who benefitted from the demonstration (upper bound) were induced to enroll because of the elimination of the penalty, total net costs during the first three years of the demonstration were $82.8 million ($1.4 million in foregone LEP revenues plus $92.6 million in Part D spending and administrative costs minus $11.3 million in medical savings). Under the assumption that only 12 percent of demonstration participants (lower bound) were induced to enroll, the total federal costs of the demonstration were $34.2 million ($1.8 million in foregone LEP revenues plus $36.9 million in Part D spending and administrative costs minus $4.5 million in medical savings). The lower the number of late enrollees who were induced to enroll in Part D because of the elimination of the penalty, the lower the net cost of the LEP demonstration to the federal government.

Study Limitations

Determining the overall net cost of the LEP demonstration to the federal government is difficult and our findings rest on several assumptions about what would have occurred in the absence of the demonstration. First, as noted, we assume that between 70 and 88 percent of all late enrollment would have occurred in the absence of the demonstration; that is, only between 12 and 30 percent of LIS applicants and Hurricane Katrina residents who enrolled at least 63 days after the end of their IEP were incentivized to sign up for the federal outpatient prescription drug benefit because of the elimination of the penalty. If, in the presence of a near-full drug

subsidy, a larger proportion of demonstration participants would have enrolled without the exemption, our calculation of foregone LEP revenues to the federal government will be too low and our estimate of net Medicare benefit payments attributable to the demonstration will be too high. Given the predominance of benefit payments for Part D services (relative to Parts A and B services) in the net cost calculation, a lower inducement rate reduces the total net cost of the LEP demonstration.

Second, we assume that medical spending over time among nonenrolled transitional assistance recipients who either do not apply or are not eligible for the LEP demonstration reflects the trend in medical spending among participants that would have occurred in the absence of the demonstration. However, nonenrolled transitional assistance recipients are older, sicker, and have higher baseline medical costs than demonstration participants in general. If, as a result of these differences, average annual spending for Parts A and B services among nonenrolled transitional assistance recipients increased at a faster rate than it would have increased among demonstration participants in the absence of the demonstration, our estimate of the impact of the LEP demonstration on Medicare Part A and B savings will be too high.

Finally, the report focuses the cost of the LEP demonstration to the federal government during the first three years of the program. The increased federal Part D cost-sharing and premium costs for demonstration participants will not be limited to this three-year period, but rather will be incurred during all years in which demonstration participants remain enrolled in the Part D program. Similarly, the full impact of outpatient prescription drug coverage on the lower use of inpatient and other medical services because of improved treatment and management of chronic conditions cannot be immediately observed; the reduction in inpatient costs associated with improved access to prescription medications will likely extend beyond

2008. If taken into account, these longer-run savings would decrease the estimated net cost of the LEP demonstration to the federal government.

I. INTRODUCTION

With the initiation of Medicare Part D prescription drug coverage in January 2006, the Centers for Medicare & Medicaid Services (CMS) established a late enrollment penalty (LEP) for Part D beneficiaries who postpone enrollment in the Part D program and who do not have other sources of creditable drug coverage (Sections 1860D-13(b) of the Social Security Act and 42 CFR 423.46 423.56(g)). The goal of the LEP is to encourage Medicare beneficiaries to enroll in the Part D program as soon as they become eligible for the benefit, or as soon as they are without creditable drug coverage. CMS also established a low-income subsidy (LIS) program to reduce or eliminate low-income enrollees' out-of-pocket expenses associated with the drug benefit, including subsidies on premiums, deductibles, copayments, and costs in the coverage gap (Section 1860D-14 of the Social Section Act, 42 CFR 423.780, 42 CFR 423.782, and KFF 2009).

Beneficiaries with limited incomes may be reluctant to enroll in a Part D plan until they know whether they are eligible for the extra help to pay for it through the LIS program. Similarly, after they find out that they qualify for the subsidies, the LEP for those whose initial enrollment period has ended may cause some beneficiaries to avoid seeking coverage, potentially limiting their access to needed medications. A recent fact sheet from the Kaiser Family Foundation (2009) reported that an estimated 2.3 million beneficiaries (19 percent) were eligible for but not receiving the LIS in 2009.[6] Because of the special challenges in getting non-dually eligible beneficiaries with limited financial means to sign up for the Medicare prescription drug benefit and the extra time it takes to determine if they are eligible for financial assistance, in June

[6] According to a 2007 survey, half of all beneficiaries potentially eligible for but not receiving the LIS (based only on the income criterion) were enrolled in a Part D plan and paying full premium and other cost-sharing requirements (Neuman et al. 2007).

2006 CMS used its demonstration authority to extend the open enrollment period for LIS applicant beneficiaries through December 2006 and eliminated the LEP for LIS beneficiaries who enrolled in Part D during this period.[7]

CMS also granted a special enrollment period (SEP) and eliminated the LEP for beneficiaries who were living in one of the counties or parishes affected by Hurricane Katrina at the time of the storm who enrolled in Part D at any time in 2006. Many people affected by Hurricane Katrina likely faced extreme financial hardship during the first year of Part D. Moreover, because of their displacement and lack of access to necessary records and documentation, CMS would have faced a significant administrative burden determining their eligibility for the LIS program. In addition, delays in eligibility determination could have reduced access to necessary medications for this population. To encourage beneficiaries adversely affected by the storm who had not yet signed up for drug coverage by the end of the IEP (or whose LIS eligibility documentation had not yet been processed) to enroll in Part D, CMS eliminated LEP fees incurred during the first year of the program for this population.

A. LEP Demonstration Evaluation

Under section 402(a)(1)(A) of the Social Security Amendments of 1967, 42 U.S.C. § 1395b-1(a)(1)(A) (expressly made applicable to Part D in section 1860D-42(b) of the Social Security Act), the Secretary of the Department of Health and Human Services has authority to implement demonstration projects to determine whether "changes in methods of payment or reimbursement" under Medicare "would have the effect of increasing the efficiency and

[7] The statutory language of the 2003 Medicare Prescription Drug, Improvement, and Modernization Act (MMA) prevented CMS from waiving the LEP administratively. To exempt low-income beneficiaries who sign up for Part D after the initial enrollment period from the LEP, CMS used its demonstration authority under Section 402(a)(1)(A) of the Social Security Amendments of 1967.

economy of health services" covered under Medicare through the "creation of additional incentives to these ends." However, assessing the efficiency gains from the LEP demonstration is difficult. The CMS Office of the Actuary estimated the cost of the LEP demonstration, in terms of foregone LEP revenues for beneficiaries who enrolled during the first SEP in 2006, to be less than $5 million over 10 years. However, these estimates do not make adjustments for potential savings from the lower use of Parts A and B services for beneficiaries enrolled in Part D. Research suggests that lack of access to outpatient drugs, particularly among beneficiaries suffering from chronic conditions that require the timely use of maintenance medications, can potentially increase their use of costly Medicare Parts A and B services, resulting in an increase in federal expenditures (Zhang et al. 2009; Gilman et al. 2007; Stuart et al. 2004; Yang and Norton 2006).

In 2007, CMS subcontracted with Mathematica Policy Research, through a contract with Acumen LLC, to evaluate the elimination of the LEP for LIS recipients and residents of Hurricane Katrina-affected counties and parishes. The purpose of the evaluation is to estimate the net impact of the LEP demonstration on total Medicare expenditures, including Part A, B, and D services, and to extend the actuaries' analysis by including any potential savings offset associated with the LEP demonstration. Specifically, CMS asked Mathematica to assess the extent to which the increase in Part D expenditures by beneficiaries who otherwise might not have signed up for the federal prescription drug benefit in the absence of the LEP demonstration is offset by a reduction in expenditures for other Medicare-covered Part A and B services.

CMS asked Mathematica to focus on four principle research questions:

1. How many beneficiaries benefitted from the LEP demonstration and what are their characteristics?
2. What was the impact of the LEP demonstration on the use and cost of Part D services?

3. Did the elimination of the LEP for beneficiaries exercising their option to enroll in a Part D plan during the SEP increase the efficiency and economy of Medicare through a reduction in Medicare Parts A and B spending?
4. What was the overall net cost of the LEP demonstration to the federal government?

This report presents the results of the three-year LEP demonstration evaluation. Chapter II provides a detailed description of the LEP demonstration, including eligibility requirements for participating in the program and the methodology used to determine the LEP adjustment amount. Chapter III summarizes the data used to conduct the evaluation, identifies the populations included in the study, and provides an overview of the methods used to answer the research questions. Chapter IV summarizes Part D enrollment trends under the LEP demonstration and the characteristics of the beneficiaries who benefitted from the program, including both LIS applicants and Hurricane Katrina residents, relative to their nondemonstration counterparts (research question 1). Chapter V presents information on the unadjusted use and cost of Part D services for LEP demonstration beneficiaries (research question 2). Chapter VI examines the impact of the LEP demonstration on the cost of Parts A and B services, including a description of our evaluation design and estimation strategy (research question 3). Chapter VII provides information on the net impact of the LEP demonstration on federal expenditures, taking into account foregone LEP revenues, Part D costs, medical spending offsets, and the cost of administering the demonstration (research question 4). Chapter VIII provides a brief summary and conclusion of the main findings.

II. BACKGROUND ON LEP DEMONSTRATION

In this chapter, we review the legislation governing the LEP demonstration. First, we review the federal regulations on the imposition of the LEP on Medicare beneficiaries who enroll in Part D late without having had continuous creditable coverage. Second, we discuss the LIS program and identify the LIS beneficiaries who would have been subject to the penalty in the absence of the demonstration. Third, we describe the evolution of the LEP demonstration for LIS applicants and Hurricane Katrina residents.

A. Part D Late Enrollment Penalty

Under Sections 1860D-13(b) of the Social Security Act, 42 CFR 423.46, and 42 CFR 423.56(g), Medicare beneficiaries may incur an LEP if there is a continuous period of 63 days or more at any time after the end of their Part D initial enrollment period (IEP) during which they were eligible to enroll, but were not enrolled in a Medicare Part D plan and were not covered under any other creditable prescription drug plan. The goal of the LEP is to discourage Medicare beneficiaries from postponing enrollment in Part D until they become ill and need prescription medications. The LEP thus reduces the risk of adverse selection and the associated average increase in prescription drug costs among those who enroll in the Part D program.

Prescription drug plan (PDP) sponsors, Medicare Advantage organizations, Section 1876 cost-based contractors, and PACE organizations offering prescription drug plans are responsible for determining, at the time of enrollment, whether a beneficiary was previously enrolled in Part D or had other creditable coverage prior to applying to enroll in their plan and whether there were any lapses in coverage of 63 days or more. Unless otherwise informed by CMS, a Part D plan sponsor is required to assume that the last day of a beneficiary's IEP is either (1) May 15, 2006, for a beneficiary who was eligible for Medicare Part D in January 2006, or (2) the last day of the third month following the month of initial eligibility for Medicare Part D for a beneficiary

who becomes eligible for Part D after January 2006.[8] "Creditable prescription drug coverage" is prescription drug coverage that is expected to pay at least as much as Medicare's standard prescription drug coverage (for example, an employer-sponsored plan or the Federal Employee Health Benefits Program).

Part D plan sponsors must inform CMS of these lapses in creditable coverage so that CMS can compute the LEP. The LEP adjustment amount is defined as an increase in an individual's monthly premium equal to one percent of the current year's national base beneficiary premium amount for each uncovered month during the plan year (42 CFR 423.286(i)). The period in question begins on the day following the end of the beneficiary's Part D IEP and ends on the day before the beneficiary's enrollment becomes effective with the Part D plan sponsor. The beneficiary is then billed the effective premium payment amount plus the LEP adjustment amount for as long as he or she remains enrolled in a Part D plan, or the LEP is included when the beneficiary's premium amount is deducted from his or her Social Security income check.[9]

B. Part D Low-Income Subsidy Program

The Medicare Part D LIS program provides additional financial support to encourage low-income Medicare beneficiaries to enroll in a Part D plan (Section 1860D-14 of the Social Section Act, 42 CFR 423.780, and 42 CFR 423.782). The Medicare Part D LIS population can be divided into two groups: (1) those who are deemed eligible and thus are not required to apply for

[8] As long as a beneficiary resides in a Part D plan service area, the month that he or she initially becomes eligible for Part D is generally the earlier of the first day of the month of entitlement to Medicare Part A and/or enrollment in Part B. If an individual is eligible for Medicare prior to turning 65 (for example, based on disability), he or she will be assigned a new IEP based upon turning 65.

[9] For example, if a beneficiary's IEP ended on May 15, 2006, and he or she enrolled in Part D without prior creditable coverage on January 1, 2007, the LEP adjustment amount would be the seven full uncovered months between the end of IEP and enrollment multiplied by the national base premium amount multiplied by one percent (7 x $27.93 x 1% = $1.96). If that individual remained enrolled in Part D through December 2008, the LEP adjustment amount would have been applied to the monthly premium in effect during the 24 months of coverage (24 x $1.96 = $47.04).

the subsidy and (2) those who are not deemed eligible and therefore must apply to be considered for the subsidy. These groups and the implications of their LIS status for the LEP demonstration are discussed below.

1. Deemed LIS Beneficiaries

The deemed group consists of full-benefit dual eligibles (that is, those receiving full Medicare and Medicaid benefits) and partial-benefit dual eligibles (that is, those in the Medicare Savings Program), as well as Supplemental Security Income (SSI) beneficiaries who are not eligible for Medicaid. Full-benefit dual eligibles who are not already enrolled in a Medicare managed care plan are automatically enrolled in a PDP from the first day of their Part D eligibility. Because full-benefit dual eligibles are deemed eligible and automatically enrolled in a plan from their first day of their Part D eligibility, they are precluded from ever enrolling after the end of their IEP and, therefore, will never be subject to an LEP. Full-benefit dual eligibles were not affected by the LEP demonstration and are not included in this evaluation.

Partial-benefit dual eligibles and non-dual SSI beneficiaries are not automatically enrolled from the first day of their Part D eligibility. Instead, their enrollment is facilitated by CMS if, two months after the end of their IEP, they have not elected a plan.[10] Partial-benefit dual eligibles can opt out of Part D because they have an alternative source of creditable coverage or if they take the proactive step of "affirmatively declining" facilitated enrollment.[11] If partial-benefit dual eligibles want to re-enroll in a plan and they have had a gap in creditable coverage of at least 63 days, they will be subject to an LEP. Similarly, if a beneficiary qualifies as a

[10] Beneficiaries can enroll a month earlier if they elect a plan or accept the facilitated plan assignment before the end of the two-month period.

[11] Unless a beneficiary "affirmatively declines" facilitated enrollment, CMS will automatically reassign a deemed beneficiary to a PDP if the individual disenrolls from Part D.

partial-benefit dual eligible after becoming entitled to Medicare Part A and/or Part B (called a "Medicare first, Medicaid second" beneficiary) and had a previous gap in prescription drug coverage of at least 63 days, he or she will be assessed an LEP at the time of facilitated plan enrollment. However, according to interviews with CMS staff, both of these cases are relatively rare. Most beneficiaries who qualify for Parts A and B cost sharing from Medicaid do so at the time they first become entitled to Medicare (called a "Medicaid first, Medicare second" beneficiary). Moreover, few partial-benefit dual eligibles without creditable coverage affirmatively decline facilitated enrollment because they automatically qualify for the full premium subsidy. Because they are deemed eligible and their enrollment in Part D is facilitated by CMS within the first two months of eligibility, partial-benefit dual eligibles are also unlikely ever to enroll after the end of their IEP. As a result, they should rarely be subject to an LEP and were not included in this evaluation.

