

Providing Prescription Drug Coverage to the Elderly: America's Experiment with Medicare Part D

Author(s): Mark Duggan, Patrick Healy and Fiona Scott Morton

Source: *The Journal of Economic Perspectives*, Vol. 22, No. 4 (Fall, 2008), pp. 69-92

Published by: American Economic Association

Stable URL: <https://www.jstor.org/stable/27648278>

Accessed: 21-06-2019 18:10 UTC

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

*American Economic Association* is collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Economic Perspectives*

# Providing Prescription Drug Coverage to the Elderly: America's Experiment with Medicare Part D

Mark Duggan, Patrick Healy,  
and Fiona Scott Morton

**T**he share of U.S. healthcare spending accounted for by prescription drugs has steadily increased since the early 1980s, from 4.5 percent in 1982 to 5.6 percent in 1994, with this then rapidly accelerating to 10.1 percent by 2005 (Centers for Medicare and Medicaid Services, 2008). However, the federal government's Medicare program did not provide prescription drug coverage for the first 40 years of its existence since its inception in 1966 (with the exception of drugs administered in hospitals and other institutional settings and for selected drugs administered in physicians' offices, primarily those for cancer therapy). Thus, more than 30 percent of the 44 million elderly and disabled beneficiaries of the program lacked insurance coverage for prescribed medications and could not easily afford to pay for them out of pocket (Neuman et al., 2007).

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 established a voluntary outpatient prescription drug benefit known as Medicare Part D. This program took effect in 2006 and represents the largest expansion of an entitlement program since the start of Medicare itself. In 2007, Part D covered 24 million beneficiaries and cost the federal government \$39 billion, for an average of \$1,600 per individual enrolled. This cost is projected to grow as per capita healthcare costs continue to outpace GDP growth and as the baby boom generation ages (Aaron, Lambrew, and Healy, 2008). The Medicare Trustees (2008) estimate

■ *Mark Duggan is Professor of Economics, University of Maryland, College Park, Maryland. Patrick Healy is a Senior Research Assistant, Brookings Institution, Washington, D.C. Fiona Scott Morton is Professor of Economics, Yale University, School of Management, New Haven, Connecticut. Both Duggan and Scott Morton are Research Associates, National Bureau of Economic Research, Cambridge, Massachusetts. Their email addresses are <duggan@econ.umd.edu>, <phealy@alumni.lse.ac.uk>, <fiona.scottmorton@yale.edu>, respectively.*

that by 2015, Part D will cover 34 million Medicare recipients and will have cost the federal government a cumulative \$586 billion.

The design of Part D is of particular interest to economists for at least three reasons: First, the program has the potential to affect significantly both the health and the economic well-being of the more than 44 million individuals currently enrolled in Medicare. Second, Part D has substantially increased government spending on health care despite the projections that such spending was already on an unsustainable path. Third, Part D represents an ambitious attempt to use market mechanisms in the delivery of a large-scale entitlement program. Other federal prescription drug programs have purchased drugs and dispensed them directly, like the U.S. Department of Veterans' Affairs, or employed a formula to determine the price to pay for each treatment, like Medicaid (Duggan and Scott Morton, 2006). In contrast, Medicare Part D aims to control spending by exposing its enrollees to the full incremental costs above a benchmark insurance plan, and by allowing private insurance plans to compete for enrollees by negotiating with drug manufacturers for lower prices and covering treatments that are valued by Medicare recipients. These insurers, operating under substantial federal subsidies and rules to ensure access, compete for enrollees in one or more regions based on benefit design, price, and service. Medicare recipients can choose from among dozens of plans, potentially allowing for a better match on average between individual preferences and services provided than one uniform program could achieve.

Because of this design, Part D has been controversial. One set of critics has argued that the program is a subsidized handout to pharmaceutical firms and that the government should instead negotiate directly with pharmaceutical manufacturers over prices. Another set of critics has complained that the program is too large and generous and that it creates unnecessary government interference in the pharmaceutical market. Still other critics claim that the profusion of plans and options is so complex and confusing that the elderly are unable to understand their options and make the best choices. In this paper, we aim to shed light on these and many related issues, including the incentives inherent in the competition among plans, the forces that affect drug prices, and the sustainability of Part D in the face of adverse selection and moral hazard.

We conclude that Part D has succeeded in a number of important ways—by on average reducing pharmaceutical prices, increasing the utilization of prescription drugs, reducing medical expenditure risk, and costing the government substantially less than the initial budget projections suggested. However, the results from recent research suggest that the complexity of the program has resulted in suboptimal choices by many Medicare recipients and that Part D has increased the price of treatments without therapeutic substitutes (Kling, Mullainathan, Shafir, Vermeulen, and Wrobel, 2008; Duggan and Scott Morton, 2008). Additionally, important concerns remain about the high administrative costs of the program and about the ability of the insurance plans to cream-skim (or to avoid certain types of

patients). Thus while Medicare Part D has certainly been more of a success than its most vocal opponents predicted, substantial room for improvement remains.

## Sponsors of Medicare Part D

A variety of organizations can sponsor Medicare Part D plans: insurance companies, employers, union organizations, Medicare managed care plans, and others. Plan sponsors offer one of two broad types of private plans: stand-alone prescription drug plans that supplement fee-for-service Medicare, and Medicare Advantage prescription drug plans, in which the drug plan is integrated into the overall health care provided by a managed care organization.<sup>1</sup> Medicare Advantage plans existed well before the creation of Part D—and in fact some were already providing prescription drug coverage in 2003. Prescription drug plans are specific to a region and must be available to a consumer anywhere in the region. There are 34 stand-alone prescription drug plan regions and 26 Medicare Advantage drug plan regions nationwide (excluding the territories). Medicare Advantage plans generally define their own service areas offered at a local (county) level rather than a regional level.

In this article, we focus primarily on stand-alone prescription drug plans. One reason is that significantly more Medicare recipients are enrolled in them: of the 57 percent of Medicare recipients enrolled in Part D as of June 2008, more than two-thirds chose stand-alone prescription drug plans. In addition, Medicare Advantage plans are purposefully subsidized more heavily to encourage more Medicare recipients to enroll in the managed form of the benefit. Given these factors together with the manner in which Medicare Advantage combines the drug benefit and a menu of other medical services, quick comparisons of a prescription drug plan to a Medicare Advantage plan are not especially fruitful.

Sponsors of a stand-alone prescription drug plan must offer a basic plan consisting of either the government-defined standard benefit or an alternative “actuarially equivalent” in value (meaning that the average shares of total spending covered by the plan and the enrollee are equal to those under the standard benefit). Sponsors can also offer enhanced plans with more coverage, more favorable cost sharing, and a more expansive formulary (a list of drugs covered by the plan with associated cost-sharing rules)—and generally higher premiums.

For 2008, 55 parent firms are sponsoring stand-alone prescription drug plans, and 1,824 region-specific plans exist, which works out to an average of 33 plans per

<sup>1</sup> In an effort to reduce Part D’s crowding out of private insurance coverage, the legislation also established tax-free subsidies (Medicare benefits are also tax free) to employers who provide prescription drug coverage to Medicare recipients that is at least as generous as the standard Part D plan (“creditable coverage”). The subsidy pays 28 percent of costs incurred by the employers between the deductible and an upper limit of \$5,600 per enrollee in 2008, for a maximum potential subsidy of \$1,491. About 15 percent of all Medicare beneficiaries, or 6.7 million people, received the retiree drug subsidy in 2008. We will have little to say about this aspect of the program.

