The Vast Majority Of Medicare Part D Beneficiaries Still Don't Choose The Cheapest Plans That Meet Their Medication Needs

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Abstract

The Medicare Part D program allows beneficiaries to choose among Part D plans administered by different health plans in order to encourage market competition and give beneficiaries more flexibility. Currently around 40–50 Part D plans are available per region. When faced with so many options, do beneficiaries generally choose the least expensive plan? Using 2009 Part D data, we found that only 5.2% of beneficiaries chose the cheapest plan. Nationwide, beneficiaries on average spent $368 more annually than they would have spent under the cheapest plan available in their region, given their medication needs. Beneficiaries often overprotected themselves by paying higher premiums for plan features they did not need, such as generic drug coverage in the coverage gap. Our findings suggest that beneficiaries need more targeted assistance from the government to choose plans, for example, a customized letter indicating three top plans based on beneficiaries' medication needs.

The Medicare Part D prescription drug benefit was implemented in 2006 to subsidize the costs of prescription drugs for Medicare beneficiaries in the United States. In 2010, the Part D program cost the federal government $62 billion.[1] Under the program, multiple private providers compete for beneficiaries, which has been both a key and controversial feature of the large-scale public insurance program. There are 1,736 stand-alone Part D plans available across the country, with an average of 45–57 plans available per region in 2009.[2] The rationale of the program is to use market competition to control prices and provide beneficiaries the opportunity to choose the plan that's right for them.

A key policy concern about the Part D program design is whether beneficiaries generally choose the least expensive plan that satisfies his or her medication needs, given the large number of plan options.[3] Jason Abaluck and Jonathan Gruber observed that Part D enrollees had difficulty making their initial plan choices when Part D started in 2006, finding that beneficiaries paid more attention to plan premiums than their own total out-of-pocket health expenses.[4] Florian Heiss and colleagues used 2007 and 2008 Medicare Part D data to study plan choices and noted that less than 10% of consumers enrolled in least-costly plans in 2007 and 2008, and beneficiaries could save on average about $300 per year if they switched plans.[5]

We evaluated how beneficiaries fared in 2009, using national Medicare Part D data linked with public formulary files for all Part D plans available in the market, which provided data on how much a given drug would cost from one plan to another. In particular, we studied the following questions, each with important policy implications. First, did beneficiaries choose the least expensive plan available, based on their total spending (premium plus patient out-of-pocket payment for drugs filled)? If not, what was the difference in total spending between their actual plan choice and the cheapest plan available in their region, based on

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their medication needs? The gap between the two is defined as "overspending". Next, we considered what factors affected overspending, such as which patient characteristics or other variables were associated with beneficiaries choosing the cheapest plan. Finally, we studied whether there were important regional differences regarding how well beneficiaries chose plans.

Study Data and Methods

Data source

For a 5% random sample of Medicare beneficiaries, we obtained data on 2009 Medicare Part D plan enrollment, Part D event data, plan characteristics, and pharmacy characteristics files from the Centers for Medicare & Medicaid Services (CMS). The Part D event file includes information on when and where a prescription was filled, the National Drug Code, quantity and strength measures (days supply, dosage, package size), gross drug costs before rebates, patient and insurer payments, and Part D plan encrypted IDs.

The plan characteristic file lists plan premium, deductibles, plan service region, and thresholds for the coverage gap and catastrophic coverage. The coverage gap is defined as the point when the individual reaches the Part D prescription drug coverage limit and must pay 100% out-of-pocket until the catastrophic coverage threshold is met, after which the beneficiary pays only 5% of drug costs. The pharmacy characteristics file includes the pharmacy identifier and other information.

From the CMS public formulary files, we also obtained detailed features on each available Part D plan, for example, lists of drugs covered in the plan formulary, tiers (pricing groups) that a drug belongs to, and copayment or coinsurance associated with the tier.