2. Non-Deemed Applicant LIS Beneficiaries

The non-deemed applicant group consists of all other LIS beneficiaries with incomes below 150 percent of the federal poverty level and assets below $11,990 (for an individual in 2008) and $23,970 (for a married couple in 2008) (42 CFR 423.773). Unlike deemed beneficiaries, non-deemed beneficiaries must first apply to receive the LIS by submitting an application to the Social Security Administration (SSA) or their state Medicaid agency (42 CFR423.774).[12] Those who qualify for the subsidy are notified by SSA or the agency through which they applied. Part D LIS eligibility records are sent to CMS on a daily or weekly basis. When CMS receives a record of LIS eligibility, the same facilitated enrollment process used for partial-benefit dual

[12] Only one state (Kansas) temporarily participated in the LIS determination process. All other states relied on SSA to determine eligibility for the LIS. CMS officials noted that, although Kansas was alone in this respect, like every other state it had residents who applied via SSA as well.

eligibles and non-dual SSI beneficiaries occurs for the non-deemed applicant beneficiaries. When they are reported to CMS, non-deemed applicant beneficiaries who qualify for the subsidy are given a two-month SEP to enroll in a plan starting from the date of their identification of LIS eligibility determination by CMS. If, two months after being reported to CMS, the agency finds that the individual has not enrolled in a Part D plan, the person will be automatically enrolled in a plan.[13]

As noted, the period of uncovered months for applicant LIS beneficiaries starts the day after the last day of their IEP and ends the day before the date of their effective plan enrollment. Applicant LIS beneficiaries can be subject to an LEP if the period between the end of their IEP and effective plan enrollment exceeds 62 continuous days without creditable coverage. Beneficiaries without creditable coverage who apply for the LIS at least 63 days after the end of their IEP and wait to enroll until after their LIS eligibility has been determined would be subject to an LEP, in the absence of the demonstration. Depending on when a beneficiary applies for the LIS, eligibility for the subsidy may not be determined until after the IEP expires.[14]

To avoid having to pay an LEP, CMS encourages all beneficiaries to enroll in a Part D prescription drug plan during their IEP, even if LIS eligibility has not been determined. LIS eligibility is retroactive to the date of application, so an enrollee found eligible for the LIS will

[13] Automatic and facilitated enrollment occurs on a monthly basis during the SEP as beneficiaries are deemed eligible for Part D. Most non-LIS beneficiaries, however, are enrolled on an annual basis, starting on January 1 of each year. Non-LIS beneficiaries who were eligible for Part D on January 1, 2006, must enroll during one of the annual enrollment periods (AEPs) between November 15 and December 31 of each year, with an effective enrollment date of January 1 of the following year. Non-LIS beneficiaries who become eligible for Part D during the year (and those who lose creditable coverage) can enroll during their IEP and do not have to wait until the AEP.

[14] In the absence of the demonstration, CMS would have subsidized the LEP amount for LIS applicants using a linear sliding scale based on income. CMS would have subsidized 80 percent of the penalty for LIS applicants with a 100 percent premium subsidy, 60 percent for those with a 75 percent premium subsidy, 40 percent for those with a 50 percent premium subsidy, and 20 percent for those with a 25 percent premium subsidy. Non-LIS applicants covered under the Hurricane Katrina LEP demonstration authority only would have been required to pay the full LEP amount [72 FR 29402 423.780 (e)].

be reimbursed for qualified expenses dating back to the time of application. If low-income beneficiaries cannot afford the premium in the absence of the subsidy or do not need prescription medications during their IEP, they may decide to wait to enroll in a plan until after they have been determined eligible for the LIS. However, in the absence of the demonstration, they would be assessed an LEP for any uncovered months until they are effectively enrolled in a plan.

C. LEP Demonstration

Beneficiaries with limited incomes might be reluctant to enroll in a Part D plan until they know whether they are eligible for the extra help to pay for it. Also, after they find out that they qualify for the LIS, the LEP might cause some beneficiaries to avoid seeking coverage. Because of the potential deterrence created by the LEP, the special challenges getting people with limited means to sign up for the prescription drug benefit, and the extra time it takes to determine if they are eligible for financial assistance, CMS eliminated the LEP for all LIS non-deemed beneficiaries and those who were living in one of the counties or parishes affected by Hurricane Katrina at the time of the storm who enrolled in a Part D plan at any time during 2006.[15] Specifically, CMS announced on June 14, 2006, that it would not collect the LEP from beneficiaries who enrolled in a Medicare Part D plan during their SEP in 2006 and were either eligible for the LIS or lived in an area affected by Hurricane Katrina (CMS Public Affairs Office 2006).

In January 2007, CMS extended the LEP demonstration to include beneficiaries who were eligible for the LIS and enrolled in a Medicare Part D plan at any time during 2007 (CMS Center for Beneficiary Choice 2007). To continue encouraging the enrollment of non-deemed eligible

[15] The statutory language of the MMA prevented CMS from waiving the LEP administratively. To exempt low-income beneficiaries who signed up for Part D after the initial enrollment period from the LEP, CMS was required to use its demonstration authority under Section 402(a)(1)(A) of the Social Security Amendments of 1967.

low-income beneficiaries, CMS amended the payment demonstration again in 2007 to include LIS applicants subsequently determined to qualify for the LIS who enrolled in a Medicare Part D plan in 2008 (CMS Public Affairs Office 2007). Under the extended demonstration, LIS individuals would not be charged an LEP in 2006, 2007, 2008, or afterwards as long as they remained continuously enrolled in Medicare Part D. If an LIS applicant beneficiary disenrolled after 2008, and then had a continuous period of 63 days or more since the end of his or her IEP without creditable prescription drug coverage, the beneficiary would have incurred an LEP upon re-enrollment into a Medicare drug plan but the uncovered months in 2006, 2007, and 2008 would not have been included in the calculation of the beneficiary's LEP adjustment amount. However, with the passage of the Medicare Improvement for Patients and Providers Act of 2008, Congress made the LEP demonstration permanent. LIS applicants will not be subject to an LEP if they enroll after the end of their IEP. As long as these individuals stay continuously enrolled in a stand-alone or Medicare Advantage PDP, they will never be assessed an LEP even if they lose their LIS eligibility.[16]

Under the original LEP demonstration, Medicare beneficiaries who resided in any of the counties or parishes that the Federal Emergency Management Agency (FEMA) declared eligible for "individual assistance" as a result of Hurricane Katrina (August 2005) were allowed to enroll in a Medicare prescription drug plan with no penalty through December 31, 2006.[17] As long as these individuals stayed continuously enrolled in Part D, they would not be assessed an LEP in 2006 or afterwards. If these individuals disenrolled after 2006 and then had a continuous period

[16] If LIS individuals disenroll and do not have creditable coverage for a continuous period of 63 days or longer, they will incur an LEP upon re-enrollment into a Part D plan if they are not LIS eligible; however, their uncovered months prior to LIS eligibility will not be a factor in the calculation of their LEP.

[17] A list of the 91 designated counties and parishes in Louisiana, Mississippi, and Alabama eligible for individual assistance is available on the FEMA website at [http://www.fema.gov/news/disasters.fema?year=2005].

of 63 days or more without creditable prescription drug coverage, they would incur an LEP upon re-enrollment into a Medicare drug plan; however, their uncovered months in 2006 would not be included in the calculation of their LEP adjustment amount. Hurricane Katrina residents were not included when the LEP demonstration was extended in 2007; nor were they included when Congress made the LEP demonstration permanent.

III. DATA SOURCES, STUDY POPULATION, AND METHODS

In this chapter, we identify and discuss the data sources used to conduct the evaluation, define the study population, and summarize the methods developed to answer the research questions. We provide a more detailed description of the research design and statistical methods used to estimate the impact of the LEP demonstration on Medicare spending for medical services in Chapter VI.

A. Data Sources

We relied on five main sources of Medicare administrative data to evaluate the LEP demonstration.[18] First, we used the January 2010 partition of the Common Medicare Environment (CME) File (formerly known as the Medicare Beneficiary Database) to identify all LIS beneficiaries and obtain information on their deemed versus non-deemed status, premium subsidy level, Part D enrollment dates, and source and dates of creditable coverage.[19] Second, we used the Enrollment Database (EDB) to determine Part A entitlement and Part B enrollment dates, Part C enrollment dates, death date, and county of residence. Residency information was used to identify beneficiaries who became eligible for the LEP demonstration because they lived in a county affected by Hurricane Katrina.[20] We merged the two files to identify our study populations and determine if and when they would have become subject to the LEP in the absence of the demonstration. We also used the file to determine the amount of foregone LEP revenues.

[18] Acumen LLC extracted the data files for this evaluation and provided us with an enrollment database and a claims database for the study population.

[19] We flagged Medicare beneficiaries as having access to employer-sponsored drug coverage if their employer received the retiree drug subsidy.

[20] A list of the 91 designated counties and parishes in Louisiana, Mississippi, and Alabama eligible for individual assistance is available on the FEMA website at [http://www.fema.gov/news/disasters.fema?year=2005].

Third, we used a beneficiary- and year-level summary of the Standard Analytical Files (SAFs) for calendar years 2004 through 2008 to obtain information on the demographic and clinical characteristics of the study population and their use and cost of Medicare-covered medical services. The summary files contained summary use and cost information by type of service and payer. Our fourth source of data was a beneficiary- and year-level summary of the Prescription Drug Event (PDE) File between 2006 and 2008. We used the PDE file to obtain information on the number of PDEs and Medicare payments for Part D services, including premium subsidy amount, low-income copayment subsidy amount before reaching the catastrophic coverage threshold, and low-income copayment subsidy amount after catastrophic coverage. Fifth, we used the Medicare Hierarchical Condition Category (CMS-HCC) Summary File to obtain CMS-HCC risk scores for each beneficiary and year in our study.

In addition, we incorporated elements from administrative data files provided by the CMS project officer to determine if beneficiaries had access to other sources of creditable prescription drug coverage. We also received from the project officer a list of beneficiaries who received transitional assistance (TA) under the Medicare Prescription Drug Discount Card and Transitional Assistance Program in 2004 or 2005. As discussed in Chapter VI, we used TA recipients to identify a comparison group for estimating the impact of the LEP demonstration on Medicare expenditures for Parts A and B services. Finally, we downloaded information on national average base premium amounts and regional benchmark premium amounts from the CMS website, as well as information on counties or parishes affected by Hurricane Katrina from the FEMA website.

B. Study Population

The LEP demonstration evaluation is based on several distinct, but potentially overlapping, beneficiary subgroups. First, we identified all Medicare beneficiaries who applied and were

determined eligible for the LIS and subsequently enrolled in Part D between 2006 and 2008.[21] We then used their Part D eligibility and enrollment dates and dates of creditable coverage to identify those who enrolled in Part D within 63 days of the end of their IEP and those who enrolled "late" and would have been subject to the LEP in the absence of the demonstration.[22] We refer to these two groups as nondemonstration and demonstration LIS applicants, respectively.

Second, we identified all Medicare beneficiaries who were residing in one of the counties or parishes affected by Hurricane Katrina in August 2005. We used their Medicare eligibility and enrollment dates to identify those who enrolled in Part D in 2006 and, among those who enrolled, those who enrolled within 63 days of the end of their IEP versus those who enrolled at least 63 days after the end of the IEP without creditable coverage and, thus, would have been subject to the LEP in the absence of the demonstration. Beneficiaries in these two groups, referred to as nondemonstration and demonstration Hurricane Katrina residents, respectively, might also have qualified for the LIS.

Finally, for comparative purposes, we identified beneficiaries who received transitional assistance under the Medicare Prescription Drug Discount Card and Transitional Assistance Program in 2004 or 2005. Of particular relevance for the study were TA recipients who did not apply or, because of the stricter asset requirements, did not qualify for the LIS. We further divided non-LIS-eligible, non-Hurricane Katrina-demonstration TA recipients into those who enrolled in Part D in 2006 and those who never enrolled in Part D between 2006 and 2008.

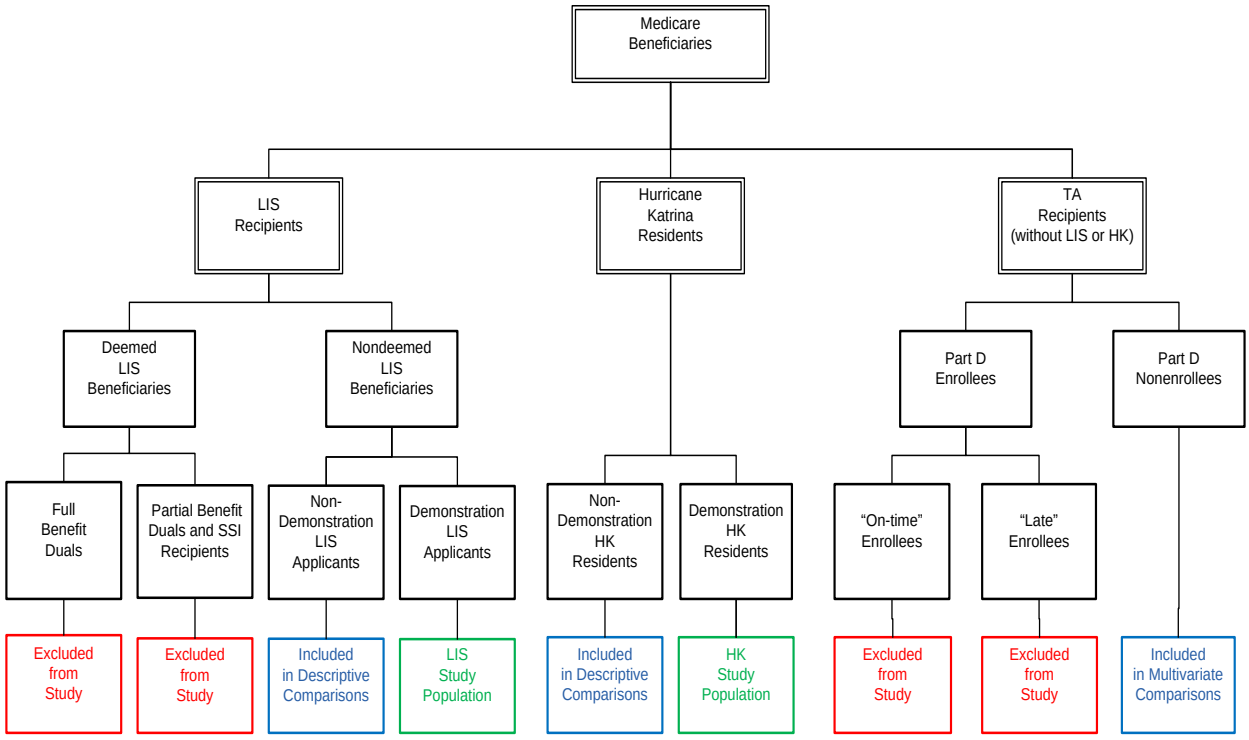
[21] Because deemed LIS beneficiaries can enroll in Part D at any time without incurring a penalty, we exclude LIS beneficiaries who were deemed eligible for the Part D subsidy, including those with automatic enrollment (full-benefit dual eligibles) and facilitated enrollment (partial-benefit dual eligibles and nondual SSI beneficiaries).

[22] We also checked for beneficiaries who had multiple late enrollment spells, who had late enrollment spells after initially enrolling and disenrolling in Part D, and who became eligible for LIS after having already been subject to an LEP.

Among the TA enrollees, we identified those who enrolled within 63 days of the end of their IEP and those who enrolled at least 63 days after the end of the IEP without creditable coverage.

Figure III.1 illustrates the beneficiary subgroups used to evaluate the LEP demonstration.

Figure III.1. Illustration of LEP Demonstration Evaluation Population



Notes: HK = Hurricane Katrina; LIS = low-income subsidy; TA = transitional assistance.

C. Methods

The study is based on descriptive and multivariate analyses of administrative data. First, we examine the number and proportion of LIS applicants who enrolled in Part D at least 63 days after the end of their IEP without creditable coverage and, thus, were enrolled in the benefit program under demonstration authority. Second, we examine the potential determinants of the timing of Part D enrollment by comparing baseline demographic and clinical characteristics between demonstration and nondemonstration beneficiaries. We also compare baseline service use and expenditures for Parts A, B, and D services. We annualize service use and expenditures

by dividing number of services used and spending amounts by the proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A, B, or D, depending on the type of service. To test for statistical significance between demonstration and nondemonstration groups, we use a two-tailed chi-square test for categorical variables and a two-tailed *t* test for continuous variables. Third, to evaluate the impact of the LEP demonstration on Part D service use and spending, we calculate unadjusted average number of PDEs, percentage of beneficiaries reaching catastrophic coverage threshold, and average and total Medicare expenditures for covered drugs among demonstration beneficiaries for each year of demonstration-related enrollment.

Fourth, we use a difference-in-difference (DD) multivariate regression model to estimate the impact of the LEP demonstration on Medicare spending for Parts A and B services. The DD model estimates the change in average annual Medicare spending among demonstration LIS applicants before versus after Part D enrollment relative to the change over the same period among a comparison group. The comparison group is based on a group of near-poor beneficiaries who received transitional assistance under the Medicare Prescription Drug Discount Card and Transitional Assistance Program but either did not apply or were ineligible for the LIS under Part D because they failed to meet the stricter asset requirement. We describe the evaluation design and statistical methods used to estimate the impact of the drug coverage on Medicare expenditures for Parts A and B services in Chapter VI.

Finally, we use the results from the descriptive and multivariate analyses to calculate the net costs of the LEP demonstration to the federal government, taking into account (1) the value of the foregone LEP fees that would otherwise have been paid to CMS in the absence of the demonstration; (2) Medicare subsidy payments for Part D services among demonstration beneficiaries, some of whom might not have enrolled in Part D without the demonstration;

(3) the administrative costs of the program; and (4) any reduction in medical spending resulting from demonstration enrollment in Part D and improved access to prescription medications. The sum of Part D spending among demonstration beneficiaries, foregone revenues from LEP fees, and administrative costs minus any estimated medical spending offsets represents the net cost of the demonstration to the federal government.