Table 1

**Distribution of Stand-alone Prescription Drug Plan Enrollees across Parent Firms, 2008**

	<i>Organization type</i>	<i>Enrollment (millions)</i>	<i>Market share</i>
<b>Total</b>		16.42	
UnitedHealth Group	National	4.05	24.7%
Humana	National	3.11	18.9%
Universal American	National	1.80	11.0%
Wellpoint	National	1.31	8.0%
WellCare Health Plans	National	1.00	6.1%
Coventry Health Care	National	0.87	5.3%
CVS Caremark	National	0.53	3.2%
Health Net	National	0.51	3.1%
Longs Drug Stores	National	0.45	2.8%
CIGNA	National	0.32	2.0%
Health Care Service	Local	0.31	1.9%
Aetna	National	0.31	1.9%
Blue Cross and Blue Shield of Minnesota	Local	0.30	1.8%
HealthSpring	National	0.27	1.6%
Medco Health Solutions	National	0.21	1.3%
All Others	Both	1.08	6.6%

*Source:* Authors' calculations from Centers for Medicare and Medicaid Services, June 2008 Part D enrollment report, available at (<http://www.cms.hhs.gov/MCRAAdvPartDENrolData/EP>).

*Notes:* The table excludes employer-sponsored plans and union plans. National plans serve all 34 stand-alone prescription drug plan regions (excluding territories), while local plans serve fewer than 30 regions.

firm and 54 plans for each of the 34 regions. The entry of plans was much greater than expected by the Centers for Medicare and Medicaid Services, which administers the benefit. No regions in the United States had fewer than 22 basic plans offered and 47 plans overall (including Medicare Advantage plans), which creates a large amount of choice for the typical Medicare recipient.

Enrollment has been highly concentrated in a small number of plans covering large geographic areas, with 4 percent of the 1,824 plans accounting for more than half of stand-alone prescription drug plan enrollment in 2008. Firm concentrations are also impressive, with the top three parent firms insuring 55 percent of total stand-alone prescription drug plan enrollees in 2008, as shown in Table 1.

## The Consumer's Problem

Every year beginning on November 15, Medicare beneficiaries have the option to sign up for Part D or to change their current plan, effective January 1 of the next calendar year. They must remain in their chosen plans for the entire year and

cannot switch to a different plan until the following January.<sup>2</sup> Sponsors of prescription drug plans in each region are required to submit all plan characteristics to the Centers for Medicare and Medicaid Services by the open enrollment period so that enrollees can make comparisons.

### Cost-Sharing Scheme and Incentives

Part D allocates costs between the plan and the enrollee in an unusual way. Suppose that the enrollee chooses a plan with the statutorily defined standard benefit and is ineligible for any low-income subsidies. The enrollee pays the premium for the plan, which in 2008 equals about \$32 per month on average. An enrollee who requires medications will pay 100 percent of the costs until spending for covered drugs reaches an initial deductible, which is \$275 in 2008. After the enrollee has paid the deductible, the next \$2,235 of expenditures are paid 25 percent by the enrollee and 75 percent by the plan until combined spending reaches the initial coverage limit, \$2,510 in 2008. Expenditures above this level and below \$5,726 fall into what has become known as the “doughnut hole,” in which the enrollee pays 100 percent and the plan pays zero.

An enrollee who spends an average of more than \$210 per month on medications will fall into this region. These payments drive the enrollee’s out-of-pocket costs up from \$834 a year at the start of the doughnut hole, to a maximum of \$4,050, which corresponds to \$5,726 in total drug costs. For spending above this “catastrophic threshold,” the enrollee pays the greater of 5 percent coinsurance, or copayments of \$2.25 per generic or “preferred” brand-name drug (defined further on) and \$5.60 for all others. The government pays 80 percent of the remaining costs through additional subsidies, while the sponsor of the plan pays 15 percent.

It is important to emphasize that the catastrophic threshold is triggered by the enrollee’s *out-of-pocket* spending and that spending on drugs not listed on the plan’s formulary is not counted. Moreover, if an enrollee purchases an enhanced plan or additional insurance that reduces out-of-pocket costs, the enrollee must continue cost sharing until the full out-of-pocket amount of \$4,050 has been paid—regardless of total costs. In this way, Part D incentives dampen the supply of “gap” coverage, because such coverage raises the total spending required before reaching the catastrophic threshold and therefore makes the enrollee more costly to the insurer.<sup>3</sup>

While the scheme described above departs from the standard intuition that it

<sup>2</sup> There are certain exceptions to this general rule. For example, Medicare recipients residing in a nursing home or who are also eligible for Medicaid have more opportunities to change plans through special enrollment periods. Similarly, Medicare recipients who move to a different plan region can switch to a different plan around the time of their move.

<sup>3</sup> To address this issue, the Centers for Medicare and Medicaid Services used its demonstration authority to allow plans offering gap coverage to receive federal reinsurance in the form of extra monthly capitated payments per enrollee instead of reimbursement for specific high-cost enrollees. Indeed, the demonstration seems to be effective as the proportion of enhanced plans offering coverage in the gap rose from 36 percent in 2006 to 57 percent in 2008. For more information, see Centers for Medicare and Medicaid Services’ “Instructions for the Part D Payment Demonstration,” May 10, 2005 (available at <http://www.cms.hhs.gov/DrugCoverageClaimsData/Downloads/partdpymntdemo.pdf>).

is optimal to have steadily more cost sharing as expenditures rise, it is the natural outcome of a political process that had three constraints: First, policymakers wanted the program to be popular with a large fraction of Medicare recipients, even for those who spend very little on drugs. Second, policymakers also wanted the program to have catastrophic coverage to protect those who have high outlays from ruinous bills. Finally, the fiscal year 2004 budget resolution capped the bill's total cost, and so the "doughnut hole" emerged to keep costs down.

### **Alternative Plan Design**

The benefit structure laid out above is the one defined in the 2003 legislation. Plans with this structure make up one-quarter of basic plans in 2008 and have a stand-alone prescription plan market share of 17 percent overall. However, sponsors may offer two additional types of basic plans as long as projected average payments for the enrollee are the same as would be expected under the standard plan.

The first alternative, called "actuarially equivalent coverage," might have tiered copayments in place of the standard 25 percent coinsurance, but all other elements of the benefit design such as the deductible and initial coverage limit would be the same as the standard benefit. These plans comprise 26 percent of basic plans for 2008, with a market share of 23 percent overall.

The other alternative, called "basic alternative coverage," may have a smaller deductible than the standard plan or no deductible at all, as well as modified cost sharing. These plans account for more than half of the 2008 basic offerings and have been the most popular with stand-alone plan enrollees. Nearly two-fifths of beneficiaries enrolled in basic alternative plans in 2008 with over half of those persons opting for zero-deductible plans. Table 2 presents the distribution of enrollees by plan scope, benefit design, and associated design features.

### **Premium**

When Medicare recipients compare plans, the most salient price is likely to be the monthly premium. Premiums in 2008 range from \$9.80 for the cheapest defined standard plan to \$72 and \$107.50 for the most expensive basic and enhanced plans, respectively. It is important to note that the government subsidy does not depend on the monthly premium, so as not to distort Medicare recipients toward more generous plans.