Study population

Our study population included those beneficiaries who were continuously enrolled in a stand-alone Part D plan in 2009. We excluded beneficiaries who had Medicaid coverage or federal low-income subsidies for Part D plans because these beneficiaries had no copayment or paid a small copayment throughout the year. We also excluded those enrolled in Medicare Advantage Part D plans because beneficiaries in these plans obtain both prescription drug benefits and regular medical insurance from the same plan, and therefore they did not choose these plans solely based on their medication needs. Finally, we excluded those enrolled in employer-sponsored drug plans because these plans are provided only to formal employees and not available to all Medicare beneficiaries. Our final study sample included 412,712 individuals.

Outcomes

We defined overspending as the difference in total beneficiary spending (including plan premium and out-of-pocket payment for the drugs filled) between the plan the patient chose and the cheapest alternative option in the region. The cheapest alternative plan differed for each individual depending on his or her medication portfolios. For each beneficiary in our dataset, we calculated the total beneficiary spending for the drugs he or she used in 2009, for each of the plans available in the person's region. We also calculated the total beneficiary spending if the person had chosen not to enroll in any plan at all, in which case he or she would pay zero premium and 100% out-of-pocket. We then compared the total beneficiary spending under the cheapest plan option and under the actual plan choice (See Technical Appendix, Exhibit A, for additional details on this analysis).[6]

When choosing a plan, beneficiaries only knew what drugs they purchased in the prior year, though they can use this information to predict the next year's drug use and choose an appropriate plan. Assuming that beneficiaries can precisely predict their next year's drug consumption, we first used 2009 actual drug use to simulate 2009 drug costs under different plans. We then also conducted a sensitivity analysis by using 2008 drug claims to determine 2009 drug expenditure, with an assumption that patients could not predict their next year drug use. The reality would be somewhere in between perfect prediction and an inability to predict drug use.

Statistical analysis

We reported the distribution of the overspending amount (e.g., mean, median) and how overspending varied by gender, age, and race. We conducted a multivariate linear regression with robust standard errors to estimate factors affecting the overspending amount. Covariates included gender, age and race; the stand-alone Part D regions where the beneficiary resided and the number of plans available in the region;[3,7,8] plan features (deductible, generic coverage in the coverage gap); gross drug spending; risk scores used by CMS to reimburse plans;[9] and a list of specific medical and mental conditions.

Study Results

Sixty-five percent of the study sample was female, and the average age was 75. The median gross drug cost in 2009, before rebates, was $1,490 per patient. The median total patient spending in 2009 was $990, (including out-of-pocket drug costs and premiums). The median out-of-pocket payment for drugs was $519 and the median premium payment was $457 per patient.

Distribution of overspending

Approximately 5.2% of our study sample chose the least expensive plan available in their region, meaning that the vast majority overpaid. The mean overspending was $368 and the median was $331 (Exhibit 1). More than a fifth of beneficiaries (approximately 22%) could save more than $500 by switching to the cheapest plan available, given their current drug portfolios.

Heterogeneity of overspending by demographics

Exhibit 2 presents the variation in overspending by demographic characteristics. As beneficiaries aged, they increasingly chose more expensive plans. For example, people over 85 overspent $29 more on average than beneficiaries aged 65 to 69. All overspending differences based on age and genders are statistically significant. Blacks, Hispanics and Native Americans chose cheaper plans, relative to Whites (P<0.01); and there was no difference between Asians and Whites.

Factors affecting overspending

The overspending amount was not affected by the amount of gross drug spending, or by the patient's risk score (see Technical Appendix, Exhibit B).[6] In addition, patients with common medical conditions, such as diabetes and chronic heart failure, were not significantly more likely to choose more expensive plans. On the contrary, beneficiaries with cognitive deficits or with mental health issues (Alzheimer's, dementia, or depression, e.g.) tended to choose cheaper plans, on average spending $10 less than those without these conditions (P<0.001).

The number of available stand-alone plans in the region was positively associated with overspending. Overspending increased by $3.20 ($p<0.001$) for every extra plan available in the region.