IV. ENROLLMENT AND CHARACTERISTICS OF LEP DEMONSTRATION BENEFICIARIES

In this chapter, we provide information to answer the first research question: How many beneficiaries benefitted from the LEP demonstration and what are their characteristics? We calculate the number of demonstration enrollees, in total and relative to nondemonstration beneficiaries, and examine the length of their enrollment spells. We also compare the demographic characteristics, clinical conditions, and service use and expenditure patterns between demonstration and nondemonstration LIS beneficiaries.

A. Part D Enrollment among LEP Demonstration Beneficiaries

As shown in Table IV.1, 203,865 LIS applicants enrolled in Part D under the LEP demonstration authority between 2006 and 2008, representing 8.3 percent of the nearly 2.5 million LIS applicants who enrolled in Part D during this period.[23] In addition, 7,058 Hurricane Katrina residents enrolled in Part D under the LEP demonstration authority in 2006, representing 2.5 percent of total enrollment among beneficiaries living in any of the counties or parishes affected by the storm. A total of 1,631 beneficiaries enrolled into Part D under both LIS and Hurricane Katrina demonstration categories in 2006.

[23] A recent fact sheet from the Kaiser Family Foundation (2009) reported that 1.5 million beneficiaries applied for and received the LIS and 0.5 million beneficiaries are estimated to be eligible for but not receiving the LIS because they have other sources of creditable coverage.

Table IV.1. Number and Percentage of LIS Applicants and Hurricane Katrina Residents Enrolled in Part D, by LEP Demonstration Status

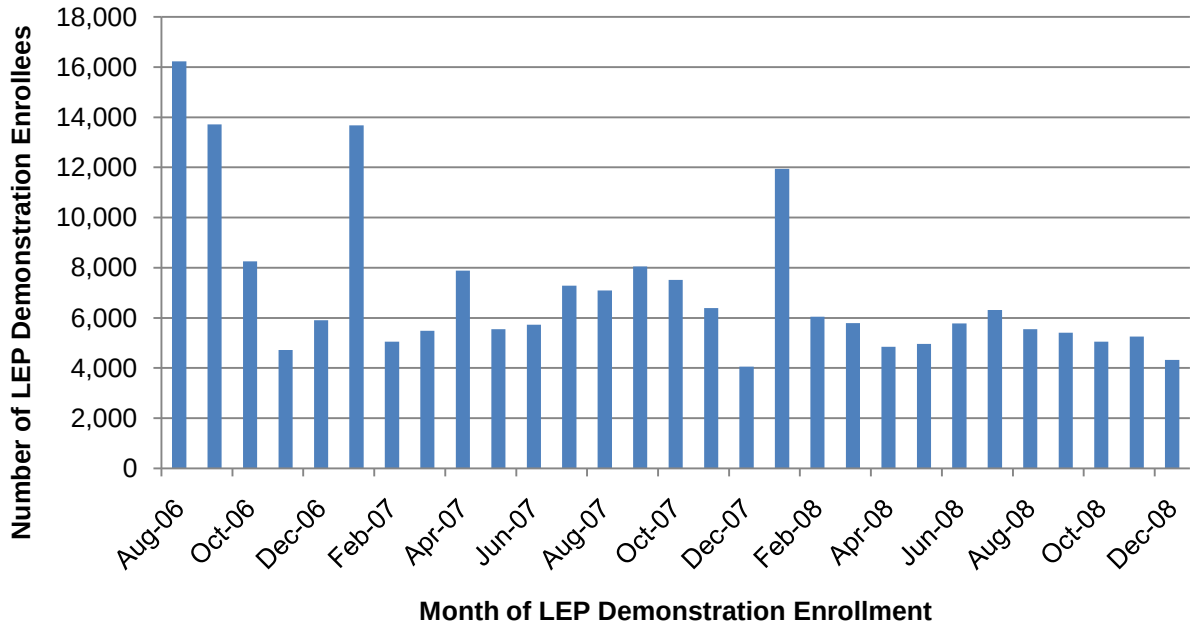
	LIS Applicants		Hurricane Katrina Residents	
Demonstration Status	Number	Percentage	Number	Percentage
Demonstration enrollees	203,865	8.32	7,058	2.52
Nondemonstration enrollees	2,246,613	91.68	272,535	97.48
Total	**2,450,478**	**100.0**	**279,593**	**100.0**

Source: Mathematica analysis of CME file, EDB, and CMS-provided administrative files, 2006-2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. A total of 1,631 beneficiaries enrolled in Part D under both LIS and Hurricane Katrina demonstration authority and are included in both categories.

Demonstration enrollment among LIS applicants continued throughout the 2006-2008 period, spiking in January of each year (see Figure IV.1). The highest monthly enrollment numbers among demonstration LIS applicants were in August and September 2006, the first months that beneficiaries would have been subject to an LEP (that is, at least two full months after the end of the initial IEP on May 15th). The initial spike likely reflects the large number of Medicare beneficiaries who were eligible for, but failed to enroll in, Part D during the IEP when the benefit was introduced in January 2006. The spikes in enrollment in January 2007 and 2008 may be due to LIS applicants signing up for Part D during the annual open enrollment period that occurs between November 15th and December 31st of each year.

Figure IV.1. Number of LEP Demonstration LIS Applicants, by Month of Demonstration-Related Enrollment in Part D

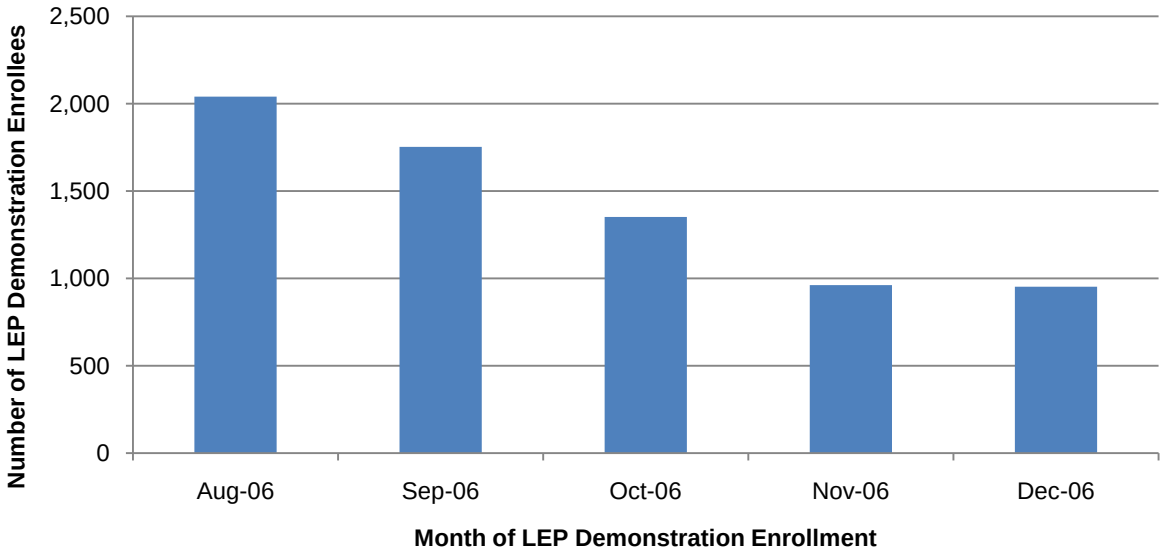


Source: Mathematica analysis of CME file, EDB, and CMS-provided administrative files, 2006-2008.

Note: Figures based on all LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008. Figures based on date of first demonstration-related enrollment in Part D. Beneficiaries who were covered under the LEP demonstration authority after they enrolled in Part D were assigned to the month they became covered under the demonstration.

Medicare beneficiaries residing in one of the counties or parishes affected by Hurricane Katrina when the storm hit were only eligible for demonstration enrollment in 2006. As Figure IV.2 shows, most demonstration Hurricane Katrina residents enrolled in Part D in August; demonstration-related enrollment dropped by half in November and December, after which non-LIS late enrollees in the affected area would have been subject to the fee. However, even though the number of new demonstration enrollees is likely to diminish (in the case of LIS applicants) or cease altogether (in the case of Hurricane Katrina residents), the foregone LEP fees that would otherwise have been paid to the federal government will continue for as long as beneficiaries who benefitted from the demonstration remain continuously enrolled in Part D or have an alternative source of creditable coverage.

Figure IV.2. Number of LEP Demonstration Hurricane Katrina Residents, by Month of Demonstration-Related Enrollment in Part D



Source: Mathematica analysis of CME file, EDB, and CMS-provided administrative files, 2006.

Note: Figures based on all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006.

We also examined gaps in Part D enrollment for both demonstration and nondemonstration enrollees to assess the impact of the program on continuity of coverage. As shown in Table IV.2, the vast majority of all demonstration participants (over 80 percent of demonstration LIS applicants and nearly 95 percent of demonstration Hurricane Katrina residents) had no gap in coverage during their enrollment spell. We defined a coverage gap as a break in enrollment of more than 30 days between initial enrollment and either the end of the enrollment spell or December 31, 2008, whichever occurred first. These enrollment figures suggest that beneficiaries who benefitted from the demonstration were slightly less likely to remain continuously covered under Part D than nondemonstration applicants and residents. The higher proportion of demonstration LIS applicants with a coverage gap of 30 days or more compared with their nondemonstration counterparts is due in part to the fact that some demonstration participants became covered under the LEP demonstration authority *after* they had already been enrolled in the program and thus had to have experienced a subsequent gap in enrollment.

Table IV.2. Percentage of LEP Demonstration and Nondemonstration LIS Applicants and Hurricane Katrina Residents Enrolled in Part D, by Number of Enrollment Episodes

	LIS Applicants (N = 2,450,478)		Hurricane Katrina Residents (N = 279,593)	
Number of Part D Episodes	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)
1 episode (no gap)	82.96	96.67	94.66	97.30
2 episodes (one 30+ day gap)	15.70	3.16	5.19	2.62
3+ episodes (two or more 30+ day gaps)	1.35	0.16	0.16	0.08

Source: Mathematica analysis of CME file, EDB, and CMS-provided administrative files 2006-2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. A total of 1,631 beneficiaries enrolled in Part D under both LIS and Hurricane Katrina demonstration authority and are included in both categories. One episode (no gap) indicates beneficiary enrolled once and coverage continued without an interruption of more than 30 days until the end of the enrollment spell or December 31, 2008, whichever occurred first. Multiple episodes indicate beneficiary had at least one break in coverage of more than 30 days and then reenrolled in Part D.

B. Baseline Characteristics of LEP Demonstration and Nondemonstration Beneficiaries

Next, to identify potential predictors of the timing of Part D enrollment, we compare demographic and clinical characteristics and service use and spending patterns between demonstration and nondemonstration enrollees. As the tables that follow show, beneficiaries who benefitted from the demonstration were more likely to be male and nonwhite and less likely to be enrolled in managed care than nondemonstration enrollees. Demonstration participants also appear to be in better health status and to have lower medical costs than those who enroll on time. These group differences hold true for both demonstration categories.[24]

[24] Because of the large sample size of this study, even small differences between demonstration and nondemonstration enrollees groups may reach statistical significance and should be interpreted with caution for evaluation purposes.

1. Demographic Characteristics

The level of Part D subsidy for LIS applicants (including premium, copayment, coinsurance, and annual deductible amounts) depends on beneficiaries' income and assets. In Table IV.3, we show the distribution of demonstration and nondemonstration LIS applicants across the four LIPS amounts (25 percent, 50 percent, 75 percent, and 100 percent). Eighty percent of both the demonstration and nondemonstration LIS applicant groups had incomes below 135 percent of the federal poverty level, and their premiums and annual deductibles were fully subsidized by the federal government. They also qualified for lower LICS amounts ($2.25 for generic drugs and $5.60 for brand-name drugs) and no copayments after total drug spending reached $5,726 (under the 2008 benefit). The remaining 20 percent of both LIS applicant groups were spread fairly evenly among the remaining subsidy level categories. These results show that few LIS applicants were required to contribute toward their Part D premiums. However, in the absence of the LEP demonstration, late LIS applicants could have incurred substantial penalties, depending on their number of uncovered months, for as long as they remained enrolled.

Table IV.3. Percentage of LEP Demonstration and Nondemonstration LIS Applicants, by Premium Subsidy Level

Premium Subsidy Level	Income as Percentage of FPL	Percentage of Demonstration LIS Applicants (N = 203,865)	Percentage of Nondemonstration LIS Applicants (N = 2,246,613)
25 percent	146–149 percent	6.50	5.92
50 percent	141–145 percent	6.91	6.47
75 percent	136–140 percent	7.06	7.03
100 percent	≤ 135 percent	79.52	80.58
Total		100.0	100.0

Source: Mathematica analysis of CME, EDB, and CMS provided administrative files, 2006-2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008. Premium subsidy level is based on beneficiary's initial LIS eligibility episode.

FPL = federal poverty level.

Table IV.4 provides information on the baseline demographic characteristics of demonstration and nondemonstration enrollees. Beneficiaries who benefitted from the demonstration were younger (less than age 75) and more likely to qualify for Medicare on the basis of disability than nondemonstration enrollees, particularly among the Hurricane Katrina population.[25] Demonstration enrollees were also more likely to be male, a member of a racial or ethnical minority group, and, in the case of LIS applicants, more likely to reside in an urban area than nondemonstration enrollees. In addition, both LIS and Hurricane Katrina demonstration participants were less likely to be enrolled in a Medicare managed care plan than nondemonstration enrollees. Since we excluded beneficiaries who were dually eligible for Medicaid benefits and deemed eligible for Part D, less than one percent of the study sample in any group was residing in a long-term care facility during the year in which they enrolled in Part D. There were fewer deaths among demonstration participants in the post-enrollment period than among their nondemonstration counterparts; this is particularly true for the LIS applicant population.

[25] A large proportion (40 percent) of both demonstration and nondemonstration LIS applicants are entitled to Medicare benefits on the basis of disability. This may be due to the fact that LIS applicants are required to apply for the subsidy through their state Medicaid office or SSA, agencies that are accustomed to working with the disabled population.

Table IV.4. Demographic Characteristics of LEP Demonstration and Nondemonstration LIS Applicants and Hurricane Katrina Residents Enrolled in Part D

	LIS Applicants (N = 2,450,478)			Hurricane Katrina Residents (N = 279,593)		
Demographic Characteristics (Percentage unless Noted Otherwise)	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	*p*-value	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)	*p*-value
Age			< 0.0001			< 0.0001
Under 65	39.39	39.18		22.13	13.77	
65-74	37.73	33.06		44.57	47.81	
75-84	16.79	20.46		23.90	29.82	
85 or older	6.08	7.29		9.39	8.60	
Mean age *(SD)*	64.02 *(14.36)*	65.62 *(14.18)*	< 0.0001	69.65 *(11.87)*	71.69 *(10.00)*	< 0.0001
Gender			< 0.0001			< 0.0001
Male	42.47	38.48		45.17	42.58	
Female	57.57	61.52		54.83	57.42	
Race			< 0.0001			< 0.0001
White	65.27	73.33		69.20	79.69	
Black	23.31	18.56		29.43	19.29	
Asian	2.49	1.95		0.16	0.17	
Hispanic	5.76	3.82		0.24	0.27	
North American Native	0.93	0.59		0.18	0.10	
Other	2.24	1.76		0.79	0.48	
MSA			< 0.0001			< 0.0004
Do not live in MSA	25.12	28.66		30.25	28.22	
Live in MSA	72.28	68.71		68.09	70.26	
Live outside of United States or unknown	2.60	2.64		1.66	1.53	

Table IV.4 *(continued)*

Demographic Characteristics (Percentage unless Noted Otherwise)	LIS Applicants (N = 2,450,478)			Hurricane Katrina Residents (N = 279,593)		
	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	*p*-value	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)	*p*-value
Medicare Entitlement Status			< 0.0001			< 0.0001
Aged without ESRD	61.16	65.74		78.10	86.67	
Aged with ESRD	0.40	0.45		0.33	0.49	
Disabled without ESRD	37.03	32.78		20.97	12.51	
Disabled with ESRD	1.29	0.95		0.55	0.30	
ESRD only	0.11	0.08		0.06	0.03	
Managed Care Enrollment Status			< 0.0001			< 0.0001
Managed care enrollee	18.97	22.93		32.29	36.92	
Non-managed care enrollee	81.03	77.07		67.71	64.08	
Institutionalized	0.33	0.76	< 0.0001	0.95	0.62	< 0.0006
Died	5.67	9.56	< 0.0001	10.88	11.69	< 0.0361

Source: Mathematica analysis of CME file, EDB, SAF, and CMS provided administrative files, 2004-2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. A total of 1,631 beneficiaries enrolled in Part D under both LIS and Hurricane Katrina demonstration authority, and are included in both categories. Age, gender, race, MSA, Medicare entitlement status, managed care enrollment status, and institutionalized status are based on initial year of Part D enrollment. Dual eligible status and death are based on data between 2006 and 2008. To test for statistical significance between demonstration and nondemonstration groups, 2-tailed chi-square test was used for categorical variables and *t* test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

MSA = metropolitan statistical area; ESRD = end-stage renal disease

2. Clinical Conditions

Next, we examine the baseline clinical characteristics among demonstration and nondemonstration enrollees. The clinical conditions are based on the Medicare Hierarchical Condition Categories (CMS-HCC) used by CMS to calculate risk-adjusted premiums for Medicare Advantage plans. The CMS-HCC risk score measures the impact of prior year's demographic characteristics and Parts A and B diagnoses on future health care expenditures and are used to set risk-adjusted payment rates for beneficiaries enrolled in a Medicare managed care plan. The CMS-HCC risk score is normalized to one by dividing each individual's score by the mean for all Medicare fee-for-service beneficiaries nationally. Higher risk scores indicate that beneficiaries are expected to incur higher medical costs in the future and hence to be in poorer health currently. A risk score above one means that the individual is sicker than the average fee-for-service beneficiary nationally. In addition, we compare the number and prevalence of selected clinical condition category groups (CCGs) between demonstration and nondemonstration populations. CCGs represent clinically related groups of diagnoses used to predict future expenditures under the HCC model.