To encourage enrollment of healthy people earlier in life, Part D imposes a permanent increase in premiums for those who enroll later. For each month after which a beneficiary is eligible for Part D but neither enrolls in the program nor obtains acceptable alternative coverage, that beneficiary pays an additional 1 percent of the national base beneficiary premium (defined below) for a chosen plan. Thus, for example, two years of delay would cost the beneficiary an additional 24 percent. This penalty may help to explain the sustained popularity of plans with low premiums, because some beneficiaries may not expect to need medications in the upcoming year, as shown in Table 3. However, by enrolling currently, beneficiaries

Table 2

**Characteristics of 2008 Stand-alone Prescription Drug Plans**

	<i>Plans</i>		<i>Enrollment</i>	
	<i>Number</i>	<i>Percent</i>	<i>(in millions)</i>	<i>Percent</i>
<b>Total</b>	1824		16.42	
<b>Organization</b>				
National	1564	86%	13.86	84%
Local	260	14%	2.56	16%
<b>Plan type</b>				
Defined standard	217	12%	2.76	17%
Actuarially equivalent	232	13%	3.82	23%
Basic alternative	450	25%	6.15	37%
Enhanced	925	51%	3.68	22%
<b>Deductible</b>				
Defined standard (\$275)	609	33%	7.35	45%
Reduced	150	8%	0.71	4%
Zero	1065	58%	8.36	51%
<b>Gap coverage</b>				
Generics and branded	1	0%	0.00	0%
Generics only	528	29%	1.20	7%
None	1295	71%	15.22	93%

Source: Authors' calculations from the Centers for Medicare and Medicaid Services' prescription drug plan landscape file (available at (<http://www.cms.hhs.gov/PrescriptionDrugCovGenIn>)) and June 2008 Part D plan enrollment report (available at (<http://www.cms.hhs.gov/MCRAdvPartDEnrolData/EP>)).

Notes: The table excludes employer-sponsored plans and union plans. National plans serve all 34 prescription drug plan regions (excluding territories). Local plans serve fewer than 30 regions.

Table 3

**Average Part D Premiums, Unweighted and Weighted, 2006–2008**

	<i>Average premiums unweighted</i>			<i>Average premiums weighted by enrollment</i>		
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
	<b>All plans</b>	\$37.43	\$36.81	\$40.02	\$26.04	\$27.39
<b>Basic coverage</b>	\$33.11	\$28.79	\$30.14	\$24.16	\$24.05	\$26.79
Defined standard	\$25.86	\$32.08	\$31.77	\$15.82	\$17.88	\$23.90
Actuarially equivalent	\$33.13	\$24.88	\$26.18	\$28.74	\$21.04	\$24.72
Basic alternative	\$35.60	\$29.30	\$31.39	\$26.57	\$27.49	\$29.37
<b>Enhanced coverage</b>	\$43.27	\$45.66	\$49.63	\$35.35	\$40.42	\$41.07
<b>Base beneficiary premium</b>				\$32.20	\$27.35	\$27.93

Source: Authors' calculations from the Centers for Medicare and Medicaid Services' prescription drug plan landscape file (available at (<http://www.cms.hhs.gov/PrescriptionDrugCovGenIn>)) and plan enrollment reports (available at (<http://www.cms.hhs.gov/MCRAdvPartDEnrolData/EP>)).

can avoid the penalty on the cost of future premiums and switch to a more generous plan later when they require medications.

### **Pharmacy Network and Plan Quality**

Plans vary in the pharmacy networks they offer. A “high-quality” plan might have almost every pharmacy in the region ready to dispense prescriptions. Another might limit its distribution network to one large chain. Nearly all plans have a mail order option, and on average, plans offer lower prices for prescriptions delivered by mail.

Enrollees will also evaluate the quality of the administration of the plan. Is it easy to sign up for? How well does it handle members’ inquiries at its call centers? Does it carry a trustworthy brand name? At the start of the program, Medicare recipients had little information on plan quality other than the plan sponsor’s reputation. There is some suggestive evidence that this mattered at the start of the program: the lone national AARP plan administered by UnitedHealth Group had the highest market share (20 percent) in 2006. But beginning with the 2008 open enrollment period, beneficiaries could access 2007 plan performance ratings via the “Medicare Prescription Drug Plan Finder” website. The ratings cover customer service, the ease of filling prescriptions, and the information provided on drug coverage and costs. AARP’s 2007 plan performance was deemed “very good” and it continued to lead the market in 2008.

### **Price of Medications**

Every basic Part D plan is actuarially equivalent in offering an average of \$1,676 worth of coverage along with catastrophic coverage beyond the “doughnut hole.” All else equal, however, a plan with lower drug prices will provide more generous coverage. The drug prices that plans set are not regulated by the government, so the price of a “covered” drug can vary substantially across plans. A Medicare recipient can use the Medicare Plan Finder website for this stage of the choice process. After entering a zip code, enrollees enter the list of medications they expect to take in the coming year. The website then displays the estimated annual cost of medications and premiums, according to the cost-sharing rules of each plan serving the region. The cost-sharing rules matter. For example, an enrollee who takes just one inexpensive treatment might have to pay the full cost out of pocket in a plan with a deductible, while that enrollee might pay only a small fraction or nothing in a plan with no deductible.

### **Formularies and Competition among Branded Drugs**

Each Part D plan has a formulary, which details the patient’s out-of-pocket cost for each drug along with the rules the patient or physician must follow to obtain a drug. All states view a brand-name drug and its FDA-approved generic as sufficiently close substitutes that they allow a pharmacist to switch between the two without consulting with a physician. Insurers also view these drugs as very close substitutes, and the formulary of virtually every plan requires—or creates strong financial incentives for—an enrollee to purchase a generic when it is available.

A formulary also defines therapeutic submarkets. Suppose there are several patented drugs in a therapeutic class, but no generics. These brands may be close substitutes for one another in the sense that they ameliorate the same problem—high cholesterol, for example—but they may differ in their side-effects or in other ways. The prescription drug plan can negotiate with the manufacturers of drugs it considers very similar to determine which one will offer the best deal for its enrollees. The plan is well-positioned to take the lead in such negotiations. Patients will frequently not know enough about clinical pharmacology to evaluate which drugs are appropriate substitutes for ones they are currently taking. While physicians typically know this, they are uninformed about the prices a prescription drug plan can negotiate for each drug. Thus, the plan can evaluate tradeoffs between price and quality that neither the physician nor the Medicare recipient can easily make. Moreover, because the plan is affecting the consumption of a large group of consumers, it has the clout to negotiate with a drug manufacturer in a way that an individual physician or consumer cannot.

A “three-tier” system is the most common way Part D plans organize their formulary. Generics occupy the lowest tier and have the lowest out-of-pocket payment. “Preferred brands,” which may have offered a price break to the plan sponsor, are on tier two with a somewhat higher cost to the enrollee. Brands that the plan sponsor wants to discourage the use of are on tier three and have the highest relative out-of-pocket payments. Often, there is a specialty fourth tier containing very expensive unique and injectable drugs. Additional tools beyond price that a formulary may use include prior authorization and step therapy. Prior authorization requires a physician to obtain permission from the plan before prescribing the drug. Step therapy requires a patient to try a cheaper drug and find it ineffective before moving to a more expensive one. Lastly, a drug can simply be off the formulary; the plan does not cover it at all. The purpose of these rules and price differences is to drive demand toward drugs on the lowest possible tier (Grabowski and Mullins, 1997).

To develop a sense of how choices between brand-name drugs with different formulary placement might play out, we analyzed three prominent 2007 stand-alone prescription drug plans in California: the AARP MedicareRX Saver plan from UnitedHealth Group, the WellCare Signature Basic Alternative plan, and the Sierra Rx Basic Alternative plan, which had 21, 9, and 8 percent of the regional market, respectively. We focused on the 20 top-selling brand-name, cholesterol-reducing drugs known as statins and established whether they were preferred, nonpreferred, or off-formulary in these three plans.<sup>4</sup> The formulary status and the prices of each drug vary substantially across plans. In the AARP plan, for example, five of the 20

<sup>4</sup> This kind of information is readily available from the Medicare.gov “Plan Finder” website. We collected this data in May 2007. In order of 2006 sales rank according to the market research firm IMS, the 20 drugs we investigated are Lipitor, Zocor, Zetia, Crestor, Tricor, Pravachol, Niaspan ER, Lescol XL, Welchol, Lescol, Altoprev ER, Antara, Colestid, Triglide, Lofibra, Mevacor, Lopid, Questran, Prevalite, and Questran Light.

drugs were preferred, eight were nonpreferred, and the other seven were off-formulary. In the WellCare plan, three were preferred, one nonpreferred, and 16 off-formulary. In the Sierra plan, four were preferred, and 16 were off-formulary. Pricing was consistent with formulary placement, that is, drugs on lower tiers relative to the other plans were cheaper. There was little overlap between these plans in formulary placement; for example, only one drug (Zetia) was on the preferred tier in all three plans. This latter finding suggests that statin manufacturers were selective in providing discounts to these plans in exchange for better (or exclusive) formulary placement.