Regional difference in overspending

There are 34 Part D stand-alone plan regions in the United States. Some regions are single states while others consist of more than one state. Each region offers different numbers of plans to beneficiaries, ranging from 45 plans (e.g., Alaska) to 57 plans (e.g., the region including Pennsylvania and West Virginia) offered in 2009. Beneficiaries in different regions displayed varying abilities to choose the least expensive plan (see Technical Appendix, Exhibit C).[6] Regional variation in overspending ranged from a median of $286 overspending in the Upper Midwest and Northern Plains region (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming) to a median of $376 in Alaska. The overspending by region was not necessarily linked only with the number of plans available in that region, however. For example, beneficiaries from the region of Pennsylvania and West Virginia had the highest number of plans to choose from, but this region also had one of the lowest median overspending amounts, at $297.

Plan characteristics affecting overspending substantially

Plan characteristics, such as deductibles and the type of generic drug coverage in the coverage gap, affected overspending significantly, as shown in Exhibit 3. As an example, median overspending value was $683 among those with some generic drug coverage in the gap and $325 among those without coverage (with $358 difference), mostly driven by higher premiums paid for generic coverage in the gap plans. In other words, beneficiaries overspent by more than twice as much for the added generic coverage. After the adjustment of other covariates in the multivariate regression, this result remained (shown in the Technical Appendix, Exhibit B).[6]

Choices related to plan deductibles told a similar story. Three-fourths of the study population opted for plans with no deductible. These individuals overspent on average $257 more on premiums alone, indicating that the patients could have saved money by choosing a plan with some deductible.

Most of the results presented in this section held when we used 2008 Part D data in the sensitivity analysis (Technical Appendix, Exhibit D).[6]

Limitations

Our study had several limitations. First, some prescriptions are over-the-counter drugs or not covered by Part D plans, and thus could not be tracked in the Part D claims data. Second, our simulation model did not incorporate drug substitution across therapeutic classes (when a pharmacist or doctor switches medications from the original prescription and dispenses a different drug that treats the same condition), but it did factor into substitutions between brand-name and generic drugs for the same ingredients and strength. Third, customers may prefer some plans because they provide better customer services even though they are more expensive. Our analyses did not include plan quality measures, such as customer services, because currently we cannot identify plans in CMS Part D data. Finally, overspending is a simple cost calculation between the actual plan choice and the cheapest plan. Beneficiaries might be willing to pay more to avoid unpredictable high costs that they could not foresee. Thus, a large overspending amount might still be justified for these potentially risk-averse individuals.

Discussion

Our study provides a nationally representative evaluation on how well beneficiaries chose among competing Medicare Part D plans in 2009, the fourth year of the program. Beneficiaries' plan choices were far from optimal in 2009: only 5.2% of beneficiaries chose

the cheapest plan offered in their regions. On average, they could save $368 by switching to the cheapest plan in their region; and more than a fifth of beneficiaries (about 22%) could save more than $500 by switching to the cheapest plan in the region. The overspending amount was mainly driven by higher premiums paid for generic coverage in the gap plans. That is, beneficiaries tended to over-protect themselves by purchasing plans with more generous features. Our results show that beneficiaries have trouble choosing the cheapest plans based on their medication needs, and instead tend to choose plans with low deductible and more generous features, and pay a higher premium as a result.

Certain patient characteristics also affected plan choice. As beneficiaries aged, their plan choices became worse, consistent with prior research.[10, 11] On the other hand, beneficiaries with cognitive disorders (Alzheimer's disease, dementia, depression) are not necessarily making worse choices than those without these conditions. These individuals could have received help from their care-givers in making these decisions, however, which we could not observe.