Table IV.5 shows that beneficiaries who benefitted from the LEP demonstration have lower average risk scores than nondemonstration enrollees. In fact, the average risk scores for the two demonstration groups are lower than the national average, while the average risk scores for the nondemonstration groups are above the national average. These results indicate that demonstration participants are expected to have lower Medicare costs and are in better current health than their nondemonstration counterparts, as well as the average Medicare fee-for-service beneficiary nationally. Although the average CMS-HCC risk score for demonstration participants is lower than for nondemonstration enrollees, demonstration enrollees are more likely to have any clinical condition than nondemonstration enrollees. Demonstration Hurricane

Katrina residents have a higher rate of individual CCGs than nondemonstration residents, while the prevalence of individual clinical conditions is generally similar between demonstration and nondemonstration LIS applicants.

Table IV.5. Clinical Characteristics of LEP Demonstration and Nondemonstration LIS Applicants and Hurricane Katrina Residents Enrolled in Part D

Clinical Characteristics (Percentage Unless Noted Otherwise)	LIS Applicants (N = 2,450,478)			Hurricane Katrina Residents (N = 279,593)		
	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	*p*-value	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)	*p*-value
Mean CMS-HCC Risk Score *(SD)*	0.88 *(0.85)*	1.06 *(0.95)*	< 0.0001	0.92 *(0.91)*	1.05 *(0.98)*	< 0.0001
Any Condition	79.14	76.32	< 0.0001	89.76	72.56	< 0.0001
Mean Number of Conditions *(SD)*	5.76 *(4.65)*	5.88 *(4.88)*	< 0.0001	6.81 *(4.36)*	5.77 *(4.88)*	< 0.0001
Type of Condition						
Heart	54.35	54.84	< 0.0001	67.26	55.61	< 0.0001
Symptoms, signs, and ill-defined condition	54.78	53.81	< 0.0001	63.22	51.89	< 0.0001
Screening/History	50.09	51.94	< 0.0001	64.92	57.08	< 0.0001
Musculoskeletal and connective tissue	46.65	47.11	< 0.0001	54.02	44.70	< 0.0001
Nutritional and metabolic	45.47	46.35	< 0.0001	52.48	45.87	< 0.0001
Gastrointestinal	28.00	28.95	< 0.0001	31.68	27.01	< 0.0001
Lung	24.68	26.37	< 0.0001	27.49	22.47	< 0.0001
Eyes	22.60	25.88	< 0.0001	33.52	32.98	< 0.3401
Diabetes	22.50	23.78	< 0.0001	22.80	19.04	< 0.0001
Ears, nose, and throat	22.09	22.87	< 0.0001	28.00	24.93	< 0.0001
Injury, poisoning, complications	21.80	21.69	< 0.2332	24.48	19.70	< 0.0001
Urinary system	20.44	20.62	< 0.0656	23.87	20.64	< 0.0001
Mental	20.04	19.18	< 0.0001	15.74	11.10	< 0.0001
Skin and subcutaneous	18.88	19.99	< 0.0001	26.24	23.44	< 0.0001
Vascular	15.00	16.04	< 0.0001	19.06	15.36	< 0.0001
Hematological	15.21	15.24	< 0.7604	16.32	13.68	< 0.0001
Infection and parasitic	14.16	14.39	< 0.0049	13.77	11.20	< 0.0001
Neurological	13.64	13.72	< 0.3124	12.96	11.51	< 0.0002
Genital system	12.38	12.23	< 0.0586	17.84	15.74	< 0.0001
Substance abuse	10.90	8.34	< 0.0001	6.74	3.27	< 0.0001

Table IV.5 *(continued)*

Clinical Characteristics (Percentage Unless Noted Otherwise)	LIS Applicants (N = 2,450,478)			Hurricane Katrina Residents (N = 279,593)		
	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	*p*-value	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)	*p*-value
Malignant neoplasm	9.68	10.26	< 0.0001	14.21	12.26	< 0.0001
Cerebrovascular	8.60	9.55	< 0.0001	13.84	11.28	< 0.0001
Benign/in situ/uncertain neoplasm	8.21	9.37	< 0.0001	13.73	13.20	< 0.1983
Cognitive disorders	5.69	5.98	< 0.0001	8.27	6.17	< 0.0001
Liver	4.56	4.43	< 0.0060	4.38	3.28	< 0.0001
Cardio-Respiratory arrest	3.52	2.92	< 0.0001	2.59	2.17	< 0.0173
Transplants, openings, other v-codes	1.44	1.35	< 0.0010	1.66	1.05	< 0.0001
Developmental disability	0.67	0.67	< 0.8419	0.27	0.20	< 0.2388

Source: Mathematica analysis of CME file, EDB, SAF, and CMS provided administrative files, 2006-2008.

Note: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. A total of 1,631 beneficiaries enrolled in Part D under both LIS and Hurricane Katrina demonstration authority, and are included in both demonstration categories. Clinical conditions are based on data from initial year of Part D enrollment. To test for statistical significance between demonstration and nondemonstration groups, 2-tailed chi-square test was used for categorical variables and tailed t test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

HCC = Hierarchical Condition Category.

3. Parts A and B Service Use and Expenditures

Next, we compare Medicare Parts A and B service use and expenditure patterns between demonstration and nondemonstration enrollees. Parts A and B services are restricted to fee-for-service beneficiaries only because encounter data for Medicare managed care enrollees are not reported on the Medicare standard analytic files. Number of services and expenditures are based on first year of demonstration Part D enrollment and annualized to adjust for partial year enrollment in Parts A or B.

The figures presented in Table IV.6 indicate that demonstration participants were less likely to use any Medicare-covered medical services than nondemonstration enrollees. Eighty-three percent of demonstration LIS applicants (compared with 87 percent of nondemonstration LIS applicants) and 93 percent of demonstration Hurricane Katrina residents (compared with 96 percent of nondemonstration Hurricane Katrina residents) accessed Parts A or B services at least once during the first year of Part D enrollment. The lower overall service utilization rate among LEP demonstration enrollees stems mainly from the lower rate of use of Part B services (physician/supplier and durable medical equipment). The hospital inpatient service utilization rate was similar among demonstration and nondemonstration LIS applicants, but higher among demonstration Hurricane Katrina residents than among nondemonstration residents.

The figures in Table IV.6 also show the average number of services used among claimants only and total expenditures among all beneficiaries, in aggregate and by type of service. Expenditures include payments from Medicare, third-party insurers, and beneficiaries. Not only were demonstration LIS applicants less likely to access services than nondemonstration applicants, claimants who benefitted from the demonstration also used fewer services on average than nondemonstration claimants. This holds true for all service categories. As a result, demonstration LIS applicants had lower average annual medical expenditures than demonstration

enrollees, in total and for each type of service. Total average annual expenditures among demonstration LIS applicants were $8,911, compared with $9,786 among nondemonstration LIS applicants. Demonstration Hurricane Katrina claimants used more Part A services, but fewer Part B services, on average than nondemonstration claimants. They also incurred higher total medical costs. During their first year of Part D enrollment, demonstration Hurricane Katrina enrollees incurred $10,892 in average annual costs, compared with $9,402 among their nondemonstration counterparts. Demonstration residents had higher annual expenditures for all services except durable medical equipment.

Table IV.6. Medical Service Use and Expenditures Among LEP Demonstration and Nondemonstration LIS Applicants and Hurricane Katrina Residents Enrolled in Part D, Fee-For-Service Beneficiaries Only

	LIS Applicants (N = 1,896,651)			Hurricane Katrina Residents (N = 179,424)		
Parts A and B Service Use and Expenditures	Demonstration (N = 165,194)	Nondemonstration (N = 1,731,457)	*p*-value	Demonstration (N = 4,779)	Nondemonstration (N = 174,645)	*p*-value
Percentage of Beneficiaries Using Services:						
Any service	82.55	86.63	< 0.0001	92.59	95.69	< 0.0001
Inpatient	21.15	21.46	< 0.0030	25.40	22.99	< 0.0001
Skilled nursing facility	3.00	3.92	< 0.0001	3.52	3.02	< 0.0476
Hospital outpatient	62.79	68.16	< 0.0001	77.15	73.97	< 0.0001
Physician/supplier	72.53	77.51	< 0.0001	85.16	90.68	< 0.0001
Durable medical equipment	24.13	30.66	< 0.0001	29.99	34.58	< 0.0001
Home health	8.07	8.55	< 0.0001	12.32	11.37	< 0.0400
Hospice	0.91	1.17	< 0.0001	2.01	2.44	< 0.0550
Mean Annual Number of Services Among Users Only *(SD)*:						
Number of inpatient admissions	1.82 *(1.47)*	1.94 *(1.62)*	< 0.0001	1.83 *(1.34)*	1.72 *(1.24)*	< 0.0053
Number of skilled nursing facility-covered days	32.66 *(29.09)*	36.31 *(32.89)*	< 0.0001	41.25 *(36.74)*	30.55 *(28.90)*	< 0.0002
Number of outpatient hospital visits	5.66 *(6.42)*	6.48 *(7.17)*	< 0.0001	5.25 *(5.66)*	5.19 *(5.67)*	< 0.5612
Number of physician/supplier visits	7.47 *(6.98)*	8.30 *(8.17)*	< 0.0001	7.68 *(6.73)*	8.27 *(7.25)*	< 0.0001
Average Annual $ Expenditures Among All Beneficiaries *(SD)*						
All services	8,911 *(20,531)*	9,786 *(22,909)*	< 0.0001	10,892 *(23,879)*	9,402 *(18,085)*	< 0.0001
Inpatient	3,926 *(13,383)*	3,996 *(14,390)*	< 0.0566	4,594 *(16,808)*	3,560 *(10,948)*	< 0.0001
Skilled nursing facility	393 *(3,060)*	539 *(3,681)*	< 0.0001	515 *(3,665)*	335 *(2,726)*	< 0.0001
Hospital outpatient	1,523 *(5,256)*	1,709 *(8,229)*	< 0.0001	1,551 *(4,860)*	1,390 *(4,805)*	< 0.0239
Physician/Supplier	2,239 *(4,824)*	2,562 *(5,380)*	< 0.0001	2,806 *(5,394)*	2,773 *(5,445)*	< 0.6791
Durable medical equipment	337 *(1,675)*	443 *(2,526)*	< 0.0001	395 *(1,663)*	404 *(1,641)*	< 0.7045
Home health	398 *(2,053)*	418 *(2,050)*	< 0.0001	713 *(2,550)*	646 *(2,407)*	< 0.0571
Hospice	96 *(1,562)*	119 *(1,743)*	< 0.0001	318 *(2,984)*	292 *(2,777)*	< 0.5351

Table IV.6 *(continued)*

Source: Mathematica analysis of CME file, EDB, SAF, and CMS provided administrative files, 2006-2008.

Notes: Figures based on all FFS LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. Service use and expenditures are based on data from initial year of Part D enrollment. Figures exclude beneficiaries with any Medicare managed care enrollment during year initial year of Part D enrollment. We annualized service use and expenditures by dividing number of services used and spending amount by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A or B, depending on the service type. Expenditures include Medicare, beneficiary, and third-party payments. To test for statistical significance between demonstration and nondemonstration groups, 2-tailed chi-square test was used for categorical variables and *t* test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

FFS = fee-for-service.

4. Part D Service Use and Expenditures

Finally, Table IV.7 shows Part D service use and expenditures among demonstration and nondemonstration enrollees during their initial year of coverage. We annualized the figures to account for differences in length of Part D enrollment between demonstration and nondemonstration groups. Beneficiaries who benefitted from the demonstration were less likely to get a prescription filled and, among those who did, filled fewer prescriptions on average than nondemonstration enrollees. Seventy percent of demonstration LIS applicants and 75 percent of demonstration Hurricane Katrina residents had at least one PDE, compared with 85 percent and 91 percent among their nondemonstration counterparts, respectively. When measured over PDE claimants only, demonstration LIS applicants and Hurricane Katrina residents, respectively, filled approximately 36 and 38 prescriptions on average, compared with an average of 42 and 39 prescriptions among their nondemonstration counterparts. Demonstration participants also had lower Part D expenditures than their nondemonstration counterparts. Part D expenditures were 27 percent lower among demonstration LIS applicants than among nondemonstration applicants ($929 and $1,282, respectively). Demonstration Hurricane Katrina residents on average incurred $184 in annualized Medicare Part D costs, compared with $212 for nondemonstration Hurricane Katrina residents.

Table IV.7. Part D Service Use and Expenditures Among LEP Demonstration and Nondemonstration LIS Applicants and Hurricane Katrina Residents Enrolled in Part D

	LIS Applicants (N = 2,450,478)			Hurricane Katrina Residents (N = 279,593)		
Part D Service Use and Expenditures	Demonstration (N = 203,865)	Nondemonstration (N = 2,246,613)	*p*-value	Demonstration (N = 7,058)	Nondemonstration (N = 272,535)	*p*-value
Percentage of Beneficiaries with a PDE	70.40	84.90	< 0.0001	75.38	91.47	< 0.0001
Mean Number of PDEs Among Claimants *(SD)*	36.27 *(30.54)*	42.27 *(32.32)*	< 0.0001	37.66 *(30.41)*	38.72 *(78.70)*	< 0.0091
Mean Number Of PDEs Among All Beneficiaries *(SD)*	25.25 *(30.63)*	35.89 *(34.40)*	< 0.0001	28.38 *(31.63)*	35.42 *(29.64)*	< 0.0001
Average Medicare $ Payments *(SD)*	929 *(2,446)*	1,282 *(2,660)*	< 0.0001	184 *(1,142)*	212 *(1,237)*	< 0.0585

Source: Mathematica analysis of CME files, EDB, PDE file, and CMS provided administrative files, 2006-2008.

Notes: Figures based on all LIS applicants who enrolled in Part D between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D in 2006. Service use and expenditures are based on data from initial year of Part D enrollment. We annualized service use and expenditures by dividing number of PDEs and Medicare payments by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Part D. Medicare payments include premium, co-payment, and catastrophic subsidy amounts. To test for statistical significance between demonstration and nondemonstration groups, 2-tailed chi-square test was used for categorical variables and *t* test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

PDE = prescription drug event.

In conclusion, our analysis of Part D enrollment data shows that the LEP demonstration benefitted a relatively small but significant number of vulnerable Medicare beneficiaries who might not have joined the federal prescription drug program if they had been required to pay an LEP. This includes low-income minority populations, which historically have faced barriers to accessing medical care, as well as beneficiaries who were disadvantaged by Hurricane Katrina. While premiums for most of these beneficiaries would have been fully subsidized by the federal government, even a small monthly penalty can deter enrollment among low-income beneficiaries, particularly if the fee is applied to every month the individual is enrolled. The results also suggest that the LEP demonstration may have induced low-income beneficiaries to enroll in prescription drug coverage at a point in their lives when they were relatively healthy compared to the general Medicare population, as measured by their CMS-HCC risk score. Access to prescription medications before the onset of disease should help lower average Medicare drug costs among all enrollees and reduce the risk of worsening health status and higher Medicare spending for medical services in the future.