Tiered cost sharing may not change the total number of prescriptions filled, but drives demand toward generic and preferred brand drugs. The ability to move market share between therapeutic substitutes that have market power (for example, patent protection) allows plans to obtain discounts, reducing the cost per branded prescription. This mechanism may also allow the plan to benefit consumers by “guiding” them to cheaper, therapeutically equivalent drugs.

### **Complexity**

Clearly, each Medicare recipient faces a complex task in choosing a prescription drug plan. The factors that a Medicare recipient is likely to consider include the expected out-of-pocket cost of each plan, the formulary status of drugs currently consumed, and the reputation of the plan sponsor. The dimensionality of the choice problem rises according to the number of drugs used—the average elderly person uses five different prescription drugs (Neuman et al., 2007). Moreover, a forward-looking enrollee would not only consider the coverage of drugs currently consumed, but also the plan’s formulary breadth given the risk of an adverse health shock in the future that could lead to additional drugs required.<sup>5</sup> The expected value of a plan’s formulary breadth is a difficult calculation to perform: it requires knowledge of many drug prices, their associated cost sharing, the likelihood of different types of health shocks, and the likely effectiveness of each drug for each health shock.

Behavioral economics research documents that a complicated choice environment, such as Part D, can easily overwhelm the typical consumer.<sup>6</sup> Frank and Newhouse (2007) believe this complexity has discouraged enrollment and likely led to suboptimal choices that are not cost effective, especially among poor and less-educated beneficiaries and those with cognitive impairments. Indeed, 10 percent of eligible beneficiaries both failed to enroll in any Part D plan and had no

<sup>5</sup> Recent research by Domino, Stearns, Norton, and Yeh (2008) indicates considerable switching of drugs among Medicare recipients; thus, focusing only on drugs currently consumed leads to suboptimal choices.

<sup>6</sup> See, for example, an experimental study by Choi, Laibson, and Martin (2008), who find that individuals did not minimize mutual fund administrative costs even though it was in their interest to do so. On the other hand, recent research by Aguiar and Hurst (2005) indicates that after retirement individuals have more time than other adults to spend on cost-reducing search. Thus, many Medicare recipients may have sufficient time to shop for a Part D plan.

other source of prescription drug coverage in 2008, with a recent study suggesting that most of this group would benefit from enrollment in Part D (Heiss, McFadden, and Winter, 2007). Moreover, a recent experimental study by Kling, Mullainathan, Shafir, Vermeulen, and Wrobel (2008) finds a significant increase in plan switching when Part D recipients are provided with personalized information on the cost of alternative plans. Because this information was already publicly available, these findings suggest that many Medicare recipients are not obtaining the information that they need to make the best choice.

## **The Sponsor's Problem**

Medicare Part D is a complicated and ambitious program that was designed to promote competition between private insurers in the delivery of a prescription drug benefit while simultaneously addressing the problems of moral hazard and adverse selection that affect the equity and efficiency of most social insurance programs. To reduce moral hazard, the program seeks to have enrollees face the true marginal cost<sup>7</sup> of the differences in prices between these prescription drug plans—while subsidizing the insurance purchases of enrollees at the same time. To reduce plans' incentives to select the most profitable (that is, the least costly) Medicare recipients, Part D provides additional subsidies for those recipients with high expected costs and with high actual costs. In this section, we discuss more specifically how Part D influences firm incentives.

### **From the Bid to the Monthly Premium**

Firms interested in sponsoring a stand-alone prescription drug plan must first decide which of the 34 regions to serve. They must then submit a "bid" to the Centers for Medicare and Medicaid Services, which represents the amount of revenue the plan expects to need to provide a typical Part D enrollee with basic coverage after subtracting expected cost-sharing payments by enrollees and government catastrophic and low-income subsidies. This revenue will cover drug costs, administrative costs, and a desired profit margin. The sponsor of an enhanced plan must submit a bid that covers only the costs of running the "basic" aspects of the plan, and not the costs of the enhanced features. The federal government is permitted to review each bid to ensure it is reasonable and negotiate with the plan sponsor if deemed otherwise.

There are a number of steps from the plan bid to the calculation of the actual monthly premium. Once all bids are approved, the Centers for Medicare and Medicaid Services calculates a "national average bid," weighted by each plan's share of the total population enrolled in Part D. Bids were equally weighted in the first year of the program to account for the lack of enrollment data. A blended method

<sup>7</sup> Of course, part of the variation in premiums across plans will reflect the composition of enrollees.

was adopted in 2007 and 2008, however, as a statutorily defined calculation would have produced a national average bid in these years well below the 2006 level and thus substantially lower subsidies and higher premiums on average.

The Centers for Medicare and Medicaid Services then multiplies this national average bid by a certain percentage that is determined each year (34.7 percent in 2008) to arrive at the “base beneficiary premium.”<sup>8</sup> In 2008, the national average bid and the base beneficiary premium were \$80.52 and \$27.93 per month, respectively. This base beneficiary premium is then modified to obtain the actual amount that enrollees pay each month. If a plan had bid \$100.52—that is, \$20 more than the average plan—its actual monthly premium would be \$20 more than the base premium, or \$47.93. Likewise, if a plan bid \$20 below the average, the premium for that plan would be only \$7.93 (premiums cannot fall below zero). This causes the enrollee to bear the full cost on the margin of selecting a more or less generous plan, which is an important design feature of Part D.

A firm does not have the incentive to place a bid below its expected costs, because it will be reimbursed from all sources only up to its bid. Thus, underbidding will simply cause the plan to lose money that year. Conversely, a bid above costs will earn the plan a higher profit margin per enrollee, but the plan risks losing market share due to its higher premium.

### **Policies to Minimize Risk Selection**

When designing Medicare Part D, policymakers knew that the program would be unlikely to succeed if competition among insurers revolved around attracting healthy enrollees and avoiding costly ones. Relative to all recipients in Part D, those with three or more chronic conditions consume 25 percent more prescription drugs on average and are 40 percent more likely to spend over \$300 per month procuring them (Neuman et al., 2007). This high concentration of outlays means that a plan sponsor’s return to achieving a favorable risk profile is significant. Thus, the Centers for Medicare and Medicaid Services incorporated various policies to reduce the returns to such socially wasteful competition.

One of the most important policies for harnessing competition among Part D plans is risk adjustment. The Part D risk adjustment system adjusts plan payments for each enrollee by the *expected* variation in prescription drug spending, using a combination of demographic and health risk factors. Specifically, the system takes into account the enrollee’s age, sex, low-income subsidy eligibility, institutional status (for example, living in a nursing home), and health status. Health is scored by counting the disease categories the enrollee falls into (based on other Medicare claims) such as diabetes, heart disease, or arthritis. Each characteristic is scored a number of points, and a total is created for the enrollee, with higher points

<sup>8</sup> The Part D legislation requires that program costs be subsidized 74.5 percent by the federal government with 25.5 percent paid by enrollees who do not qualify for low-income subsidies. Since most costs above the catastrophic threshold are covered by federal subsidies, enrollees are responsible for more than 25.5 percent of the bid amount in order to pay 25.5 percent of total costs.