Prior research suggests, and our study confirms, a trend of overspending on Medicare Part D plans. Abaluck and Gruber found that in 2006 only 12.2% of individuals chose the lowest cost plan in their region and on average beneficiaries could save 30.9% of their total drug spending by switching to the lowest cost plan.[4] Our results suggest that the situation has not gotten much better. Jonathan Ketcham and colleagues concluded that beneficiaries learned to reduce their overspending by either choosing a better plan or better managing their medications in 2007 after one year of experience.[9] However, unlike our study, Ketcham and colleagues did not use nationally-representative data. We did not observe any improvement of beneficiaries' choosing the cheapest plan in 2009 compared to Abaluck and Gruber's 2006 study, and our results are consistent with Heiss's findings using 2007 and 2008 Part D data.[5]

One possible interpretation for these results is the impact of inertia and the status quo bias. When Medicare Part D started in 2006, the majority of beneficiaries did not choose the least expensive plan. Over time, they may have simply stuck to the original plan and never switched to a better one. Beneficiaries may not spend much time researching and re-optimizing their plan choices based on changes of their medication needs and plan options.

Enrollees' reluctance to change plans also could arise from other factors, such as the high cost of learning. For example, they need to learn a different plan's restrictions and get familiar with the new network of covered health care providers. For this aging group, the learning cost could be substantial, and this leads to so-called "stickiness." This theory has been supported by findings from the private health insurance market.[12–14] For example, private sector employees tend to stick with the default health insurance plan, unless forced to change because their plan is no longer available.[14]

We now consider why beneficiaries residing in some states fared much better than those in other states. The state variation in overspending does not directly correlate to the geographic variation in drug spending found in previous studies.[15–17] Furthermore, only part of these geographic variations could be explained by the number of plan choices provided in the region. Previous literature on choice selection paid extensive attention on the number of available plans in stand-alone service region.[8, 18] In 2006, there were 27 to 52 plans available for stand-alone service regions. Based on public input, CMS gradually reduced the number of available plans in more recent years. In 2012, the number of plans available for each stand-alone service region ranged from 25 to 36.[19] Our analysis suggests that the reduction in the number of plans could help but not substantially.

Conclusion

Medicare Part D program is a large and unique public insurance program that relies on private market mechanisms to meet health care needs. Lessons learned from how beneficiaries have chosen plans in the Part D market can be valuable for designing health insurance exchanges, wherein beneficiaries will select among a potentially wide array of standardized private health plans.

For one, our findings suggest that beneficiaries are not capable of gathering sufficient information to choose the cheapest plan on their own, and they sometimes pay more to get plan features they do not need, or that ultimately are not worth the added cost. Some assistance is necessary to help them make better choices. Thus, in the case of both Part D plans and health insurance exchanges, more active assistance could greatly benefit beneficiaries. For example, CMS could provide customized letters to beneficiaries indicating the top three Part D plans based on beneficiaries' medication history or assign beneficiaries to the best plan based on their medication needs with an option to opt out. Similarly, insurance exchanges could also provide active assistance, such as by screening plans to ensure they meet quality standards to limit the number of plan choices. In addition, exchanges are also in a good position to guide or provide advice to help consumers find plans personalized to their specific health conditions.

Acknowledgments

NOTES

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Appendix

A. Simulation of Out-of-Pocket Cost for Each Available Plan

A.1 CMS formulary file

We obtained information on the number of Part D plans by region and specific plan features from public formulary files provided by CMS. Specifically we used the plan information file, the beneficiary cost file, and the basic formulary file. The plan information file lists plan names and PDP regions in which plans are offered. The beneficiary cost file contains copays and coinsurance rates for different tiers of each plan at each phase. The formulary file contains a list of all the drugs by NDC that are included on the formulary for each plan.

A.2 Assumptions of simulation

To calculate the out of pocket cost for each available plan in a specific region, we need to make several assumptions.

As for what set of information consumers would use when they made their decision at the end of 2008 about their coming 2009 drug consumption, we adopted the fully-informed approach for our main analysis. We assumed that consumers had perfect information and predicted precisely how 2009 drug consumption would be. We used their actual drug consumption in year 2009 to calculate simulated out-of-pocket prescription drug costs for all alternative plans. In sensitivity analysis, we adopt no prediction approach. We used 2008 drug uses to predict 2009 drug cost assuming that patients could not predict their future spending beyond their 2008 drug consumption.

