

## **The Impact of Medicare Part D on Social Security Disability Insurance Beneficiaries**

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## 1. Introduction

The Medicare Modernization Act of 2003 created the Medicare Part D program and introduced prescription drug coverage to Medicare beneficiaries. Implemented in 2006, Medicare Part D was intended to increase access to and reduce the financial burden of prescription medications for Medicare beneficiaries. Past work suggests that the program has been at least moderately successful in achieving these aims. Engelhardt and Gruber (2011) estimated that the introduction of Part D increased average prescription drug coverage by about \$525 per aged beneficiary per year and significantly reduced out-of-pocket spending on drugs.<sup>(1)</sup> Other findings were similar, indicating a modest but significant increase in drug utilization and spending.<sup>(2-5)</sup> There was little evidence of a direct effect on beneficiary health, as past studies found little effect of Part D on hospitalization rates or emergency department use.<sup>(6, 7)</sup>

Most of the prior research on the effects of Part D focused exclusively on aged beneficiaries; there have been few studies examining the impact of Part D on those individuals who receive Medicare eligibility because of their enrollment in the Social Security Disability Insurance (SSDI) program. Individuals with disabilities likely have greater demand for prescription medications, but they may struggle to afford them without insurance coverage. Thus, more generous prescription drug coverage could have significant impact on their health if it expands their access to necessary medications. But identifying such an effect could be complicated by the fact that many SSDI beneficiaries are also dually-eligible for state Medicaid coverage. The dual-eligible would have had access to prescription drug coverage from Medicaid prior to the introduction of Part D but their coverage was automatically switched to Part D once the program was introduced.<sup>19</sup>

In this project, we studied how the introduction of Part D affected the outcomes of enrollees in the SSDI program. Using a similar approach to Engelhardt and Gruber (2011), we used data from the Medical Expenditure Panel Survey (MEPS) to estimate trends in prescription drug expenditures, the number of drug fills and hospitalizations for SSDI beneficiaries compared to individuals with private insurance before and after the introduction of Part D. We also compared outcomes for SSDI beneficiaries to Medicare beneficiaries over 65 to assess whether Part D had differential effects in the younger population.

## 2. Data and Methods

We used data from the MEPS, a nationally representative survey on U.S. healthcare combining information from households, individuals, medical providers and employers. Collected and published by the Agency for Healthcare Research and Quality (AHRQ), the MEPS are the most complete, publicly available source of data on health, healthcare utilization and health insurance coverage. The data are based on information from surveys of approximately 12,000 families and 30,000 individuals per year. In addition to demographic and other information about respondents, the data measure healthcare service use across all aspects of care, including

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<sup>19</sup> One study examined the impact of Part D on individuals dually eligible for Medicare and Medicaid, many of whom are disabled.<sup>(8)</sup> However, the analysis was restricted to those age 65+ so it would have excluded any SSDI beneficiaries.

inpatient, outpatient and prescription drugs. Also, the data provide detailed information on respondent's health insurance coverage by source.

Our data came from the Full-Year Consolidated Data Files from the 2001-2009 MEPS. The Consolidated Files combine data from the different components of the MEPS and provide information for the full calendar year. We identified respondents age 18+ with 12 months of Medicare coverage during the year and stratified them according to whether they were above or below age 65.<sup>20</sup> We stratified the under 65 Medicare population according to whether they had any month of Medicaid coverage in the year and referred to those that did as dual-eligible. We excluded the over 65 dual-eligible population because they are more likely to be in a long-term care facility or nursing home. Finally, we identified individuals age 18-64 who had 12 months of coverage from a private health insurer (though not necessarily prescription drug coverage).

We focused on three primary outcome variables: the total dollars spent (from all sources) on prescription medications in the year, the total number of prescriptions filled (including refills) and an indicator for whether the person was hospitalized in the year. We first conducted an unadjusted graphical analysis to compare trends in drug spending, the number of fills and the hospitalizations from 2001-2009 by health insurance status. To adjust for potential differences between individuals that might be correlated with healthcare spending and utilization and differ by insurance status, we used multivariable regression models to estimate the effect of Part D independent of other beneficiary characteristics. These other covariates included age, sex, race, education and income. To control for differences in underlying health, we also included information on the presence of chronic health conditions, measured as ever being diagnosed with heart disease, stroke, emphysema, diabetes or asthma.