Table 4

**Sample Risk Adjustment Calculation for Hypothetical Enrollee**

(75 year-old woman with diabetes and hypertension; using 2006 risk factors)

<b>Age/sex factor:</b>	
Female, 75-79	0.4343
<b>Disease factors:</b>	
Diabetes without complication	0.1898
Hypertensive heart disease or hypertension	0.2225
<b>Sum of factors</b>	<b>0.8466</b>
x Low-income multiplier	1.08
<b>Final factor</b>	<b>0.9143</b>

Source: Merlis (2007, table 5).

Note: See text for details.

measuring higher projected costs. Some points are additive (like those for diseases) and some multiplicative (for example, being eligible for a low-income subsidy multiplies the point total by 1.08).

Table 4 illustrates the risk adjustment calculation for a hypothetical 75 year-old woman with diabetes and hypertension who is eligible for full Medicaid benefits, using the risk factors in effect for 2006 (Centers for Medicare and Medicaid Services, 2005; adapted from Merlis, 2007). The age/sex and disease factors are aggregated to give a preliminary risk factor of 0.8466, which is then multiplied by the low-income factor for full-benefit Medicaid eligibles (1.08) to result in a final risk factor of 0.9143. The net government subsidy is the bid times the risk adjustment factor less the premium the enrollee pays. Notice that each enrollee pays a premium that is not adjusted for that enrollee's own risk. After this process, the plan's bid should reflect its expected cost of an enrollee with a risk factor of 1.000, thereby protecting it from the need to calculate the distributions of risk in the population or to forecast what distribution it might draw.

The success of the risk adjustment system depends on its ability to capture enough of the predictable variation in per-enrollee outlays through adjustment of the federal subsidy to make expenditures on risk selection unprofitable. Currently, the system offsets approximately one-quarter of the variance in prescription drug spending per year among the elderly, but could offset at least half if past prescription drug usage were included in the formula (Wrobel, Doshi, Stuart, and Briesacher, 2003). This limited risk adjustment is a weakness in Part D. After the first year of operation, prescription drug plans presumably knew more than the government about expected costs for their enrollees. As more data accumulates, some plans may attempt to select enrollees advantageously. Government statisticians who create the risk factors will try to keep up—but the plans will have better data.

Another important way in which Part D reduces plans' incentives to select the healthiest patients is through an 80 percent subsidy for all costs above the cata-

strophic threshold, which will reduce the costs to the plan of enrolling an especially sick beneficiary.

### **Risks of Participating in a New Industry**

Plan sponsors faced considerable business risk in the first few years of Part D given the complexity of the program and the difficulty in forecasting the number and the average characteristics of their enrollees. To address this issue, the federal government shares in each plan's overall profits or losses if they fall outside of specific "risk corridors."

To determine this, the Centers for Medicare and Medicaid Services first calculates a target drug expenditure for each plan, equal to the sum of federal subsidies and enrollee premiums less administrative costs. If the plan's total spending for standard drug benefits diverges from the target by 5 percent or more, the government shares the loss or gain. In the case of a 5 to 10 percent deviation, the Centers for Medicare and Medicaid Services pays half of the loss or recoups half of the gain. If the difference is more than 10 percent, Medicare absorbs 80 percent of the loss or gain.

Prescription drug plans are also allowed to develop a specialty tier containing very expensive unique and injectable drugs, such as genomic and biotech products, with freedom from the normal rules governing formulary tier exceptions, and to maintain high enrollee cost sharing at or actuarially equal to 25 percent coinsurance before the initial coverage limit. By mandating a sustained contribution rate by the enrollee, this decision protects plans from the risk of bearing a significant share of specialty drug spending.

With these rules in place, Part D plans currently face limited uncertainty about their costs. The government both insures plans (paying 80 percent of costs above a threshold) for the risk that certain individuals are very expensive to insure and for the aggregate risk that their populations are expensive to insure (again paying 80 percent of costs above a threshold). These rules have helped to encourage private-sector participation in the early years of the plan. However, while both types of subsidies reduce plan risk, they also reduce incentives to operate efficiently and to control costs.

### **Can Part D Plans Influence Pharmaceutical Prices?**

The designers of Part D hoped that competition would hold down the program costs: in particular, they envisioned an intertwined pattern of competition involving both drug manufacturers and insurance plans. One important dimension of this vision was competition between drug manufacturers for preferred placement of its products on each plans' formulary. Typically, whichever drug manufacturer—out of those producing therapeutic substitutes—offers the lowest

(quality-adjusted) price to an insurance plan gets preferential placement for its product, while its competitors lose sales. Manufacturers can offer discounts for particular formulary placement (having a certain drug on a preferred tier) or exclusive formulary placement (for example, being the only statin on a preferred tier). Manufacturers can also offer greater discounts for higher realized market share: for example, the manufacturer could offer an additional 10 percent price reduction for 40 percent market share in the class.

Designing incentives and procedures that allow the plan to move market share in a way that is acceptable to enrollees and physicians is a valuable skill for a prescription drug plan. The more effectively a plan moves market share for favored products—either due to formulary design, utilization management techniques, bigger differences between preferred and nonpreferred brands, better rules for usage of expensive drugs, or other rules—the lower its cost of acquiring drugs will be relative to other plans.

However, moving market share is difficult for a prescription drug plan. After all, physicians typically see dozens of patients who belong to many different plans, and the physicians cannot possibly keep track of all the associated formularies. For this reason, the plans typically focus on providing incentives to the patient and the pharmacist. The hope is that a patient taking a nonpreferred drug might ask her physician about alternative drugs that are less expensive, or the pharmacist might suggest alternatives since the pharmacist can see the formulary rules and understands both prices and substitutability. The plan might additionally ensure the pharmacy earns a higher profit from dispensing the preferred drug.

Recent research suggests that Part D consumers are likely to respond to demand-side incentives aimed at moving market share. Chandra, Gruber, and McKnight (2007) analyzed a policy change that raised cost sharing for retired public employees in California and found the sample population to be quite price elastic in their demand for all types of drugs, including those that control acute life-threatening and chronic conditions. The implied price elasticities appear to greatly exceed those observed in the famous RAND Health Insurance Experiment, suggesting that prescription drug plans could steer their enrollees' demand using financial incentives.

Duggan and Scott Morton (2008) examine the question of whether the prescription drug plans are elastic demanders by analyzing national price and quantity data for a sample of more than 500 large-sales branded drugs that have varying levels of sales to elderly Americans. The paper exploits variation across drugs in the pre-Part D "Medicare market share" to investigate the effect of the program on the average price and utilization of branded treatments. They find that Part D caused a significant decline in average pharmaceutical prices, relative to the market trend. The magnitude of the effect is substantial, with a lower bound of 13 percent. This result suggests that moving consumers from standard cash-paying status into a prescription drug plan with an active formulary has an economically meaningful impact on drug prices.

### When There are Fewer Therapeutic Substitutes

A prescription drug plan has the most leverage to steer demand toward products on which price concessions are offered when there is potential competition. However, the first drugs to be developed in a new class of drugs and those that offer unique therapeutic advantages for elderly users may present a financial problem for Part D. The monopoly power these types of drugs enjoy, combined with insurance that covers a high percentage of the consumer's cost, means that manufacturers of such products are in a position to set a price higher than a monopolist selling to an uninsured market, and still sell the same quantity (Frank and Newhouse, 2007). This feature of Part D is likely to receive scrutiny if, when the next breakthrough drug arrives on the market, its price is high. Prescription drug plans may then be required to place it on their formularies and set a copayment. A similar problem is present if there are just one or two treatments in an existing class given that plans would usually be required to include both on their formularies.