We needed to decide how the drugs covered by actual chosen plan would be paid by alternative plans. We followed three steps to decide the patient pay amount for each claim. We first ran a crosswalk between the drugs by NDC (National Drug Code) in the claims data and the drugs by NDC listed on the formulary. If we found a match, we used the copay or coinsurance information on this drug to calculate patient pay amount. If we could not find a match in formulary file using NDC, we would try to substitute the unmatched drug with other drugs in the formulary. In particular, we search the substitutable drugs in the same Generic Code Number (GCN). GCN groups all drugs with the same ingredients and strength; that is, if a generic and a brand-name drug have the same ingredients and strength, they have the same GCN but different NDC. We used a file from First Data Bank to

construct this broader drug ID variable GCN. We ran the crosswalk between the rest of the drugs by GCN in the claims data and the drugs by GCN listed on the formulary. If we found several matches by GCN in formulary, we assumed that individuals could substitute to the cheapest drug with the same GCN name was they enrolled in an alternative plan. For the prescription drugs still not covered by alternative plans after NDC and GCN matching, we assumed perfectly inelastic demand. It meant that patients would purchase these drugs anyway at their own cost. CMS drug event file included gross drug price before rebate for each claim, we used this drug price directly for all our calculation.

There was a large difference between drug price based on whether the prescription was filled via mail service or retail. Thus, we merged pharmacy identifier from Part D event data and pharmacy characteristics file to explore whether patients filled their prescriptions by mail or retail. If patients purchased the drug through mail service, we assumed that they would continue to use mail service in alternative plans. We assumed that all drugs were filled at a preferred network pharmacy.

A.3 Calculation of Out-of-Pocket Cost

We used data from Medicare drug event file on the individual's prescription drug claims and region of residence connecting them with CMS formulary file. For each plan available to beneficiary in a region, we calculated the patient pay amount for each drug claim based on each plan's characteristics which included deductibles, initial coverage limit, doughnut hole coverage, and formularies. We calculated the total simulated Out-of-Pocket cost of each plan by summing up all Out-of-Pocket patient pay amounts.

B. Factors Affecting the Overspending from Results in the Multinomial Linear Regression

Variable	β [se]
Age in 2009	
<65	Reference group
65–69	−1.0 [2.5]
70–74	14.8 [2.5] ***
75–79	21.6 [2.5] ***
80–84	28.4 [2.5] ***
85	38.8 [2.6] ***
Female	4.5 [.89] ***
Race	
White	Reference group
Black	−1.4 [2.3]
Asian	−9.0 [4.6] **
Hispanic	−7.9 [4.4] **
Native	−39.6 [8.9] ***
Other	4.2 [3.9]
Risk Score	−5.7 [0.8] ***
Gross drug spending	0.001 [0.0004] ***
Alzheimer Disease	−10.8 [2.7] ***

Variable	β [se]
Alzheimer-related Dementia	−5.2 [2.1] ***
Depression	−7.8 [1.6] ***
Chronic Heart Failure	14.7 [1.4] ***
Acute Myocardial Infarction	−5.7 [4.8]
Diabetes	−2.2 [1.0] ***
Rheumatoid Arthritis / Osteoarthritis	−6.2 [1.0] ***
Number of stand-alone plans available by PDP plan service area	3.2 [.38] ***
Coverage gap	
No Coverage	−351.7 [1.7] ***
Generic Coverage	Reference group
Deductibles	
0	Reference group
0–295	−77.9 [1.6] ***
=295	−23.4 [1.1] ***
Intercept	536.9 [17.6] ***
F tests	902.4
R-squared	0.1804
Observations	412558

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Results were estimated from the multivariate linear regression with robust standard errors. We fitted the following multivariate linear regression model:

$$\text{Overspending}_i = \beta_0 + \beta_1 \text{Agecategory}_i + \beta_2 \text{Gender}_i + \beta_3 \text{Race}_i + \beta_4 \text{Riskscore}_i + \beta_5 \text{Grossdrugspending}_i + \beta_6 \text{Medicalcondition}_i + \beta_7 \text{plan}_r + \beta_8 \text{Coveragegap}_i + \beta_9 \text{Deductible}_i$$

i is for individual and r is for stand-alone part D service region.