We implemented these regression models as “difference-in-differences” regressions that compared the under 65 Medicare beneficiaries separately to under 65, privately insured individuals and to over 65 Medicare beneficiaries. Because the under 65 with private insurance were presumably unaffected by Part D, the first set of regressions were our estimate of the total effect of Part D on outcomes. When we used the over 65 as a control group, this was our estimate of the differential effect of Part D on SSDI beneficiaries. Following Engelhardt and Gruber (2011), we excluded 2006 data from all regressions because it was a transition year for many beneficiaries. We also used the MEPS person weights to account for the survey's complex design structure and included year fixed effects in all models.

### **3. Findings**

We identified 5,438 under 65 Medicare beneficiaries who met the inclusion criteria; 2,827 were Medicare only and 2,611 were dual-eligible. We identified 25,781 single-eligible aged (65+) Medicare beneficiaries and 93,578 privately insured. We hypothesized that there would be an increase in prescription drug spending and utilization among Medicare beneficiaries

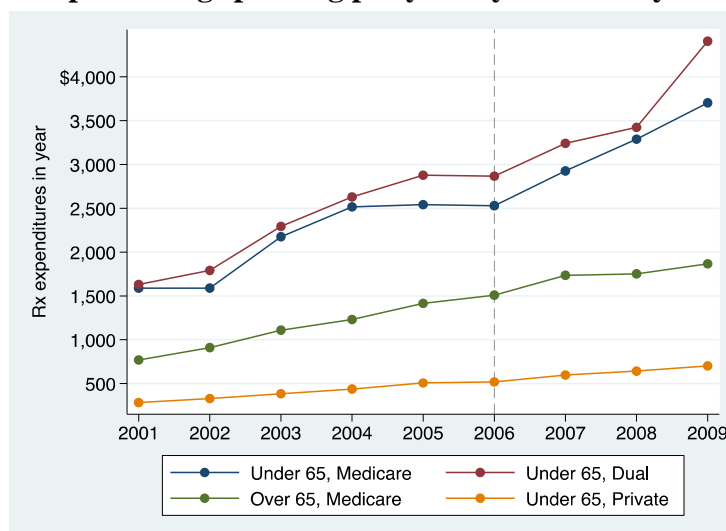
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<sup>20</sup> Most Medicare beneficiaries under 65 obtain their eligibility through SSDI, and we use the two terms synonymously in this paper. However, we note that some individuals under 65 become Medicare eligible if they have end-stage renal disease or amyotrophic lateral sclerosis (ALS) and do not necessarily receive SSDI.

compared to those with private insurance. Given their disability status and lower average income, we also hypothesized that the effects of Part D would be greater for SSDI beneficiaries.

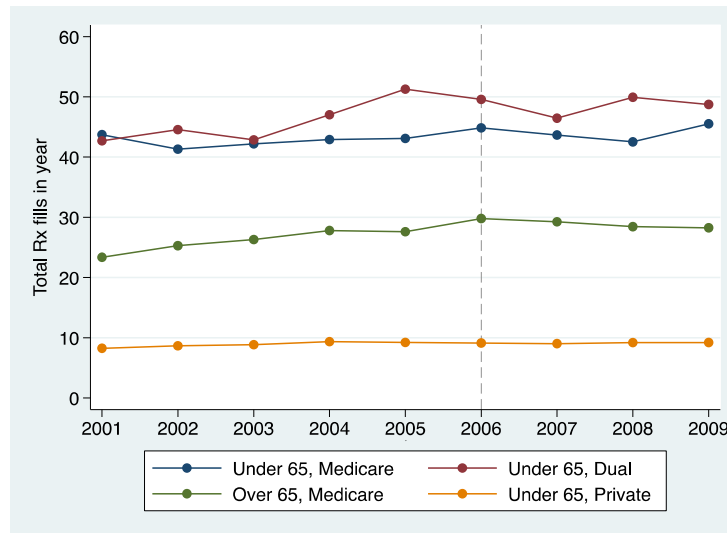
Figure 1 appears to confirm these hypotheses in terms of the effects on spending. We found almost no change in spending for the privately insured and a modest increase for the over 65 Medicare beneficiaries. While spending was rising in the early 2000s, there does appear to be a clear trend break with higher spending growth after 2006. The acceleration for both the Medicare-only and dual-eligible beneficiaries seems higher than for the over 65 Medicare or privately insured populations.