A second issue is that the Centers for Medicare and Medicaid Services requires plans to cover at least two drugs in every therapeutic class and "all or substantially all" drugs in six "protected classes."<sup>9</sup> These protected classes are immunosuppressants, antidepressants, antipsychotics, anticonvulsants, HIV antiretrovirals, and antineoplastics (cancer). Moreover, plans cannot use utilization management techniques (like requirements for prior authorization or step therapy) on beneficiaries stabilized on a drug regimen in one or more of these six categories prior to enrollment in Part D, unless they can demonstrate extraordinary circumstances. Plans may however, use these techniques to manage therapy for beneficiaries who *begin* treatment with drugs in these categories other than antiretrovirals. By removing the ability to exclude or manage certain drugs, these rules remove some of the plan's ability to shift market share and therefore obtain low prices. Additionally, loosely speaking, drugs in these six categories tend to be weaker substitutes for one another than the "average" drug. For example, a person often develops resistance to an HIV drug over time, and some tumors respond to some chemotherapy drugs and not others. Thus, we might expect that the prescription drug plan will be less able to use its tools to obtain low prices in these classes than in others.

Duggan and Scott Morton (2008), shed some light on this potential problem also. They find that brands with few therapeutic substitutes and high sales to Part D eligibles do not experience the price decline relative to trend evidenced by drugs with several substitutes, indicating that the role of a plan's formulary in stimulating competition and lowering prices is important. One might expect the same pattern

<sup>9</sup> The two-drug requirement does not apply when only one drug is available for a particular category or class, or when only two drugs are available and one is clinically superior. "Substantially all" means that all drugs in the protected classes are expected to be included in plan formularies, with exceptions for multi-source brands of identical molecular structure, extended release products when an immediate-release product is included, products that have the same active ingredient, and dosage forms that do not provide a unique route of administration.

for protected classes given that all drugs in these categories must be covered, and indeed the authors' estimates are qualitatively similar but statistically insignificant.

### **Role of Search**

Copayments will differ substantially across plans both for long-term maintenance drugs and for curative, acute-care drugs, as will be discussed below. Consumers can easily search for the lowest out-of-pocket cost plan that offers a particular set of drugs by using the Plan Finder, whereas many acute-care drugs are consumed with little advance warning. Thus, we might expect that prescription drug plans work harder to obtain low prices on maintenance medications than others. There is currently little evidence on this point for Part D plans, though previous evidence on retail price dispersion across pharmacies is consistent with this (Sorenson, 2000).

To investigate this issue, we collected evidence on a sample of 821 drugs in the California region in May 2007, using the Plan Finder website: 569 brand-name and 253 generic. The sample included the top-selling drugs in therapeutic categories with a high concentration of spending by the elderly, based on the 2004 Medical Expenditure Panel Survey. We collected evidence on both acute-care and maintenance drugs. We found that for brand-name drugs, the average price of acute-care drugs from the preferred network pharmacy was \$491, while the average price of maintenance drugs was \$114. However, when looking at generic drugs, essentially no price difference existed between acute-care and maintenance drugs. Of course, this finding is far from conclusive as it could be driven by the nature of the classes of drugs in each group. This question remains an important area for future research.

### **Enrollees without Financial Incentives**

Prescription drug plans serve many enrollees for whom it is difficult to provide incentives to move market share. Medicare Part D replaced Medicaid as the primary source of prescription drug coverage for enrollees eligible for both programs, individuals known as "dual eligibles." "Duals" are eligible for Medicare because they are elderly or on the Social Security Disability Insurance program, and eligible for Medicaid because they are sufficiently poor. Table 5 provides enrollment information for Medicare beneficiaries with prescription drug coverage in Part D, including information on insurance from other sources. Unless a Medicare recipient who was also eligible for Medicaid made an active choice, that recipient was randomly assigned to one of the low-cost plans in the relevant region. The premium paid by the dual eligible would be zero for any plan with a premium at or below the enrollment-weighted regional average. If such a dual eligible enrollee wanted to choose a more expensive plan, the enrollee would pay the difference between that plan's premium and the lesser of the regional average premium or the amount of the plan's premium attributable to basic benefits.

Beneficiaries with incomes below 150 percent of poverty (\$15,600 for individuals; \$21,000 for couples in 2008) and modest assets (\$11,990 for individuals;

*Table 5*  
**Medicare Beneficiaries with Prescription Drug Coverage, 2008**

<i>Description</i>	<i>Beneficiaries (millions)</i>
<b>Medicare beneficiaries eligible for Part D</b>	<b>44.20</b>
<b>Medicare Part D</b>	<b>25.40</b>
Stand-alone prescription drug plan	
Non-dual-eligibles <sup>a</sup>	12.09 (2.6)
Dual-eligibles	5.30
Medicare Advantage with Drug Coverage <sup>b</sup>	
Non-dual-eligibles <sup>a</sup>	6.71 (.15)
Dual-eligibles	1.30
<b>Medicare retiree drug subsidy (RDS)</b>	<b>6.66</b>
<b>Other drug coverage</b>	<b>7.53</b>
TRICARE retiree coverage	0.90
FEHBP retiree coverage	1.05
Veterans Affairs (VA) coverage	1.59
Active workers with Medicare secondary payer	1.20
Other retiree coverage, not enrolled in RDS	1.54
State pharmaceutical assistance programs	0.02
Indian Health Service coverage	0.03
Medigap and other individual insurance	0.21
Multiple sources of creditable coverage <sup>c</sup>	0.69
Other sources <sup>d</sup>	0.30
<b>Total Medicare beneficiaries with drug coverage</b>	<b>39.59</b>

*Source:* Centers for Medicare and Medicaid Services' 2008 Enrollment Information, available at (<http://www.cms.hhs.gov/PrescriptionDrugCovGenIn>).

*Note:* Dual eligibles are entitled to both Medicare Part D and Medicaid. FEHBP is Federal Employees Health Benefits Program. TRICARE is the managed care component of the United States Department of Defense Military Health System.

<sup>a</sup> Parentheses denotes number of non-dual-eligibles receiving the low-income subsidy.

<sup>b</sup> Includes beneficiaries enrolled in other Medicare health plan types with prescription drug coverage (.38 million in 2008): Demo; 1876/1833 Cost; Program of All Inclusive Care for the Elderly (PACE); chronic care pilots.

<sup>c</sup> Includes beneficiaries with more than one of the following: TRICARE, FEHBP, VA, or Medicare as secondary payer.

<sup>d</sup> Includes FEHBP spouses and dependents.

\$23,970 for couples) receive assistance in several ways. All recipients of the low-income subsidy have a zero or reduced deductible and face smaller copayments or coinsurance. Moreover, there is no coverage gap; instead, enrollees continue with cost sharing until they reach the out-of-pocket threshold. "Full subsidy" enrollees, including duals, pay no premium, have very low copayments for drugs below the catastrophic threshold (\$1.05 for generics or preferred drugs, or \$3 all others), and pay nothing for expenditures above the catastrophic threshold. "Partial subsidy" enrollees face standard cost sharing during catastrophic coverage and a reduced premium phased out on a sliding-scale basis. Dual eligibles account for half of those

eligible for the low-income subsidy and one-fourth of all beneficiaries enrolled in Part D.

Since Part D enrollees with low-income subsidies pay little or nothing in terms of cost sharing, their utilization cannot easily be controlled through demand-side financial incentives. Instead, plans might seek to influence their choices through requirements for prior authorization for certain drugs, step therapy, or a more restrictive formulary.

### **How Subsidies Reduce Incentives to Create Competition**

Dual eligibles are on average in worse health and thus more expensive to insure compared to the average Medicare recipient. They are also more likely to suffer from cognitive impairment and psychoses, and they have higher rates of significant chronic illnesses such as HIV/AIDS, diabetes, pulmonary disease, stroke, and Alzheimer's. Total healthcare spending—which includes Medicare, Medicaid, supplemental insurance, and out-of-pocket spending across all payers—for duals averaged about \$23,554 per person in 2005, more than twice the amount for all other Medicare beneficiaries (MedPAC, 2007a).