PDP service regions were controlled as dummy variables.

Beneficiaries with brand-name drug coverage in the gap were excluded because there were too few observations to make meaningful estimate (n=154).

Robust standard errors were reported in brackets (***p<0.01, ** p<0.05, *p<0.1.).

C. Geographic Variation in Overspending

PDP plan service area	Number of PDPs in the area	Median of overspending	Mean of overspending
Upper Midwest and Northern Plains (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming)	48	286	305
New York	51	291	333
Pennsylvania and West Virginia	57	297	355
New Jersey	52	310	346
Arizona	49	317	363
Illinois	49	318	351
Arkansas	52	318	351
Kansas	48	319	350
Florida	54	322	361
Alabama, Tennessee	49	323	365
Missouri	48	327	355
Central New England (Connecticut, Massachusetts, Rhode Island, and Vermont)	47	329	362
Georgia	50	331	361
Ohio	49	332	373
Mid-Atlantic (Delaware, District of Columbia and Maryland)	48	332	370
New Mexico	50	333	370
Nevada	49	340	377
South Carolina	51	344	385
Wisconsin	53	344	381
Idaho, Utah	51	348	377
Michigan	51	348	376
Louisiana	47	349	379
Mississippi	47	350	384
Virginia	48	351	389
Colorado	53	352	385
Hawaii	47	353	389
Texas	53	357	398
Oregon, Washington	48	357	384
North Carolina	49	359	393
Northern New England (New Hampshire and Maine)	46	359	392
Oklahoma	49	360	390
Indiana, Kentucky	48	367	399
California	51	370	423
Alaska	45	376	409

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Abbreviation: PDP = stand-alone Part D plans.

The total number of observations was 412712.

Regions in the table are ranked from the lowest to highest median of overspending.

United States territories (Puerto Rico and U.S. Virgin Islands) are not reported here because of small sample sizes.

D. Sensitivity Analysis

We used same population's 2008 claims data to predict their 2009 drug cost. Most results sustain except for the analysis on the plan deductibles. All results are presented below in five exhibits.

Figure D.1: Histogram And Statistic Of The Distribution Of Overspending In 2009
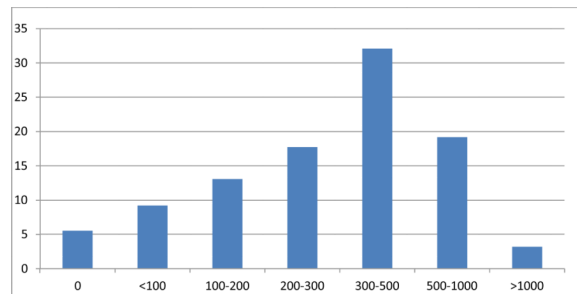
Overspending	$
Mean	345
Median	301
Standard deviation	291
5th Percentile	0
10th Percentile	30
25th Percentile	157
75th Percentile	464
90th Percentile	689
95th Percentile	862

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Note: The total number of observations was 361008.

Table D.2: Heterogeneity Of Overspending By Demographic Characteristics

	%	Mean of Overspending	Median of Overspending
Gender			
Male	33.7	341	299
Female	66.4	347	302
Age			
<65	5.0	338	278
65–69	20.0	329	289
70–74	22.5	343	301
75–79	19.1	346	303
80–84	16.3	352	306
85	16.9	359	313
Race			
White	94.1	346	301
Black	3.6	330	290
Asian	0.7	350	312
Hispanic	0.5	340	300
Native	0.2	349	303
Other	0.9	358	312

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Note:

The total number of observations was 361008.