**Figure 1. Average prescription drug spending per year by beneficiary status, 2001-2009**



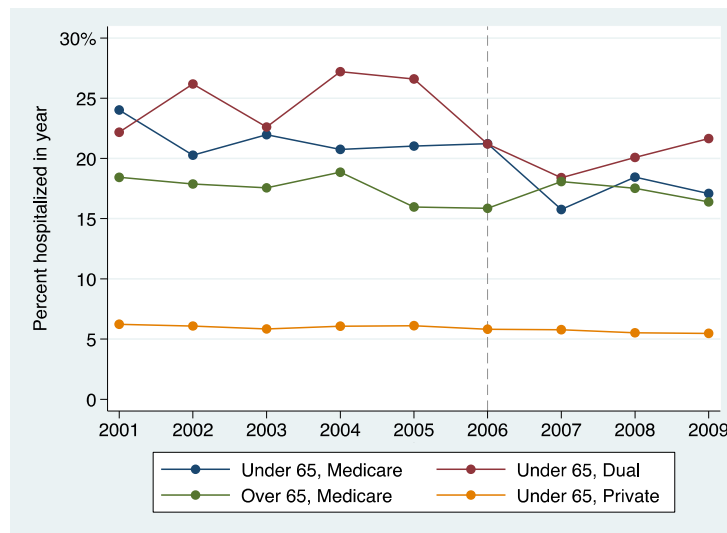
However, the story was less clear in terms of the number of prescriptions (Figure 2). Despite the apparent increase in spending, the average number of prescription fills for the under 65 Medicare beneficiaries appears mostly unchanged before and after 2006. There was a small uptick in the number of prescription fills for the over 65 Medicare population but otherwise the average number of prescription fills appears relatively unchanged.

**Figure 2. Average total number of prescriptions per year including refills by beneficiary status, 2001-2009**



Notably, the adoption of Part D was strongly associated with a decline in hospitalizations among SSDI beneficiaries (Figure 3). Both the single-eligible and dual-eligible under 65 Medicare beneficiaries display sharp drops in the rate of hospitalizations after the introduction of Part D. However, we saw no such change for the over 65 Medicare or privately insured populations.

**Figure 3. Percent of individuals with at least one inpatient hospitalization in the year by beneficiary status, 2001-2009**



These findings were confirmed by the regression results reported in Table 1. The top panel compares outcomes for the under 65 Medicare population to the privately insured (the first row is the base difference, and the second row is the difference-in-differences parameter). On average, the introduction of Part D was associated with a \$944 increase in prescription drug spending for the under 65 Medicare beneficiaries, \$881 in the single-eligible population and

\$1,055 in the dual eligible population (the changes are similar in percent terms). Panel B shows the change in spending for the under 65 Medicare population compared to the over 65 Medicare population. Spending on prescription drugs increased by \$555 for under 65 beneficiaries compared to over 65, \$480 for the single-eligible and \$680 for the dual-eligible.

We also found no change in the number of prescriptions for the under 65 Medicare beneficiaries compared to the privately insured (Columns 4-6). The overall change was a decline of about 0.4 prescriptions per year. Compared to the over 65 Medicare population (Panel B), the prescriptions fell somewhat. While surprising, the estimates were imprecise and not statistically significant, we couldn't rule out a small increase in the number of prescriptions.

The last three columns of Table 1 report the findings with respect to the changes in hospitalizations associated with Part D. As with Figure 3, there was a sharp decline in the hospitalization rate for the under 65 Medicare beneficiaries compared to either the privately insured or over 65 Medicare beneficiaries. There was a 4-6 percentage point reduction in the number of SSDI beneficiaries hospitalized per year, regardless of the regression specification.