Recall that a prescription drug plan is subsidized 80 percent for expenditures on enrollees who exceed the catastrophic threshold. The high rates of subsidy for the plan significantly dampen the plan's incentives to put maximal pricing pressure on manufacturers given that each additional dollar of spending is paid primarily by Medicare, not the plan or the patient. This illustrates the tradeoff between reducing the incentive to select healthy patients (adverse selection) and increasing the incentive to seek low prices (cost containment).

## **Issues Going Forward**

### **Formulary Manipulation?**

The role of adverse selection in Medicare Part D is complex because of the variety of subsidies plans receive for the very sick. But broadly speaking, any plan offering more generous coverage is at risk of attracting the sicker enrollees, who will tend to be unprofitable. For example, it was widely reported that enhanced plans that offered brand coverage in the doughnut hole in 2006 attracted expensive enrollees, and virtually all eliminated that feature for 2008 (Alonso-Zaldivar, 2006). On the other hand, a plan that enrolls Medicare recipients with expenditures below the deductible or with relatively low spending and charges these recipients a positive premium will make profits.

One way for plans to attract healthier patients is to select their formularies with care. For example, if plans were allowed to restrict their coverage in classes of drugs differentially consumed by high-cost beneficiaries, they could use this tool to "cream-skim" a relatively high number of low-cost patients. However, one study of 2006 plan formularies did not find a pattern of more restrictive coverage in plans eligible to those with low-income subsidies. Indeed, the median number of drugs

listed by plans available to those with low-income subsidies was slightly greater than that for basic plans overall (MedPAC, 2007a). Another study of plan formularies available to those with low-income subsidies in three prescription drug plan regions found the least generous formulary covers between 72 and 77 of the top 100 most commonly used drugs by duals, while the median plan covers just over 90 drugs, with the vast majority of these drugs placed on preferred tiers (MedPAC, 2007b). Moreover, plans have not been complaining about how expensive the dual population is to cover, which leads us to believe that the government subsidy is causing duals to be either neutral or profitable for plans. Based on this limited evidence from the first few years of the program, we are provisionally concluding that the adverse selection issue appears not to be a significant problem at present.

Of course, one powerful reason why formularies are not being manipulated in this way may be the government oversight of formulary choices. The government imposes minimum formulary requirements and also provides a safe harbor for plans that utilize a therapeutic classification system consistent with guidelines published by the United States Pharmacopeia (an independent organization which serves as the official agency for setting standards on quality and classification of drugs). In addition, the Centers for Medicare and Medicaid Services has the authority to review the specific drugs, tiering, and utilization management strategies employed in each Part D plan formulary to ensure that they are not designed to drive away enrollees with particular conditions.

The current structure of Part D will likely perpetuate the need for continued scrutiny of plan formularies. Even if the Centers for Medicare and Medicaid Services designs a risk adjustment system that more accurately predicts costs, it cannot totally eliminate the incentives of prescription drug plans to design their formularies to discourage enrollment of beneficiaries with high expected levels of prescription drug spending or encourage plan termination by enrollees with high actual costs.

### **A Handout for the Drug Companies?**

Given that Part D is now subsidizing the cost of medications for Medicare recipients by 75 percent, it is perhaps not surprising that utilization of drugs in this group has increased. For example, Lichtenberg and Sun (2007) and Yin et al. (2007) investigate the effect of Part D on out-of-pocket costs and drug utilization with data on prescriptions filled by Walgreen's during the period from late 2004 to early 2007. Both studies estimate that Part D reduced the out-of-pocket costs of drugs consumed by the elderly and led to a sizeable increase in utilization.

A 2007 analysis commissioned by Pharma (2007) looked at the impact of Part D on patient out-of-pocket costs and utilization for the previously uninsured. For this study, pharmacy transaction records from Verispan (a major provider of patient-centric, longitudinal healthcare data) were obtained for all patients age 65 and older for the period January 1, 2005, through December 31, 2006. The study found that the average number of prescriptions filled each month for the previously uninsured almost doubled, with patients eligible for low-income subsidies

experiencing larger increases. Out-of-pocket cost savings were also sizeable, with the cost per day of supply falling by 69 percent.

In combination with the finding of lower prices in Duggan and Scott Morton (2008), this suggests Part D is providing more drugs at lower prices to Medicare recipients. Since the marginal costs of drugs are very low, this is in certain respects a socially efficient change. (Of course, a full welfare calculation would need to account for factors like the deadweight loss associated with the tax revenue raised and the effect on firms' innovation incentives.) In any case, it appears that at least in 2006 and 2007, concerns about the Part D program being mainly a handout to the pharmaceutical industry have not been realized.

From a broader point of view, the issue is not only how Part D affects drug spending, but also how it affects overall healthcare spending. Because stand-alone prescription drug plans are not vertically integrated healthcare providers like the Medicare Advantage plans described above, inefficient treatment patterns that save on drug costs but increase other healthcare costs might be encouraged by the stand-alone plans (Goldman and Joyce, 2008). In contrast, a Medicare Advantage drug plan would be willing to spend more on the pharmacy benefit if it reduced subsequent medical costs by more. Therefore, a stand-alone prescription drug plan may be a less efficient way to deliver a pharmacy benefit when considering healthcare costs as a whole. This issue suggests an important direction for future research.

### **Too Confusing?**

The results from recent research suggest that most of the 4.6 million Medicare recipients without prescription drug coverage would benefit from enrollment in Part D (Heiss, McFadden, and Winter, 2007). The complexity of the program is one possible reason that these individuals are choosing not to enroll. Research by these same authors and by Kling, Mullainathan, Shafir, Vermeulen, and Wrobel (2008) further indicates that relatively many Part D recipients are making suboptimal plan choices, causing them to spend more out of pocket than is necessary. The complexity of the choice problem they face could be driving these poor choices, which strongly suggests that simplification of the choice-set and increased outreach to Medicare recipients by the Centers for Medicare and Medicaid Services and other organizations would save Medicare recipients time and money (Hoadley, 2008).

Even without more simplification or outreach, it seems plausible that Medicare recipients will make better choices as they accumulate more experience with Part D. For example, in the first year of the program, the Kling et al. study found that Medicare recipients paid much more attention to the monthly premium than to the (less transparent) out-of-pocket costs for their current and potential future drugs. A year or two of experience with Part D may increase the salience of the cost-sharing arrangements for each drug and allow Medicare recipients both to reduce their out-of-pocket expenditures and to choose a formulary more tailored to their own healthcare needs.

### **The Effect on the Federal Budget**

Even prior to the enactment of Medicare Part D, federal spending on health care was increasing significantly more rapidly than GDP and was creating a strain on the federal budget. For example, from 2000 to 2005, inflation-adjusted spending by the federal government on Medicare increased by 5.4 percent per year versus real GDP growth of just 2.3 percent per year. This difference accelerated in 2006 with the introduction of Part D, with Medicare spending increasing by 15.0 percent in just one year to reach \$354 billion (Medicare Trustees, 2008). The Congressional Budget Office (2007) forecasts that Medicare spending as a fraction of GDP will more than double in the next two decades as per capita healthcare costs continue to outpace income growth and as the baby boom generation ages. This expenditure growth will arguably represent the most important challenge in domestic policy-making in the decades ahead. Thus while the addition of Part D may have improved the quality of health care for Medicare recipients, it has substantially worsened the outlook for the federal budget.

### **Conclusion**

We view the first two and a half years of operation for Medicare Part D as relatively successful overall, given the challenges involved. The market for Part D plans has spawned many options for consumers and the fraction of Medicare recipients with prescription drug coverage has increased substantially. Competition among plans is driving premiums down to levels lower-than-anticipated by policy-makers and sponsors. The prices that plans pay to manufacturers for branded drugs are on average lower than the prices the manufacturers were receiving before the program, and utilization of these treatments has increased.