V. USE AND COST OF PART D SERVICES AMONG LEP DEMONSTRATION BENEFICIARIES

In this chapter, we address the second research question: What was the impact of the demonstration on the use and cost of Part D services? We provide a simple, unadjusted accounting of the use and federal cost of Part D services among LIS applicants and Hurricane Katrina residents who enrolled in Part D under the LEP demonstration. The figures are based on all LIS applicants who enrolled in Part D under demonstration authority between 2006 and 2008 and all beneficiaries residing in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under demonstration authority in 2006. Participants who later became dually eligible for Medicaid benefits are not included during year of dual eligibility. We only include the cost of prescription drugs purchased after an individual became covered under the LEP demonstration; expenditures incurred during an initial, nondemonstration episode of enrollment are excluded. We include all Part D expenditures incurred from initial demonstration-related enrollment through the end of 2008.[26] We include Part D spending for demonstration Hurricane Katrina residents through 2008 as well, even though the program lasted for only one year. To avoid double counting, expenditures incurred by LIS applicants who were residing in one of the counties or parishes affected by Hurricane Katrina in 2005 were attributed to the LIS demonstration. We used nonannualized dollars to measure actual total federal outlays for all demonstration beneficiaries.

[26] Demonstration participants are included in each year they are alive and remain enrolled in Part D. The numbers of beneficiaries reported in Tables V.1 and V.2 reflect cumulative enrollment.

A. Part D Service Use among LEP Demonstration Beneficiaries

Table V.1 shows Part D annual service use among demonstration LIS applicants and Hurricane Katrina residents between 2006 and 2008. Because demonstration-related enrollment only began in August 2006, Part D utilization rates remained relatively low during the first year of the LEP demonstration. By the second year of the demonstration, 76 percent of all demonstration LIS applicants and 90 percent of all demonstration Hurricane Katrina residents purchased covered prescription medications. Among users, demonstration LIS applicants purchased on average 28 prescriptions and Hurricane Katrina residents filled on average 36 prescriptions. Only 4.3 percent of the demonstration LIS applicants and 2.5 percent of the demonstration Hurricane Katrina residents reached the catastrophic coverage threshold during the second year of the program. By 2008, 78 percent of demonstration LIS applicants had at least one prescription drug event and, among users, purchased on average 34 covered prescription medications. Less than 7 percent of demonstration LIS applicants reached the catastrophic coverage threshold and qualified for the 100 percent subsidy on covered drugs. The rate and amount of Part D service among demonstration Hurricane Katrina residents remained roughly the same in 2007 and 2008.

Table V.1. Part D Service Use Among LEP Demonstration LIS Applicants and Hurricane Katrina Residents, 2006-2008

	LIS Applicants (N = 203,865)			Hurricane Katrina Residents (N = 5,427)		
Part D Service Use	2006 (N = 47,132)	2007 (N = 117,758)	2008 (N = 165,836)	2006 (N = 5,427)	2007 (N = 5,306)	2008 (N = 4,906)
Percentage of Beneficiaries with a PDE	62.48	75.74	78.39	77.61	89.69	88.90
Mean Number of PDEs Among Users only (SD)	11.88 (10.63)	27.99 (26.95)	33.76 (29.86)	11.52 (10.20)	35.98 (27.52)	37.21 (27.07)
Mean Number of PDEs Among All Beneficiaries (SD)	7.42 (10.18)	21.20 (26.12)	26.46 (29.87)	8.93 (10.19)	32.27 (28.27)	33.19 (28.06)
Percentage of Beneficiaries Reaching Catastrophic Coverage	0.52	4.35	6.65	0.11	2.47	2.18

Source: Mathematica analysis of CME files, EDB, PDE file and CMS provided administrative files 2006-2008.

Notes: Figures based on all LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid are excluded during year of dual eligibility. Figures reflect Medicare expenditures during year of demonstration-related Part D enrollment. For beneficiaries who enrolled in Part D before becoming covered by the demonstration, figures include only services used after beneficiary became covered under the LEP demonstration. To avoid double-counting, services used by beneficiaries who enrolled in Part D under both LIS and Hurricane Katrina demonstration authority were assigned to LIS. Standard deviations (SD) for continuous variables are presented in parentheses.

PDE = prescription drug event.

B. Federal Part D Expenditures Among LEP Demonstration Beneficiaries

Table V.2 shows mean annual Part D expenditures by year for demonstration LIS applicants and Hurricane Katrina residents, in total and for each type of subsidy. Premium amounts, which are not reported on claims, were calculated by multiplying the annual regional low-income benchmark premium amounts by the reported LIPS level for each individual. During the first full year of enrollment (2007), the federal government spent on average $855 in total Part D subsidies per demonstration LIS applicant. By 2008, average total subsidy payments per demonstration LIS applicant were $1,165. This included $239 (20 percent) in LIPS payments, $653 (55 percent) in LICS payments, and $302 (25 percent) in catastrophic coinsurance subsidies.[27] Non-LIS beneficiaries who enrolled in Part D under the Hurricane Katrina LEP exemption are not eligible for premium and cost-sharing subsidies below the catastrophic threshold. As a result, average total federal outlays for demonstration Hurricane Katrina residents were only $77 in 2007 and $119 in 2008; all of these subsidy payments were for catastrophic coverage.

We show aggregate annual Medicare payments between 2006 and 2008 for all beneficiaries who enrolled into Part D under the LEP demonstration in the bottom row of Table V.2. Medicare spent $11.9 million in 2006, $100.7 million in 2007, and $193.3 million in 2008 in total Part D subsidies for LIS applicants who signed up late and were not required to pay the late enrollment penalty. Total federal outlays for Part D services among all demonstration participants during the first three years of the demonstration were $306.9 million, equivalent to 0.2 percent of total federal benefit payments for Part D services among all enrollees during this

[27] The LIPS, LICS, and catastrophic subsidy amounts do not add up to total subsidy payments because of missing low-income premium benchmark data for beneficiaries who do not live in one of the Part D regions in the United States.

period.[28] In 2008, demonstration LIS applicants represented 0.8 percent of total Part D enrollment, but accounted for 0.4 percent of total Part D benefit payments during the year.

[28] Total benefit payments for Part D services were $47.1 billion in 2006, $48.8 billion in 2007, and $49.0 billion in 2008 (Table III.C19, Board of Trustees Report, 2009).

Table V.2. Medicare Part D Payments for LEP Demonstration LIS Applicants and Hurricane Katrina Residents, 2006-2008

	LIS Applicants (N = 203,865)			Hurricane Katrina Residents (N = 5,427)		
Medicare Part D Payments ($)	2006 (N = 47,132)	2007 (N = 117,758)	2008 (N = 165,836)	2006 (N = 5,427)	2007 (N = 5,306)	2008 (N = 4,906)
Average Medicare Payments:						
Average Total Subsidy Amount (SD)	252.86 *(598.86)*	855.14 *(2,076.94)*	1,165.45 *(2,906.41)*	0.62 *(24.84)*	76.72 *(962.18)*	119.26 *(2,022.90)*
Premium subsidy amount (LIPS) *(SD)*	77.35 *(56.26)*	228.45 *(124.37)*	239.07 *(117.03)*	0.00 *(0.00)*	0.00 *(0.00)*	0.00 *(0.00)*
Coinsurance subsidy amount (LICS) *(SD)*	161.49 *(361.09)*	491.01 *(911.44)*	653.44 *(1,125.06)*	0.00 *(0.00)*	0.00 *(0.00)*	0.00 *(0.00)*
Catastrophic subsidy amount *(SD)*	14.02 *(326.93)*	164.33 *(1,462.62)*	301.99 *(2,162.21)*	0.62 *(24.84)*	76.72 *(962.18)*	119.26 *(2,022.90)*
Total Medicare Payments	**11,917,798**	**100,699,576**	**193,273,566**	**3,365**	**407,076**	**585,090**

Source: Mathematica analysis of CME file, EDB, PDE file, and CMS provided administrative files 2006-2008.

Notes: Figures based on all LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid are excluded during year of dual eligibility. Figures reflect Medicare expenditures during year of demonstration-related Part D enrollment. For beneficiaries who enrolled in Part D before becoming covered under the demonstration, figures include only expenditures incurred after beneficiary became covered under the LEP demonstration. To avoid double-counting, expenditures incurred by beneficiaries who enrolled in Part D under both LIS and Hurricane Katrina demonstration authority were assigned to the LIS category. Premium subsidy amount was calculated by multiplying low-income benchmark premium amount for region of residence by beneficiary's reported LIPS level. Individual average subsidy amounts may not add up to total average amount due to missing premium data. Standard deviations (SD) for continuous variables are presented in parentheses.

LIPS = low-income premium subsidy; LICS = low-income cost share.

VI. IMPACT OF LEP DEMONSTRATION ON MEDICARE SPENDING FOR MEDICAL SERVICES

In this chapter, we address the third research question: Did the elimination of the LEP for beneficiaries exercising their option to enroll in a Part D plan during the SEP increase the efficiency and economy of Medicare through a reduction in Medicare Parts A and B spending? The purpose of the analysis is to assess whether the increased federal spending for prescription drugs by LIS applicants induced to enroll in Part D because of the LEP demonstration was offset by a reduction in the use and cost of medical services, such as hospitalizations that could have been prevented by improved access to prescription medications and better pharmaceutical management of chronic conditions. We assume that the average health status of late enrollees would have been the same in the absence of the demonstration, and adjust the total estimated offset amount for induced enrollment in Chapter VII.

A. Design of Offset Analysis

To estimate the effect of drug coverage on Medicare spending for medical services, we need to know what federal expenditures would have been for late enrollees if CMS had not implemented the LEP demonstration. Ideally, we would compare average spending among nondeemed, LIS-eligible beneficiaries randomly assigned into Part D with average spending among nondeemed, LIS-eligible beneficiaries randomly assigned to a nonenrolled group. Both groups would be drawn from LIS applicants who were eligible for Part D, but not enrolled in a prescription drug plan at least 63 days after the end of their IEP. The observed change in Medicare expenditures between the two groups after random assignment would provide the strongest estimate of the impact of drug coverage on spending among LIS applicants who signed up for drug coverage after the close of their IEP. However, random assignment into Part D

among nonenrolled LIS-eligible beneficiaries was not administratively or financially feasible for this evaluation.

As a second-best alternative, we take advantage of a natural experiment by comparing expenditures among nondeemed LIS-eligible beneficiaries who enrolled in Part D under the LEP demonstration authority to those of low-income beneficiaries who received transitional assistance under the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance Program, but because of the additional asset requirement under the LIS program, were ineligible to receive the Part D subsidy. To qualify for up to $600 per year in transitional assistance under the discount card program, a beneficiary needed to have income at or below 135 percent of the federal poverty level; the TA program did not have an asset requirement.[29] Transitional assistance was available from June 1, 2004, through December 31, 2005 (or until the end of the Part D open enrollment period on May 15, 2006). About 1.7 million non-dual beneficiaries received TA during this period, representing 44 percent of those in the drug discount card program (Government Accounting Office 2006).

A comparison group based on non-LIS-eligible TA recipients is not perfect for several reasons. First, the assets of beneficiaries in the comparison group will be higher than those of LIS applicants who were eligible for the LEP demonstration; their greater wealth may afforded them better access to health care services and, thus, better health status. Second, members of the near-poor comparison group face the difficult choice of whether to pay the full premium and enroll in Part D. TA recipients who elect to purchase Part D coverage without the subsidy, particularly those who enroll late and are required to pay the LEP, are likely to use more prescription medications and to be in poorer health than LIS applicants who can take up

[29] As previously reported, the majority (80 percent) of all demonstration LIS applicants between 2006 and 2008 had incomes below 135 percent of the federal poverty level.

Medicare drug coverage with zero or minimal out-of-pocket costs. If poorer baseline health status causes health care spending among TA recipients to increase at a faster rate than it does among demonstration LIS applicants, the spending offset attributed to the demonstration may be overestimated.

Third, the TA and LIS programs were administered differently and may not have reached the same low-income populations. The Medicare Prescription Drug Discount Card and Transitional Assistance Program was administered by CMS and marketed directly to all Medicare beneficiaries through private drug discount card sponsoring organizations (such as insurance companies, managed care organizations, and pharmaceutical companies) in advance of the implementation of Part D. Eligibility for the LIS program is determined by state Medicaid agencies or SSA, agencies that are accustomed to working specifically with nonaged beneficiaries who qualify for public assistance on the basis of a disability. Because of the ways in which the two programs were administered and marketed, TA recipients may be older and more likely to suffer from age-related chronic conditions than LIS applicants. As a result, average Medicare spending may increase at a faster rate among TA recipients compared with LIS applicants, independent of drug coverage, and thus further bias the offset effect upward.

Despite the limitations of using this natural experiment to estimate the offset effect of the LEP demonstration, near-poor recipients of transitional assistance constitute the best comparison group of low-income, nondeemed, and non-LIS-applicant beneficiaries that can be constructed using administrative data. In our modeling strategy, we attempt to control for observable and unobservable differences in health status between the two groups.

B. Estimation Strategy

To measure the impact of the LEP demonstration on Medicare spending for Parts A and B services, we estimate the change in annual Medicare spending for Parts A and B services among

LEP demonstration participants before versus after Part D enrollment relative to the change over the same period among near-poor beneficiaries who received transitional assistance under the drug discount card program but either did not apply or were ineligible for the drug subsidy under Part D. The change in Medicare expenditures among the comparison group after the implementation of Part D measures the impact of external factors unrelated to the demonstration. The change in spending among demonstration LIS applicants after enrollment in Part D reflects both demonstration- and nondemonstration-related factors. The difference in the change in Medicare spending between the demonstration and comparison groups reflects the impact of the LEP demonstration.

The difference-in-difference (DD) model can be expressed in the following manner:

$$Y_{it} = \alpha_i + T_t\beta_1 + X_{it}\beta_2 + D_i\beta_3 + \left(D_i \times T_t\right)\beta_4 + \varepsilon_{it} \qquad \text{Equation (1)}$$

where

Y_{it} = annualized Medicare expenditures for Parts A and B services for beneficiary *i* in year *t*;

α_i = the intercept term;

T_t = a set of year-level dummy variables;

X_{it} = a set of beneficiary-level demographic and health status characteristics;

D_i = a demonstration dummy that takes the value of one for all LEP demonstration participants and zero otherwise; and

ε_{it} = a random error term.

To account for the non-independence of observations in successive years for the same beneficiary, we estimate Equation (1) as a beneficiary-level fixed effects model.

The model regresses annualized total Medicare expenditures for Parts A and B services on a set of year-level dummy variables that take the value of one for each year of the study; a set of time variant beneficiary-level demographic and health status characteristics; and a set of interaction terms that interact a time invariant demonstration dummy (that takes the value of one for all beneficiaries who benefitted from the LEP demonstration and zero for all TA comparison group members) with the set of year dummies, one for each year of demonstration enrollment. The parameter β_1 measures external changes in Medicare spending over time common to both demonstration and TA beneficiaries. The parameter β_2 measures the effect of demographic and health characteristics that change over time. The parameter β_3 measures other unobserved differences between the LEP demonstration and comparison groups that are invariant to time. The parameter β_4 captures the change in expenditures after enrollment in Part D among LEP demonstration participants relative to the change over the same period among the comparison group members. This DD parameter measures the impact of the demonstration on the federal cost of Medicare-covered medical services for each year of Part D enrollment.[30]

The validity of the offset estimator β_4 rests on the assumption that, conditional on the demographic and health status characteristics controlled for in the set of variables *X* (as well as unobservable time invariant factors controlled for by the beneficiary-level fixed effects), the expected change in Parts A and B spending would have been the same for both demonstration participants and TA recipients in the absence of the demonstration. A negative coefficient on the interaction term indicates that prescription medication and medical services in total are

[30] Because of the fixed-effects specification, explanatory variables (such as age, gender, and race) that do not vary across time for each unit of observation will be perfectly collinear with the beneficiary-level intercept term, and so we cannot include them in the model. Normally, a DD model would also include a time-invariant dummy term for LEP demonstration enrollment, but this term is also absorbed by the fixed-effects specification.

substitutes, and that demonstration-related enrollment in Part D had an offsetting effect on Medicare spending for Parts A and B services. A positive coefficient on the DD estimator indicates that prescription drugs and medical services are complementary, in aggregate, and that demonstration-related enrollment in Part D led to higher Medicare spending for Parts A and B services.

We estimate the model using generalized least squares (GLS) regression. Because the vast majority of demonstration participants have positive total Medicare expenditures (over 85 percent) and the validity of two-part expenditure models relies on a more restrictive set of assumptions, we believe that GLS regression provides a reasonable estimate of the impact of the LEP demonstration on total Medicare spending. We annualized Medicare spending by dividing annual reported federal expenditures by the proportion of months in a calendar year that the beneficiary was alive and enrolled in either Parts A or B, depending on the type of service. The annualization of Medicare payments controls for the possible endogenous effect of death on expenditures. If prescription drugs help maintain health and prolong life, annual expenditures will increase and Part D coverage will appear to increase medical spending. Annualizing expenditures controls for this endogenous effect. Annualization of expenditures also helps control for differences in length of Parts A and B eligibility within a given year.