One limitation of the difference-in-differences approach is that it could not address potential unobserved changes in the SSDI beneficiary pool. In work not reported here, we tested for observable differences in the beneficiary pool before and after 2006 (e.g., an increase in the presence of chronic health conditions) and found no difference. However, we were not able to rule out selection based on unobservable characteristics.

**Table 1. Difference-in-Differences Estimates of the Effect of Medicare Part D on Prescription Drug Expenditures, Prescription Fills and Hospitalizations for Under 65 Medicare Beneficiaries Compared to the Privately Insured or Over 65 Medicare Beneficiaries**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Outcome variable:</b>	<b>Total Rx expenditures</b>			<b>Total number of Rx fills</b>			<b>Any hospitalization in year</b>		
	All	<u>Any Medicaid in year?</u>		All	<u>Any Medicaid in year?</u>		All	<u>Any Medicaid in year?</u>	
Under 65 Medicare sample:		No	Yes		No	Yes		No	Yes
<b>Panel A. Comparing Under 65 Medicare Beneficiaries to Privately Insured</b>									
Under 65 Medicare vs. Private	1,243*** (68)	1,097*** (90)	1,402*** (99)	24.5*** (1.0)	22.4*** (1.2)	27.5*** (1.6)	0.130*** (0.010)	0.113*** (0.013)	0.154*** (0.014)
Under 65 Medicare * Post 2006	944*** (163)	881*** (206)	1,055*** (263)	-0.4 (1.6)	-0.5 (2.0)	0.4 (2.6)	-0.053*** (0.014)	-0.048** (0.019)	-0.057*** (0.022)
<b>Panel B. Comparing Under 65 Medicare Beneficiaries to Over 65 Medicare Beneficiaries</b>									
Under 65 Medicare vs. Over 65 Medicare	1,101*** (87)	976*** (101)	1,353*** (115)	24.2*** (1.2)	21.1*** (1.4)	28.6*** (1.8)	0.129*** (0.014)	0.126*** (0.016)	0.195*** (0.019)
Under 65 Medicare * Post 2006	555*** (166)	480** (208)	680** (265)	-2.1 (1.6)	-2.2 (2.0)	-1.4 (2.6)	-0.052*** (0.016)	-0.047** (0.020)	-0.057** (0.023)

Notes: The table reports linear regression estimates of the impact of Medicare Part D introduction on prescription drug spending, prescription fills and the probability of hospitalization. The Under 65 Medicare \* Post 2006 is the difference-in-differences parameter estimate. Other covariates include age, sex, race, education, income, co-morbidities (measured as ever being diagnosed with heart disease, stroke, emphysema, diabetes, arthritis or asthma) and year fixed effects. Data come from the 2001-2009 Full-Year Consolidated Files of the Medical Expenditures Panel Survey (MEPS). Observations from 2006 are excluded in all regressions. Data are weighted to reflect the complex survey design of the MEPS. Robust standard errors reported in parentheses. A \*, \*\* or \*\*\* indicate statistical significance at the 10%, 5% or 1% level, respectively.

#### 4. Discussion

The finding that prescription drug spending increased for SSDI beneficiaries after the introduction of Part D, and that it increased more than the spending by aged beneficiaries was consistent with our expectations. However, it was surprising that we found no corresponding increase in the number of prescription fills. One possible explanation is that the availability of more generous drug coverage through Part D led to substitution from cheap generics to more expensive brand medications. This might also help explain why we found similar results for the dual-eligible beneficiaries, who had access to drug coverage through Medicaid prior to Part D, as Medicaid formularies often restrict access to brand medications to contain costs.

The sharp decline in hospitalizations we observed was also surprising, given that the availability of health insurance is usually not associated with an immediate change in health outcomes. It is true that the SSDI population is disproportionately made up of at-risk individuals with a need for prescription medications, such as those with significant behavioral health problems, and that expanding access to more or better medications could significantly improve their health. Alternatively, it is possible that the decline we observed reflected not a change in health but a behavioral change resulting in fewer hospital stays (if, say, beneficiaries had been going to the hospital to get prescriptions).

We will continue to explore these and other implications of our findings. Our hope is that these findings will help inform as to the impact of Medicare Part D, and prescription drug coverage more generally, on the health and healthcare utilization of SSDI beneficiaries.

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