However, important concerns remain about the program going forward. Recent research strongly suggests that many Medicare recipients are making sub-optimal choices, either by not enrolling in Part D or by choosing a suboptimal plan. Additionally, while the program has on average reduced pharmaceutical prices, it has possibly increased prices for treatments without good substitutes. Another concern is that, as plans accumulate more information on utilization by their own enrollees, they may shift their formularies to discourage re-enrollment by the least profitable patients. The creation of this program has substantially worsened the long-term fiscal outlook for the federal government, with overall Medicare spending approximately ten percent greater overall than it would be without Part D. Finally, the administrative expenses (including sales costs and plan profits) of the Part D program are almost six times higher than the administrative expenses of traditional Medicare, so this program is very expensive to administer (Committee on Oversight and Government Reform, 2007).

A number of questions about Part D remain unanswered and represent important topics for future research. Perhaps most importantly, there is scant evidence regarding the effect of Part D on the health or medical expenditure risk

of Medicare recipients. Additionally, more evidence is needed regarding the determinants of Part D enrollment and the selection of a Part D plan. Is the complexity of Part D the main reason for the suboptimal choices or are there other reasons as well? This information would be useful to policymakers as they consider which interventions to launch to help Medicare recipients optimize in this complicated choice environment.

■ *We are grateful to Jim Hines, Jeremy Stein, and Timothy Taylor for very helpful comments on an earlier draft. Duggan and Scott Morton also thank the National Science Foundation for supporting this research.*

## References

- Aaron, Henry, Jeanne Lambrew, and Patrick Healy.** 2008. *Reforming Medicare: Options, Trade-offs, and Opportunities*. Brookings Institution Press.
- Aguiar, Mark, and Erik Hurst.** 2005. "Consumption versus Expenditure." *Journal of Political Economy*, 113(5): 919–48.
- Alonso-Zaldivar, Ricardo.** 2006. "The Nation; Insurer Scales Back, Widening Medicare Prescription Gap; the Humana Plan, Used by Many Seniors to Bridge the 'Doughnut Hole,' Will No Longer Pay for Brand-name Drugs." *Los Angeles Times*, November, 29, p. A31.
- Centers for Medicare and Medicaid Services.** 2005. "Part D Payment and Risk Adjustment, Final Part D Risk Adjustment Model." April. [www.cms.hhs.gov/DrugCoverageClaimsData/02\\_RxClaims\\_PaymentRiskAdjustment.asp](http://www.cms.hhs.gov/DrugCoverageClaimsData/02_RxClaims_PaymentRiskAdjustment.asp).
- Centers for Medicare and Medicaid Services.** 2008. "National Health Expenditure Data." May. <http://www.cms.hhs.gov/nationalhealthexpenddata>.
- Chandra, Amitabh, Jonathan Gruber, and Robin McKnight.** 2007. "Patient Cost-Sharing, Hospitalization Offsets, and the Design of Optimal Health Insurance for the Elderly." NBER Working Paper 12972.
- Choi, James, David Laibson, and Brigitte Madrian.** 2008. "Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds." Yale ICF Working Paper 08-14. March.
- Committee on Oversight and Government Reform, Majority Staff.** 2007. "Private Medicare Drug Plans: High Expenses and Low Rebates Increase the Costs of Medicare Drug Coverage." United States House of Representatives, October.
- Congressional Budget Office (CBO).** 2007. "The Long-Term Outlook for Health Care Spending." November. <http://www.cbo.gov/doc.cfm?index=8758>.
- Domino, Marisa, Sally C. Stearns, Edward C. Norton, and Wei-Shi Yeh.** 2008. "Why Using Current Medications to Select a Medicare Part D Plan May Lead to Higher Out-of-Pocket Payments." *Medical Care Research and Review*, 65(1): 114–26.
- Duggan, Mark, and Fiona Scott Morton.** 2006. "The Distortionary Effects of Government Procurement: Evidence for Medicaid Prescription Drug Purchasing." *Quarterly Journal of Economics*, 121(1): 1–30.
- Duggan, Mark, and Fiona Scott Morton.** 2008. "The Effect of Medicare Part D on Pharmaceutical Prices and Utilization." NBER Working Paper 13917.
- Frank, Richard, and Joseph Newhouse.** 2007. "Mending the Medicare Drug Benefit: Improving Consumer Choices and Restructuring Purchasing." The Brookings Institution, Hamilton Project Discussion Paper 2007-03.
- Goldman, Dana, and Geoffrey Joyce.** 2008. "Medicare Part D: A Successful Start with Room for Improvement." *Journal of the American Medical Association*, 299(16): 1954–55.
- Grabowski, Henry, and C. Daniel Mullins.** 1997. "Pharmacy Benefit Management, Cost-Effectiveness Analysis and Drug Formulary Decisions." *Social Science and Medicine*, 45(4): 535–44.

**Heiss, Florian, Daniel McFadden, and Joachim Winter.** 2007. "Mind the Gap! Consumer Perceptions and Choices of Medicare Part D Prescription Drug Plans." NBER Working Paper 13627.

**Hoadley, Jack.** 2008. "Medicare Part D: Simplifying the Program and Improving the Value of Information for Beneficiaries." Commonwealth Fund Issue Brief. [http://www.commonwealthfund.org/publications/publications\\_show.htm?doc\\_id=687820](http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=687820).

**Kling, Jeffery, Sendhil Mullainathan, Eldar Shafir, Lee Vermeulen, and Marian V. Wrobel.** 2008. "Misperception in Choosing Medicare Drug Plans." Unpublished paper, June.

**Lichtenberg, Frank, and Shawn Sun.** 2007. "The Impact of Part D on Prescription Drug Use by the Elderly." *Health Affairs*, 26(6): 1735–44.

**Medicare Payment Advisory Commission (MedPAC).** 2007a. *A Data Book: Healthcare Spending and the Medicare Program*. June.

**Medicare Payment Advisory Commission (MedPAC).** 2007b. "The Role of Beneficiary-Centered Assignment for Medicare Part D." A study conducted by staff from Georgetown University and from NORC at the University of Chicago for the Medicare Payment Advisory Commission. June. [http://www.medpac.gov/documents/June07\\_Bene\\_centered\\_assignment\\_contractor.pdf](http://www.medpac.gov/documents/June07_Bene_centered_assignment_contractor.pdf).

**Medicare Payment Advisory Commission (MedPAC).** 2008. *A Data Book: Healthcare Spending and the Medicare Program*. June.

**Medicare Trustees.** 2008. *2008 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds*. March.

**Merlis, Mark.** 2007. "Medicare Payments and Beneficiary Costs for Prescription Drug Coverage." Issue brief commissioned by the Kaiser Family Foundation. March.

**Neuman, Patricia, Michelle Kitchman Strollo, Stuart Guterman, William H. Rogers, Angela Li, Angie Mae C. Rodday, and Dana Gelb Safran.** 2007. "Medicare Prescription Drug Benefit Progress Report: Findings from a 2006 National Survey of Seniors." *Health Affairs*, 26(5): w630–w643.

**Pharma.** 2007. "Medicare Part D: Assessing the Impact for Beneficiaries without Previous Drug Coverage and Dual Eligibles." September.

**Sorenson, Alan.** 2000. "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs." *Journal of Political Economy*, 108(4): 833–50.

**Wrobel, Marian, Jalpa Doshi, Bruce C. Stuart, and Becky Briesacher.** 2003. "Predictability of Prescription Drug Expenditures for Medicare Beneficiaries." *Health Care Financing Review*, 25(2): 37–46.

**Yin, Wesley, Anirban Basu, James X. Zhang, Atonu Rabbani, David O. Meltzer, and G. Caleb Alexander.** 2008. "The Effect of the Medicare Part D Prescription Benefit on Drug Utilization and Expenditures." *Annals of Internal Medicine*, 148(3): 169–77.