The marginal effect of prescription drug coverage relative to the use and cost of medical services will also vary according to how long an individual is enrolled in Part D. To adjust for differences in length of Part D enrollment, we use a set of enrollment- and year-level interaction terms, one for each year of coverage (up to a maximum of three years). Because demonstration enrollees could only have a maximum of five covered months in 2006 (August through December), we do not include the first-year spending differential in our total estimated offset effect. To capture the potential spike in end-of-life expenditures independent of drug coverage,

we include an individual-level dummy variable set equal to one if the year includes any part of the last six months of an individual's life, and otherwise equal to zero.

We estimate the model on sampled beneficiaries enrolled in the Medicare fee-for-service program only; encounter data for beneficiaries enrolled in a Medicare managed care plan are not reported on the Medicare claims files. Because the LEP demonstration population was, by definition, alive on August 1, 2006 (the first day an LIS applicant could have been covered under the LEP demonstration), we restrict the TA comparison group to beneficiaries who were alive as of that date as well. The DD model also requires the definition of pre and post periods common to both treatment and comparison groups. We use the implementation of Part D as the beginning of our post period, and define 2004 and 2005 as the pre period and 2006, 2007, and 2008 as the post period, for both LEP demonstration participants and TA recipients.

We restrict the LEP demonstration group to beneficiaries who enrolled in Part D under demonstration authority in 2006. We restrict the TA comparison group to non-LIS-eligible and non-Hurricane Katrina demonstration beneficiaries who did not enroll in Part D between 2006 and 2008, and did not have any other source of creditable coverage. A comparison group of near-poor nonenrolled beneficiaries represents the counterfactual under the assumption that none of the late LIS applicants would have enrolled in Part D in the absence of the demonstration. (We apply the estimated offset effect to demonstration-induced enrollees only to calculate the total savings of the demonstration in Chapter VII.) Finally, to better match our treatment and comparison groups, we restrict the LIS applicant sample to those who received the full premium subsidy (thus, both groups were required to have incomes below 135 percent of the federal poverty level) and those who were residing in the community. We also exclude beneficiaries who were dually eligible for Medicaid at any time in 2006; but, because medical spend-down to

Medicaid eligibility is endogenous our model, we include those who become dual eligibles during 2007 or 2008.

C. Baseline Characteristics of LEP Demonstration and Comparison Groups

Table VI.1 compares the baseline characteristics of demonstration LIS applicants and TA recipients included in our offset analysis. The treatment group includes 32,068 fee-for-service, non-institutionalized, full-premium subsidy LIS applicants who enrolled in Part D under demonstration authority in 2006. The comparison group includes 40,807 nonenrolled TA recipients who were not eligible for the low-income subsidy and did not have creditable coverage. Nearly one quarter (23 percent) of the demonstration LIS applicants in the model sample participated in the drug discount card program and received transitional assistance from the federal government in purchasing their prescription medications in advance of the implementation of Part D.

Despite the similarities in income between the two groups, the characteristics of the LIS and TA samples differ in ways that are likely to affect their medical use and spending patterns independent of prescription drug coverage. The sampled demonstration LIS applicant group is younger (38 percent are less than 65 years old compared with only 13 percent of the TA recipient group) and have a higher percentage of male and minority beneficiaries and individuals living in urban areas. The LIS applicant group also has a significantly higher proportion of individuals who are currently entitled to Medicare benefits on the basis of disability (37 percent of the LIS applicant sample compared with 13 percent of the TA recipient sample). In addition, the death rate among the demonstration LIS applicant group is half the rate of death among the TA comparison group; only 9 percent of the LIS sample died between August 2006 and December 2008, compared with 18 percent of the TA sample.

Table VI.1. Baseline Demographic Characteristics of LEP Demonstration LIS Applicants and Comparison Group of Transitional Assistance Program Participants

Demographic Characteristics (Percentage Unless Noted Otherwise)	Demonstration LIS Applicants (N = 32,068)	Transitional Assistance Program Participants (N = 40,807)	*p*-value
Age			< 0.0001
Under 65	37.62	13.28	
65 to 74	34.34	30.69	
75 to 84	19.80	34.32	
85 or older	8.24	21.70	
Mean Age *(SD)*	65.15 *(15.07)*	74.84 *(12.61)*	< 0.0001
Gender			< 0.0001
Male	42.34	30.81	
Female	57.66	69.19	
Race			< 0.0001
White	66.57	84.60	
Black	21.34	9.00	
Asian	2.12	1.46	
Hispanic	6.31	1.79	
North American Native	1.32	1.74	
Other	2.19	1.21	
Unknown	0.14	0.21	
MSA			< 0.0001
Do not live in MSA	28.27	33.95	
Live in MSA	69.41	63.30	
Live outside of United States or residence unknown	2.32	2.74	
Medicare Entitlement Status			< 0.0001
Aged without ESRD	62.43	86.86	
Aged with ESRD	0.29	0.35	
Disabled without ESRD	36.21	12.43	
Disabled with ESRD	0.96	0.27	
ESRD only	0.11	0.09	
Death	8.80	18.32	$p < 0.0001$
Transitional Assistance Program Enrollment	23.16	100.00	$p < 0.0001$

Source: Mathematica analysis of CME files, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2004–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. Age, gender, race, MSA, Medicare entitlement status, and Part D coverage are based on data from 2006. Dual eligibility status, death, and Part D coverage are based on data between 2006 and 2008. Transitional Assistance Program enrollment is based on data from 2005. To test for statistical significance between LIS demonstration applicants and TA comparison group, 2-tailed chi-square test was used for categorical variables and t test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

ESRD = end-stage renal disease; MSA = Metropolitan Statistical Area.

We compare the baseline health characteristics of the sampled demonstration LIS applicants and TA recipients in Table VI.2. The demonstration LIS applicant group had a lower mean CMS-HCC risk score and fewer individual condition categories than the TA comparison group. In fact, the mean baseline risk score for the demonstration LIS applicant group (0.84) was below the average for all fee-for-service beneficiaries nationally, while the mean risk score for the comparison group (1.03) was above the national average. The sampled LIS applicants had fewer clinical conditions, on average, and lower rates of most clinical conditions, with the exceptions of diabetes, mental health, substance abuse, and developmental disability. The higher rates of these disorders among the LIS sample are likely associated with the group's higher proportion of disabled beneficiaries.

Table VI.2. Baseline Clinical Characteristics of LEP Demonstration LIS Applicants and Comparison Group of Transitional Assistance Program Participants

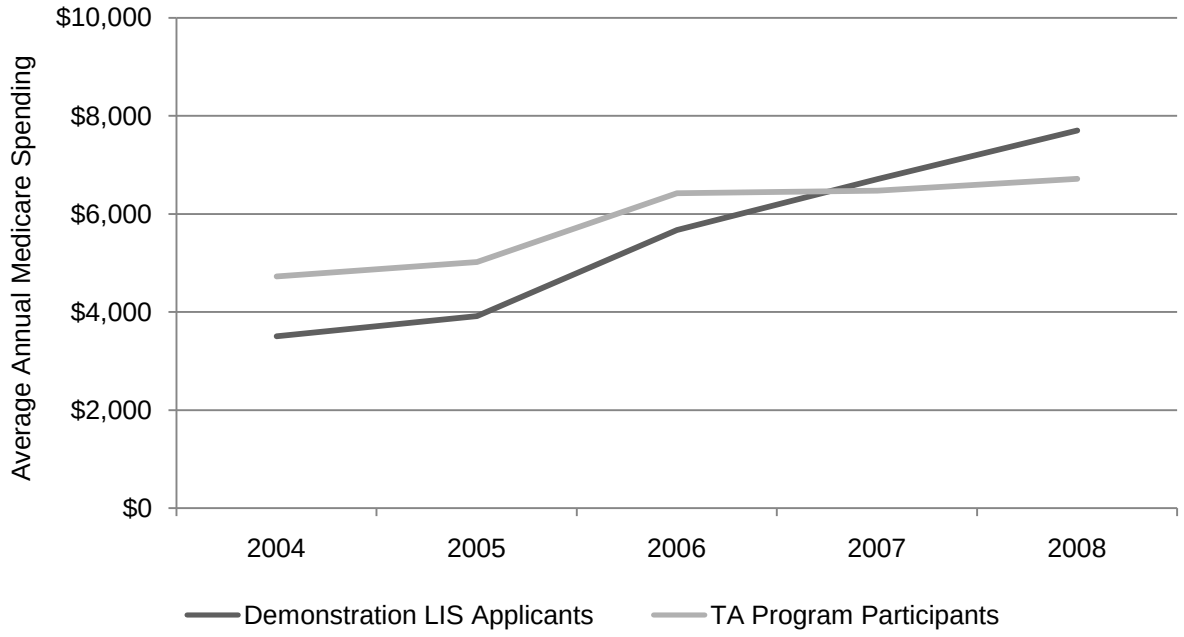
Clinical Characteristics (Percentage Unless Noted Otherwise)	Demonstration LIS Applicants (N = 32,068)	Transitional Assistance Program Participants (N = 40,807)	*p*-value
Mean CMS-HCC risk score *(SD)*	0.84 *(0.83)*	1.03 *(0.94)*	< 0.0001
Any clinical condition	82.68	87.46	< 0.0001
Number of clinical conditions *(SD)*	5.90 *(4.49)*	6.47 *(4.44)*	< 0.0001
Type of Clinical Condition			
Heart	57.07	63.72	< 0.0001
Symptoms, signs, and ill-defined condition	56.33	60.06	< 0.0001
Screening/history	52.54	61.00	< 0.0001
Musculoskeletal and connective tissue	48.82	52.76	< 0.0001
Nutritional and metabolic	46.31	50.77	< 0.0001
Gastrointestinal	28.39	29.66	< 0.0002
Eyes	25.53	37.10	< 0.0001
Lung	25.75	26.85	< 0.0008
Diabetes	21.98	17.51	< 0.0004
Ears, nose, and throat	23.08	24.80	< 0.0001
Injury, poisoning, complications	22.55	24.46	< 0.0001
Urinary system	20.01	23.18	< 0.0001
Skin and subcutaneous	20.21	26.25	< 0.0001
Mental	18.75	13.35	< 0.0001
Vascular	15.76	18.55	< 0.0001
Hematological	15.15	17.78	< 0.0001
Infection and parasitic	14.75	16.16	< 0.0001
Neurological	12.65	11.24	< 0.0001
Genital system	11.90	12.57	< 0.0060
Malignant neoplasm	9.99	13.05	< 0.0001
Cerebrovascular	9.36	11.44	< 0.0001
Benign/in situ/uncertain neoplasm	9.10	13.41	< 0.0001
Substance abuse	9.32	4.27	< 0.0001
Cognitive disorders	5.71	8.18	< 0.0001
Liver	4.49	3.86	< 0.0001
Cardio-Respiratory arrest	2.63	3.31	< 0.0001
Transplants, openings, other v-codes	1.28	1.24	< 0.6164
Developmental disability	0.78	0.33	< 0.0001

Source: Mathematica analysis of CME files, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. Clinical conditions are based on data from 2006. To test for statistical significance between LIS demonstration applicants and TA comparison group, 2-tailed chi-square test was used for categorical variables and t test was used for continuous variables. Standard deviations (SD) for continuous variables are presented in parentheses.

The higher prevalence of clinical conditions among the TA comparison group is exhibited in their higher medical expenditures during the pre-demonstration period. Figure VI.1 shows unadjusted nominal mean annualized Medicare expenditures for Part A and B services by year for the LIS and TA samples. Medicare spending for the TA comparison group was roughly $1,500 higher on average than Medicare expenditures for the demonstration LIS applicant group in both 2004 and 2005, before the implementation of Part D. Nominal spending increased sharply for both groups in 2006, but the relative jump in expenditures was higher among LIS applicants (a 45 percent increase among demonstration LIS applicants compared with a 24 percent increase among the nonenrolled TA comparison group). After 2006, nominal spending among the comparison group leveled off, while mean Part A and B expenditures for the demonstration LIS group continued to rise at a steady rate, surpassing average expenditures for TA recipients in both 2007 and 2008. The purpose of the offset analysis is to determine whether the relative increase in spending among demonstration LIS applicants after enrollment in Part D would have been even greater in the absence of the demonstration.

Figure VI.1. Average Annual Medicare Spending for Parts A and B Services for LEP Demonstration LIS Applicants and Transitional Assistance Comparison Group, 2004–2008



Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: Demonstration LIS applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. TA comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. We annualized service expenditures by dividing spending amount by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A or B, depending on the service type. Expenditures are based on Medicare payments only.

D. Results of Offset Analysis

Table VI.3 shows the coefficients and standard errors from the DD model estimated over total Medicare expenditures for medical services. The results reveal a near-steady increase in federal spending for Part A and B services over time (relative to 2004), a large increase in spending associated with death and end-stage renal disease (ESRD), and higher spending for

most clinical condition categories existing during the study period.[31] The DD estimators are presented in the bottom three rows of the table. The multivariate results fail to show a statistically significant spending offset attributable to the LEP demonstration when the model is estimated over the full sample.[32] While the estimated coefficients are negative (suggesting that Medicare spending fell among the demonstration group after enrollment in Part D relative to the nonenrolled comparison group), the results do not reach statistical significance.

Table VI.3. Estimated Impact of LEP Demonstration on Medicare Expenditures for Parts A and B Services

Independent Variables	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$
Year (2004 Omitted)				
2005	123.50	52.54	2.35	0.0187
2006	685.00	64.97	10.54	<.0001
2007	603.44	67.23	8.98	<.0001
2008	933.06	69.35	13.45	<.0001
Urban	-131.87	175.60	-0.75	0.4527
ESRD	27,457.09	516.93	53.12	<.0001
Died	6,281.92	122.06	51.46	<.0001
Condition Categories				
Infection and parasitic	2,898.50	66.11	43.85	<.0001
Malignant neoplasm	2,348.51	79.95	29.38	<.0001
Benign/in situ/uncertain neoplasm	176.07	69.01	2.55	0.0107
Diabetes	1,526.97	89.25	17.11	<.0001
Nutritional and metabolic	877.86	56.77	15.46	<.0001
Liver	3,588.45	114.05	31.46	<.0001
Gastrointestinal	1,856.12	53.25	34.86	<.0001
Musculoskeletal and connective tissue	225.93	51.65	4.37	<.0001
Hematological	5,669.29	66.29	85.53	<.0001
Cognitive disorders	5,176.89	95.70	54.09	<.0001
Substance abuse	2,416.92	95.75	25.24	<.0001
Mental	2,283.32	69.47	32.87	<.0001
Developmental disability	661.76	317.83	2.08	0.0373

[31] The estimated coefficients on the clinical condition categories reflect the impact of changes in health status during the study period. The higher cost of clinical conditions present for all years that an individual is in the study will be perfectly collinear with the beneficiary-level intercept terms and are not reflected in the reported coefficients.

[32] Since demonstration enrollment could not occur before August 2006, we consider the interaction terms for 2007 and 2008 only when measuring the effect of the demonstration on Medicare spending for medical services.

Table VI.3 *(continued)*

Independent Variables	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$
Neurological	1,842.23	73.33	25.12	<.0001
Cardio-Respiratory arrest	14,190.49	119.66	118.59	<.0001
Heart	-78.90	64.98	-1.21	0.2246
Cerebrovascular	3,154.43	78.89	39.98	<.0001
Vascular	3,759.50	65.31	57.56	<.0001
Lung	2,542.89	57.20	44.45	<.0001
Eyes	67.64	53.41	1.27	0.2054
Ears, nose, and throat	-398.92	51.28	-7.78	<.0001
Urinary system	2,535.55	58.44	43.39	<.0001
Genital system	44.29	67.48	0.66	0.5116
Skin and subcutaneous	655.43	55.27	11.86	<.0001
Injury, poisoning, complications	3,423.00	51.58	66.37	<.0001
Symptoms, signs, and ill-defined condition	-245.90	52.06	-4.72	<.0001
Transplants, openings, other v-codes	17,605.28	213.64	82.41	<.0001
Screening/history	941.27	52.72	17.85	<.0001
LEP demonstration group and year interaction				
LEP demonstration group*2006	-296.02	90.90	-3.26	0.0011
LEP demonstration group*2007	-135.26	92.74	-1.46	0.1447
LEP demonstration group*2008	-52.53	95.02	-0.55	0.5804
R^2 = 0.6487				
Sample size = 345,954 beneficiary/year observations				

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. Explanatory variables (such as LEP demonstration status, age, gender, and race) that do not vary across time for each unit of observation will be perfectly collinear with the beneficiary-level fixed effects, and so we cannot include them in the model. We annualized expenditures by dividing number of services used and spending amount by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A or B, depending on the service type. Expenditures based on Medicare payments only.

We also estimate the Medicare expenditure model separately on hospital inpatient and physician services and report the summary results in Table VI.4. When estimated over hospital inpatient expenditures only, the coefficient on the LEP demonstration group and post-period interaction term (including both 2007 and 2008) is negative and statistically significant. The results suggest that the LEP demonstration led to a $122 relative reduction in annual Medicare spending for inpatient services per demonstration beneficiary after enrollment in Part D. We do

not observe a savings offset for physician services, which are more likely to be complementary with prescription drug coverage. Beneficiaries with drug coverage are more likely to use prescription medications and, thus, to visit their doctors for prescription ordering and monitoring. The multivariate results suggest that the LEP demonstration contributed to a $71 relative increase in spending for physician services per demonstration beneficiary after enrollment in Part D, and the result is statistically significant at the one percent level.[33]

Table VI.4. Estimated Impact of LEP Demonstration on Medicare Expenditures, by Type of Medical Service

Type of Service	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$
Hospital Services (N = 345,954)				
LEP demonstration group*2006	-25.06	69.86	-0.36	0.7198
LEP demonstration group*post period	-122.30	59.41	-2.06	0.0395
Physician Services (N = 345,954)				
LEP demonstration group*2006	21.01	21.33	0.99	0.3245
LEP demonstration group*post period	70.76	18.13	3.90	<.0001

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. Explanatory variables (such as LEP demonstration status, age, gender, and race) that do not vary across time for each unit of observation will be perfectly collinear with the beneficiary-level fixed effects, and so we cannot include them in the model. We annualized expenditures by dividing number of services used and spending amount by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A or B, depending on the service type. Expenditures based on Medicare payments only.

[33] The coefficients on the 2006 interaction terms are not statistically different from zero, suggesting that there were no differences in the change in spending during the first year of the demonstration between the treatment and comparison groups.

To examine the impact of the LEP demonstration on inpatient service use directly, we estimated the DD model on the probability of being admitted for hospital inpatient care using logistic regression. The results, presented in Table VI.5, suggest that the LEP demonstration led to a lower rate of hospital admission among the demonstration population after enrollment in Part D relative to the change among the comparison group. Although demonstration LIS applicants were more likely to receive hospital inpatient services than TA recipients in general (odds ratio = 1.04), the demonstration group was less likely to be hospitalized for inpatient care than the TA comparison group after Part D enrollment (odds ratio = 0.94). The result is significant at the two percent level.

Table VI.5 Estimated Impact of LEP Demonstration on the Probability of Hospital Admission

Independent Variables	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$	Odds Ratio	95% Wald Confidence Limits	
Intercept	-5.02	0.03	24,311	<.0001			
Year (2004 Omitted)							
2005	-0.07	0.02	13.84	0.0002	0.93	0.90	0.97
2006	-0.19	0.02	66.00	<.0001	0.83	0.79	0.86
2007	-0.11	0.02	25.90	<.0001	0.89	0.85	0.93
2008	-0.15	0.02	45.50	<.0001	0.86	0.82	0.90
Age (0 to 64 years Omitted)							
65 to 74	-0.07	0.02	15.12	0.0001	0.93	0.90	0.96
75 to 84	0.00	0.02	0.01	0.9070	1.00	0.96	1.04
85+	0.21	0.02	86.17	<.0001	1.24	1.18	1.29
Female	-0.19	0.01	195.14	<.0001	0.82	0.80	0.85
Race (White Omitted)							
Black	0.19	0.02	107.59	<.0001	1.21	1.17	1.25
Other race	-0.06	0.06	0.90	0.3419	0.95	0.84	1.06
Asian	-0.28	0.06	20.24	<.0001	0.76	0.67	0.85
Hispanic	0.06	0.04	2.40	0.1212	1.06	0.98	1.15
Native American	0.09	0.04	4.33	0.0374	1.10	1.01	1.20
Urban	-0.15	0.01	136.56	<.0001	0.86	0.84	0.88
ESRD	0.42	0.06	55.82	<.0001	1.52	1.36	1.69
Died	1.50	0.04	1,804.09	<.0001	4.48	4.18	4.81
Condition Categories							
Infection and parasitic	0.29	0.02	380.47	<.0001	1.34	1.30	1.38
Malignant neoplasm	0.10	0.02	34.28	<.0001	1.10	1.07	1.14
Benign/in situ/uncertain neoplasm	-0.11	0.02	37.41	<.0001	0.90	0.87	0.93

Table VI.5 *(continued)*

Independent Variables	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$	Odds Ratio	95% Wald Confidence Limits	
Diabetes	0.15	0.01	117.02	<.0001	1.17	1.13	1.20
Nutritional and metabolic	0.34	0.01	571.15	<.0001	1.40	1.36	1.44
Liver	0.51	0.02	446.43	<.0001	1.67	1.59	1.75
Gastrointestinal	0.67	0.01	2,778.86	<.0001	1.95	1.91	2.00
Musculoskeletal and connective tissue	-0.01	0.01	0.15	0.7012	1.00	0.97	1.02
Hematological	0.91	0.01	4,568.82	<.0001	2.49	2.43	2.56
Cognitive disorders	0.80	0.02	1,570.30	<.0001	2.22	2.13	2.31
Substance abuse	1.24	0.02	3,889.71	<.0001	3.47	3.33	3.60
Mental	0.48	0.01	1,050.13	<.0001	1.62	1.57	1.66
Developmental disability	0.61	0.07	76.39	<.0001	1.84	1.61	2.12
Neurological	0.18	0.02	128.75	<.0001	1.20	1.16	1.24
Cardio-Respiratory arrest	1.72	0.03	3,040.63	<.0001	5.61	5.28	5.96
Heart	0.62	0.02	1,202.58	<.0001	1.86	1.79	1.92
Cerebrovascular	0.65	0.02	1,600.43	<.0001	1.92	1.86	1.99
Vascular	0.53	0.01	1,432.19	<.0001	1.70	1.65	1.74
Lung	0.69	0.01	2,941.96	<.0001	1.99	1.94	2.04
Eyes	-0.32	0.01	580.42	<.0001	0.73	0.71	0.75
Ears, nose, and throat	-0.30	0.01	491.39	<.0001	0.74	0.73	0.76
Urinary system	0.58	0.01	1,934.20	<.0001	1.78	1.74	1.83
Genital system	-0.11	0.02	48.55	<.0001	0.89	0.87	0.92
Skin and subcutaneous	-0.09	0.01	42.52	<.0001	0.91	0.89	0.94
Injury, poisoning, complications	0.68	0.01	2,770.52	<.0001	1.97	1.92	2.02
Symptoms, signs, and ill-defined cond.	1.12	0.02	2,986.43	<.0001	3.06	2.94	3.18
Transplants, openings, other v-codes	0.90	0.05	388.25	<.0001	2.46	2.25	2.69
Screening/history	0.56	0.02	1,221.96	<.0001	1.75	1.70	1.81
LEP Demonstration Status							
LEP demonstration ever	0.04	0.02	4.06	0.0439	1.04	1.00	1.08
LEP demonstration group*2006	0.21	0.03	42.45	<.0001	1.24	1.16	1.32
LEP demonstration group*post period	-0.06	0.03	5.25	0.0220	0.94	0.89	0.99
Likelihood Ratio = 136,076							
Sample Size = 345,954 Beneficiary/Year Observations							

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded.

Although the LEP demonstration may have led to a reduction in the use and cost of inpatient services, the underlying variance in total medical spending associated with differences in the demographic and health characteristics between the demonstration and comparison populations makes it difficult to detect statistically significant offsets at the overall level. LIS applicants (both demonstration and nondemonstration) are much more likely to be younger and disabled, while TA recipients are more likely to be elderly and to suffer from age-related chronic conditions. As a result, the distribution of annual Medicare expenditures between the two groups is likely to be very different. Moreover, in the absence of prescription drug coverage, health care service use among older beneficiaries with multiple chronic conditions is likely to increase at a faster rate than the use of services among nonaged beneficiaries with a disability, depending on the nature of the individual condition.

To restrict the variance in annual expenditures, we estimate the model separately on beneficiaries who are currently entitled to Medicare on the basis of disability and those who are currently entitled on the basis of age. The results, shown in Table VI.6, suggest that the LEP demonstration may have led to a relative reduction in medical spending among aged Medicare beneficiaries after enrollment in Part D. Elderly LIS applicants who enrolled in Part D under the LEP demonstration experienced an average $204 decrease in annual Medicare spending for medical services after enrollment relative to the change over the same period among elderly nonenrolled TA recipients. The result is statistically significant at the two percent level. The disabled LIS applicant population who enrolled under the LEP demonstration also experienced a decrease in medical spending relative to the comparison group, but the result is not statistically significant, suggesting that the pharmaceutical treatment of chronic conditions among the elderly may be more effective in lowering the use of medical services than drug management of disabling conditions among nonaged individuals.

Table VI.6. Estimated Impact of LEP Demonstration on Medicare Expenditures for Parts A and B Services, by Disability Status

Disability Status	Parameter Estimate	Standard Error	t Statistic	$\Pr > \|t\|$
Age-Based Entitlement (N = 264,162)				
LEP demonstration group*2006	-337.11	104.73	-3.22	0.0013
LEP demonstration group*post period	-203.86	89.15	-2.29	0.0222
Disability-Based Entitlement (N = 78,754)				
LEP demonstration group*2006	17.24	185.50	0.09	0.9260
LEP demonstration group*post period	-97.06	159.46	-0.61	0.5427

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: LIS demonstration applicant group based on full-subsidy LIS applicants who enrolled in Part D under the LEP demonstration authority in 2006. Comparison group based on non-LIS, non-Hurricane Katrina demonstration beneficiaries who participated in the 2005 Medicare Prescription Drug Discount Card and Transitional Assistance (TA) Program and did not enroll in Part D between 2006 and 2008. Beneficiaries enrolled in a Medicare managed care plan or resident in a long-term care facility at any time between 2006 and 2008 and beneficiaries who were dual eligible before Part D enrollment were excluded. Beneficiaries who qualify for Medicare on the basis of ESRD are excluded. Explanatory variables (such as LEP demonstration status, age, gender, and race) that do not vary across time for each unit of observation will be perfectly collinear with the beneficiary-level fixed effects, and so we cannot include them in the model. We annualized expenditures by dividing number of services used and spending amount by proportion of months in a calendar year that a beneficiary was enrolled in Medicare Parts A or B, depending on the service type. Expenditures based on Medicare payments only.

VII. NET EFFECT OF LEP DEMONSTRATION ON FEDERAL EXPENDITURES

Finally, in this chapter, we address the fourth research question: What was the overall cost of the LEP demonstration to the federal government? To calculate the net costs of the program, we take into account four factors: (1) the foregone penalty payments to CMS from late LIS applicants and Hurricane Katrina residents who were enrolled in Part D under the LEP demonstration, (2) the Medicare cost of Part D services among late enrollees who would not have signed up for the drug benefit if they had been required to pay the LEP, (3) the reduction in federal spending for medical benefits among demonstration enrollees entitled to Medicare on the basis of age, and (4) the cost of administering the demonstration. The sum of foregone LEP revenues, administrative costs, and Part D spending among demonstration participants, minus the spending offsets among nondisabled beneficiaries represents the overall net cost of the demonstration to the federal government.

A. Impact of LEP Demonstration on Foregone LEP Revenues

We calculate the LEP adjustment factor by multiplying the product of uncovered months between the end of the IEP and the beginning of Part D enrollment and the national average base premium amount in each year by one percent. We then multiply the LEP adjustment factor by the number of months a beneficiary was enrolled in Part D between 2006 and 2008 after enrolling under demonstration authority to obtain the total LEP payment amount. Finally, we multiply the total LEP payment amount by the nonsubsidized percentage to determine the amount of LEP revenues that CMS would have received in the absence of the demonstration.[34]

[34] In the absence of the demonstration, CMS would have subsidized 80 percent of the total LEP payment amount for LIS applicants with a 100 percent premium subsidy, 60 percent for those with a 75 percent premium subsidy, 40 percent for those with a 50 percent premium subsidy, and 20 percent for those with a 25 percent premium subsidy (CMS 2005). Beneficiaries who enrolled in Part D under Hurricane Katrina LEP demonstration authority only would have been required to pay the full LEP amount in the absence of the demonstration.

The average LEP monthly adjustment factor among demonstration LIS applicants was $2.87 (roughly 10 percent of the base premium amount), and the average total LEP payment amount per demonstration beneficiary was $32.92. The average LEP adjustment factor among Hurricane Katrina residents was $1.15; because they could only be enrolled in Part D under demonstration authority in 2006, they had less time to accumulate uncovered months. The average total LEP payment amount per Hurricane Katrina resident was $27.11.

Table VII.1 shows the total LEP revenues, by year and demonstration category, which would have been collected by CMS in the absence of the demonstration if all demonstration beneficiaries had enrolled in Part D. The federal government experienced a total of $2.0 million dollars in foregone LEP revenues between 2006 and 2008. The majority of these unpaid revenues (91 percent) are attributable to the LIS population. Most of the foregone LEP revenues (70 percent) were incurred in 2008, and are likely to remain at this level in the short run as more LIS applicants enroll in Part D under the LEP demonstration, and current demonstration beneficiaries continue to accrue covered months on which the penalty would otherwise be applied.

Table VII.1. Foregone Revenues Among LEP Demonstration LIS Applicants and Hurricane Katrina Residents

Year	Demonstration LIS Applicants (N = 203,865)	Demonstration Hurricane Katrina Residents (N = 7,058)	All Demonstration Beneficiaries (N = 210,923)
2006	29,114	15,087	44,201
2007	477,254	90,961	568,215
2008	1,335,605	85,326	1,420,931
Total	**1,841,973**	**191,374**	**2,033,347**

Source: Mathematica analysis of CME file and EDB.

Note: Figures based on all LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Foregone LEP revenues are based on the number of months of Part D enrollment after being covered under the demonstration multiplied by the LEP adjustment factor. The LEP adjustment factor is equal to 1 percent of the national average base premium multiplied by the number of months between the end of the initial enrollment period and the date of demonstration enrollment in Part D without creditable coverage.

B. Net Cost of LEP Demonstration Using a 30 Percent Inducement Rate

Our earlier analysis of PDE claims found that, among demonstration LIS applicants, Medicare incurred annual Part D drug costs per demonstration beneficiary of $253 in 2006, $855 in 2007, and $1,165 in 2008 (see Table V.2). Average annual Medicare spending for Part D services among demonstration Hurricane Katrina residents was $1 in 2006, $77 in 2007, and $119 in 2008. In addition, the offset analysis described in Chapter VI suggests that the LEP demonstration may have resulted in a reduction in annual Medicare payments for Parts A and B services of $204 in 2007 and 2008 per demonstration beneficiary entitled to Medicare benefits on the basis of age (see Table VI.6). Subtracting the average offset amount (for nondisabled beneficiaries only) from the average Part D spending amount for each year and demonstration population, and multiplying the net amount by the total number of demonstration beneficiaries in each year of the study, gives us an overall impact estimate of $269.6 million in net benefit

payments between 2006 and 2008 (see Table VII.2). Adding the foregone LEP revenues, plus a 3 percent administrative fee applied to the LEP payments, the overall net impact of the demonstration on federal expenditures is $271.7 million, equivalent to $1,298 per demonstration participant.

Table VII.2. Estimated Net Cost of LEP Demonstration for LIS Applicants and Hurricane Katrina Residents Using 100 Percent Inducement Rate, 2006–2008

Costs	Demonstration LIS Applicants	Demonstration Hurricane Katrina Residents	All Demonstration Beneficiaries
Total Costs (Dollars)			
Foregone LEP revenues	1,841,973	191,374	2,033,347
Administrative costs	55,259	5,741	61,000
Part D expenditures	305,890,940	995,531	306,886,471
Part A and B Savings (Dollars)	-35,678,054	-1,635,141	-37,313,195
Total Net Costs (Dollars)	272,110,118	-442,496	271,667,623

Source: Mathematica analysis of CME file, EBD, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: Figures based on LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid benefits are excluded during year of dual eligibility. Foregone LEP revenues are based on 1 percent of premiums during uncovered months multiplied by number of months of enrollment. Administrative costs are assumed to be 3 percent of LEP payments over all demonstration participants. Part D expenditures are based on costs incurred by participants after demonstration enrollment. Savings are calculated over demonstration participants currently entitled to Medicare on the basis of age only.

All of the total net costs of the LEP demonstration are attributable to the LIS applicant population. The LEP program led to a net *reduction* in total costs among demonstration Hurricane Katrina residents of over $440,000, largely because non-LIS-applicants who enrolled in Part D under the LEP demonstration in 2006 solely on the basis of their residency status were ineligible for federal Part D low-income subsidy payments below the catastrophic coverage threshold. Without the additional federal premium and cost-sharing subsidies, the reduction in benefit payments for Parts A and B services outweighs the total costs of the demonstration for the non-LIS-applicant Hurricane Katrina population.

However, in the absence of the demonstration, we cannot assume that all demonstration participants would have chosen not to enroll in Part D. Some late beneficiaries would have decided to accept the LEP and enroll in the prescription drug benefit. Benefit payments (including medical spending offsets) incurred by beneficiaries who would have enrolled in Part D without the LEP exemption cannot be attributed to the demonstration. To account for the proportion of late enrollment that would have occurred in the absence of the demonstration, we compare the late enrollment rates of LIS applicant beneficiaries and individuals in the TA comparison group (who were not exempt from the penalty). The difference between the late enrollment rates of the two groups provides an upper bound estimate of the proportion of additional Part D enrollment attributable to the LEP demonstration. A total of 8.13 percent of all demonstration beneficiaries (including LIS applicants and Hurricane Katrina residents) and 5.80 percent of all enrolled TA recipients enrolled in Part D at least 63 days after the end of their IEP without creditable coverage, leaving a residual enrollment rate of 2.33 percent that can reasonably be attributed to the LEP demonstration. Applying this residual late enrollment rate to all LIS applicants who enrolled in Part D between 2006 and 2008 and all Hurricane Katrina residents who enrolled in Part D in 2006 gives us a total of 63,611 beneficiaries who were incentivized to enroll in Part D because of the LEP demonstration, equivalent to 30 percent of actual demonstration enrollment.

In Table VII.3, we present the net cost of the LEP demonstration to the federal government, under the assumption that 70 percent of demonstration beneficiaries would have enrolled in Part D in the absence of the LEP demonstration and only 30 percent were induced to enroll because of the elimination of the penalty. We then calculate foregone revenues only over beneficiaries likely to have enrolled without the exemption, and benefit payments only over those likely to have remained nonenrolled. Most of the costs of the demonstration are attributable to Part D

benefit payments. Total demonstration costs include $1.4 million (1.5 percent) in foregone LEP revenues and $92.6 million (98.5 percent) in Part D benefit payments and administrative costs. In addition, the LEP demonstration led to an estimated $11.3 million reduction in total benefit payments for Parts A and B services among beneficiaries entitled to Medicare on the basis of age, equivalent to a 12 percent reduction in total costs attributable to the demonstration. Factoring in the estimated offset amount, the net cost of the LEP demonstration to the federal government between 2006 and 2008 was $82.8 million, equivalent to $396 per demonstration participant.

Table VII.3. Estimated Net Cost of LEP Demonstration for LIS Applicants and Hurricane Katrina Residents Using 30 Percent Inducement Rate, 2006–2008

Costs	Demonstration LIS Applicants	Demonstration Hurricane Katrina Residents	All Demonstration Beneficiaries
Total Costs (Dollars)			
Foregone LEP revenues	1,286,250	133,636	1,419,886
Administrative costs	38,587	4,009	42,596
Part D expenditures	92,287,297	300,352	92,587,649
Part A and B Savings (Dollars)	-10,764,069	-493,322	-11,257,391
Total Net Costs (Dollars)	82,848,065	-55,325	82,792,740

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: Figures based on LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid benefits are excluded during year of dual eligibility. Foregone LEP revenues are based on 1 percent of premiums during uncovered months multiplied by number of months of enrollment after being covered under the LEP demonstration. Administrative costs are assumed to be 3 percent of LEP payments over all demonstration participants. Part D expenditures are based on costs incurred by the demonstration population after demonstration-related enrollment. Savings are calculated over demonstration participants currently entitled to Medicare on the basis of age only. Foregone LEP revenues are calculated over 70 percent of demonstration participants likely to have enrolled in Part D in the absence of the demonstration. Benefit costs and savings are calculated over 30 percent of demonstration participants likely to have been induced to enroll in Part D because of exemption.

C. Net Cost of LEP Demonstration Using a 12 Percent Inducement Rate

An alternative methodology for producing a lower bound estimate of induced enrollment among LIS applicant beneficiaries facing an LEP relies on an empirical examination of the financial incentives to take up Part D. Acumen used a five percent sample of 2007 LIS applicants and their associated PDE data to evaluate the cost implications of enrolling in Part D among this group of beneficiaries. The rows in Table VII.4 present the LIS applicant pool by LIPS level, as determined by beneficiaries' level of income and assets. For each LIPS level, Acumen computed the lowest level of gross drug costs (GDC) for which an individual would have lower out-of-pocket expenses if they enroll in Part D, relative to not enrolling in Part D and paying full drug costs out of pocket. In these calculations, Acumen used the average 2007 annual premium of $300 and applied an average LEP of $34.50 (average monthly fee of $2.87 times 12 months) in the absence of the demonstration. Additionally, cash drug prices were set 25 percent above Part D prices, which are negotiated by Part D plans.

Table VII.4. LEP Enrollment Incentives by LIS Applicant Group, 2007

LIS Income/Asset Levels	Percentage of All LIS Applicants	LIPS Level	Pre-Catastrophic Copayment/ Coinsurance Amount	Lowest GDC for Which Part D Enrollment is Beneficial	Estimated Proportion of Beneficiaries Below Enrollment Indifference Amount
<135 Percent of FPL, Low Assets	70%	100%	$2.15/$5.35	$28.50	10%
<135 Percent of FPL, High Assets	7%	100%	15%	$72.30	13%
135 – 140 Percent of FPL	8%	75%	15%	$140.50	15%
141 – 145 Percent of FPL	8%	50%	15%	$208.70	16%
146 – 150 Percent of FPL	7%	25%	15%	$276.90	20%

Source: Acumen LLC analysis of five percent sample of PDE data, 2007.

LIS = low income subsidy; FPL = federal poverty level; LIPS = low income premium subsidy; GDC = gross drug cost.

Based on an analysis of PDE data, drug consumption levels are too high to support the estimated 30 percent induced enrollment rate assumption, since the vast majority of LIS applicants have a GDC above the threshold at which the financial benefits of enrollment outweigh the out-of-pocket costs of not enrolling. While the LEP increases the cost of enrolling in Part D, beneficiaries with the most generous LIPS amount would be better off by enrolling if they need to purchase drugs worth as little as $28.50 in a year (see Column 5 of Table VII.4 for the cutoff amounts). Beneficiaries with a coinsurance rate of 15 percent and a LIPS amount of 25 percent, on the other hand, have an annual GDC threshold of $276.90, the highest among all applicants. The last column in Table VII.4 shows the proportion of beneficiaries in each LIPS group with observed 2007 GDC amounts below the threshold value. The percentage of beneficiaries for whom Part D enrollment is financially beneficial, even with the LEP, varies between 10 and 20 percent, with a weighted average across all LIS applicant beneficiaries of 12 percent.

In Table VII.5, we present the net cost of the LEP demonstration to the federal government under the assumption that 88 percent of demonstration beneficiaries would have enrolled in Part D in the absence of the LEP demonstration and only 12 percent were induced to enroll because of the elimination of the penalty. Using the lower LEP inducement rate, total demonstration costs fall by nearly 60 percent, from $94.1 million to $38.7 million (including $1.8 million in foregone LEP revenues and $36.9 million in Part D benefit payments and administrative costs). The lower inducement rate also results in a reduction in total benefit payments for Parts A and B services among beneficiaries entitled to Medicare on the basis of age, from $11.3 million to $4.5 million. Moreover, because of the lower inducement rate, the loss of LEP revenues now outweighs net benefit payments for the Hurricane Katrina participants, and this population increases the overall cost of the demonstration. Thus the total net cost of the LEP demonstration

to the federal government between 2006 and 2008, assuming only 12 percent of all LIS applicants were incentivized to enroll in Part D because of the elimination of the penalty, was $34.2 million, equivalent to $163 per demonstration beneficiary.

Table VII.5. Estimated Net Cost of LEP Demonstration for LIS Applicants and Hurricane Katrina Residents Using 12 Percent Inducement Rate, 2006–2008

Costs	Demonstration LIS Applicants	Demonstration Hurricane Katrina Residents	All Demonstration Beneficiaries
Total Costs (Dollars)			
Foregone LEP revenues	1,620,936	168,409	1,789,345
Administrative costs	48,628	5,052	53,680
Part D expenditures	36,706,913	119,464	36,826,377
Part A and B Savings (Dollars)	-4,281,366	-196,217	-4,477,583
Total Net Costs (Dollars)	34,095,111	96,708	34,191,819

Source: Mathematica analysis of CME file, EDB, Medicare Prescription Drug Discount Card and Transitional Assistance Program enrollment file, and SAF, 2006–2008.

Note: Figures based on LIS applicants who enrolled in Part D under the LEP demonstration authority between 2006 and 2008 and all beneficiaries living in one of the counties or parishes affected by Hurricane Katrina in August 2005 who enrolled in Part D under the LEP demonstration authority in 2006. Demonstration participants who became dually eligible for Medicaid benefits are excluded during year of dual eligibility. Foregone LEP revenues are based on 1 percent of premiums during uncovered months multiplied by number of months of enrollment after being covered under the LEP demonstration. Administrative costs are assumed to be 3 percent of LEP payments over all demonstration participants. Part D expenditures are based on costs incurred by the LEP demonstration population after demonstration-related enrollment. Savings are calculated over demonstration participants currently entitled to Medicare on the basis of age only. Foregone LEP revenues are calculated over 88 percent of demonstration participants likely to have enrolled in Part D in the absence of the demonstration. Benefit costs and savings are calculated over 12 percent of demonstration participants likely to have been induced to enroll in Part D because of exemption.

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VIII. CONCLUSION

To encourage the enrollment of non-deemed eligible low-income beneficiaries in Part D, CMS used its demonstration authority to waive the LEP during the first three years of the new benefit program and then eliminated it permanently in 2008. The purpose of this study was to evaluate the impact of the LEP demonstration on the number and characteristics of beneficiaries who benefitted from the demonstration, the use and cost of Part D services, the use and cost of Medicare Parts A and B spending, and the overall net cost to the federal government. We conclude the report by summarizing the key findings and presenting the limitations of the study.

A. Summary of Key Findings

The LEP demonstration benefitted a small but significant number of low-income Medicare beneficiaries who might not have joined the federal prescription drug program if they had been required to pay a late enrollment penalty. A total of 8.3 percent of all nondeemed LIS applicants who enrolled in Part D during the first three years of the new benefit program and 2.5 percent of all residents of Hurricane Katrina who enrolled in Part D during the first year of the program benefitted from the LEP demonstration. In total, 210,923 beneficiaries enrolled in Part D at least 63 days after the end of their IEP without creditable coverage and, as a result of the special enrollment period that CMS granted them under its demonstration authority, were exempted from having to pay a monthly LEP that would have been applied for as long as they remained enrolled in a Part D plan. Had they been required to pay the LEP, some of these low-income beneficiaries might have chosen to remain nonenrolled, or to delay enrollment until they experienced a medical condition that had to be treated through prescription medications. In fact, a comparison of baseline health characteristics indicates that demonstration LIS applicants and Hurricane Katrina residents who enrolled in Part D had fewer clinical conditions and lower

medical expenditures than their nondemonstration counterparts. Most participants remained continuously enrolled in Part D after benefitting from the demonstration.

Eighty percent of all LIS applicants between 2006 and 2008 were fully subsidized for premiums, annual deductibles, and copayments after reaching catastrophic coverage and partially subsidized for copayments on drugs up to the catastrophic threshold. By 2008, when most demonstration participants were enrolled in Part D for the full year, CMS paid a total of $1,165 in drug costs for each LIS applicant. Twenty percent of this annual average federal payment amount was attributable to the low-income premium subsidy, 55 percent was attributable to the low-income cost-sharing subsidy, and 25 percent was due to the full copayment subsidy after reaching catastrophic coverage. Because non-LIS-eligible Hurricane Katrina residents who enrolled in Part D under the LEP demonstration authority were not eligible for the federal low-income premium and copayment subsidies, CMS paid only $119 on average for this demonstration population in 2008, all of which was attributable to the catastrophic subsidy amount. Total federal outlays for Part D services among all LEP demonstration participants during the first three years of the program were $306.9 million, equivalent to 0.2 percent of total federal benefit payments for Part D services during this period. In 2008, LIS applicants who enrolled in Part D under the LEP demonstration authority represented 0.8 percent of total Part D enrollment, but accounted for 0.4 percent of total Part D benefit payments during the year.

The findings from the Medicare spending offset analysis suggest that the elimination of the LEP for beneficiaries exercising their option to enroll in Part D during their special enrollment periods resulted in a reduction in the use of hospital inpatient services, particularly among the beneficiaries who suffer from age-related chronic conditions. Demonstration LIS applicants experienced a decline in hospital admissions and a reduction in Medicare spending for hospital inpatient services after enrollment in Part D relative to the change over the same period among

the nonenrolled transitional assistance recipient comparison group. When estimated over Medicare beneficiaries ages 65 and older, and thus more likely to suffer from the types of age-related chronic conditions that benefit from timely and consistent access to prescription medications, the offset analysis revealed a statistically significant $204 (5.5 percent) relative reduction in average annual Medicare spending for Parts A and B services after enrollment in Part D. The potential savings from a reduction in medical spending among the elderly should help offset some of the costs of the LEP demonstration to the federal government. The estimated offset effect among beneficiaries who qualify for Medicare on the basis of disability was not statistically different from zero.

The overall net cost of the LEP demonstration to the federal government depends on the proportion of participants who would not have enrolled in Part D if they had been required to pay the penalty. Prescription drug subsidy payments for those who would have accepted the penalty and enrolled in Part D in the absence of the LEP demonstration cannot be attributed to the demonstration. If we assume that 30 percent of those who benefitted from the demonstration (upper bound) were induced to enroll because of the elimination of the penalty, total net costs to the federal government during the first three years of the demonstration were $82.8 million ($1.4 million in foregone LEP revenues plus $92.6 million in Part D spending and administrative costs minus $11.3 million in medical savings). This is equivalent to $396 in net federal payments per demonstration participant. Under the assumption that only 12 percent (lower bound) were induced to enroll, the net federal costs of the demonstration were $34.2 million ($1.8 million in foregone LEP revenues plus $36.9 million in Part D spending and administrative costs minus $4.5 million in medical savings). This is equivalent to $163 in net federal payments per demonstration beneficiary. Because of the predominance of Part D expenditures in the net cost calculations, the lower the proportion of late enrollees who were induced to enroll in Part D

because of the elimination of the penalty, the lower the net cost of the LEP demonstration to the federal government.

B. Limitations of Study

Determining the overall net cost of the LEP demonstration to the federal government is difficult and our findings rest on several assumptions about what would have occurred in the absence of the demonstration. First, the study findings depend on the proportion of late enrollment that would have occurred without the elimination of the penalty. We assume that between 70 and 88 percent of all late enrollment would have occurred in the absence of the demonstration; that is, only between 12 and 30 percent of LIS applicants and Hurricane Katrina residents who enrolled at least 63 days after the end of their IEP were incentivized to sign up for the federal outpatient prescription drug benefit because of the elimination of the penalty. If, in the presence of a near-full drug subsidy, a larger proportion of demonstration participants would have chosen to enroll without the exemption, our calculation of foregone LEP revenues to the federal government will be too low and our estimate of net Medicare benefit payments attributable to the demonstration will be too high. Given the predominance of benefit payments for Part D services (relative to Parts A and B services) in the net cost calculation, a lower (higher) inducement rate decreases (increases) the total net cost of the LEP demonstration to the federal government.

Second, our estimate of the medical savings offset depends on the assumption that medical spending over time among nonenrolled transitional assistance recipients who either do not apply or are not eligible for the LEP demonstration reflects the trend in medical spending among participants that would have occurred in the absence of the demonstration. However, nonenrolled transitional assistance recipients are older, sicker, and have higher baseline medical costs than demonstration participants in general. If, as a result of these differences, average

annual spending for Parts A and B services among nonenrolled transitional assistance recipients increased at a faster rate than it would have increased among demonstration participants in the absence of the demonstration, our estimate of the impact of the LEP demonstration on Medicare Part A and B savings will be too high.

Finally, the report focuses the cost of the LEP demonstration to the federal government during the first three years of the program. The increased federal Part D premium and other cost-sharing subsidy payments for demonstration participants will not be limited to this three-year period, but rather will be incurred during all years in which demonstration participants remain enrolled in the Part D program. Similarly, the full impact of outpatient prescription drug coverage on the lower use of inpatient and other medical services because of improved treatment and management of chronic conditions cannot be immediately observed; the reduction in inpatient costs associated with improved access to prescription medications will likely extend beyond 2008. If taken into account, these longer-run savings would decrease the estimated net cost of the LEP demonstration to the federal government.

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