Table D.3: Factors Affecting the Overspending from Results in the Multinomial Linear Regression

Variable	β [se]
Age in 2009	
<65	Reference group
65–69	3.7 [2.9]
70–74	19.5 [2.8] ***
75–79	22.8 [2.8] ***
80–84	30.2 [2.9] ***
85	37.6 [3.4] ***
Female	5.4 [.94] ***
Race	
White	Reference group

Variable	β [se]
Black	−7.2 [2.4] ***
Asian	−10.6 [5.6] **
Hispanic	−14.3 [5.9] ***
Native	−10.1 [10.6]
Other	6.4 [4.6]
Risk Score	−.75 [0.8]
Gross drug spending	−0.002 [0.001] *
Alzheimer Disease	2.42 [3.2]
Alzheimer-related Dementia	2.2 [2.4]
Depression	−5.6 [1.7] ***
Chronic Heart Failure	11.3 [1.7] ***
Acute Myocardial Infarction	−2.3 [5.2]
Diabetes	0.6 [1.4]
Rheumatoid Arthritis / Osteoarthritis	−4.4 [1.1] ***
Number of stand-alone plans available by PDP plan service area	4.3 [.40] ***
Coverage gap	
No Coverage	−312 [2.0] ***
Generic Coverage	Reference group
Deductibles	
0	Reference group
0–295	1.9 [2.4]
=295	5.2 [1.1] ***
Intercept	439.4 [18.6] ***
Observations	360867

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Results were estimated from multivariate linear regression with robust standard errors.

PDP service regions were controlled as dummy variables.

Beneficiaries with brand-name drug coverage in the gap were excluded because there were too few observations to make meaningful estimate (n=141).

Robust standard errors were reported in brackets (***p<0.01, ** p<0.05, *p<0.1.).

Table D.4: Overspending By Plan Characteristics of The Actual Plan

	%	Mean of Overspending			Median of Overspending		
		Total	Premium	OOP	Total	Premium	OOP
Coverage gap							
No Coverage	87.5	306	193	112	276	175	29
Generic Coverage	12.5	615	554	61	594	560	4
Deductibles							
0	77.2	355	260	95	304	210	18
0–295	3.2	334	211	122	316	194	17
=295	19.5	305	159	145	282	150	59

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Abbreviation: OOP = out-of-pocket.

The total number of observations was 360867.

Table D.5: Geographic Variation in Overspending

PDP plan service area	Number of PDPs in the area	Median of overspending	Mean of overspending
Upper Midwest and Northern Plains (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming)	48	236	281
New York	51	276	331
Pennsylvania and West Virginia	57	295	361
New Jersey	52	261	305
Illinois	49	287	338
Kansas	48	282	314
Florida	54	300	345
Alabama, Tennessee	49	302	345
Arkansas	52	286	324
Arizona	49	293	340
Missouri	48	288	322
Central New England (Connecticut, Massachusetts, Rhode Island, and Vermont)	47	311	352
Mid-Atlantic (Delaware, District of Columbia and Maryland)	48	300	341
Georgia	50	294	336
Ohio	49	297	346
New Mexico	50	303	349
Nevada	49	311	358

| PDP plan service area	Number of PDPs in the area	Median of overspending	Mean of overspending
Wisconsin	53	308	356
Idaho, Utah	51	308	341
Hawaii	47	309	360
South Carolina	51	323	374
Virginia	48	302	340
Colorado	53	306	351
Michigan	51	341	369
Mississippi	47	306	353
Louisiana	47	329	368
Oregon, Washington	48	313	354
Oklahoma	49	320	368
North Carolina	49	329	369
Northern New England (New Hampshire and Maine)	46	351	388
Texas	53	314	365
Indiana, Kentucky	48	338	372
Alaska	45	345	393
California	51	333	376

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Abbreviation: PDP = stand-alone Part D plans.

The total number of observations was 360867.

United States territories (Puerto Rico and U.S. Virgin Islands) are not reported here because of small sample sizes.
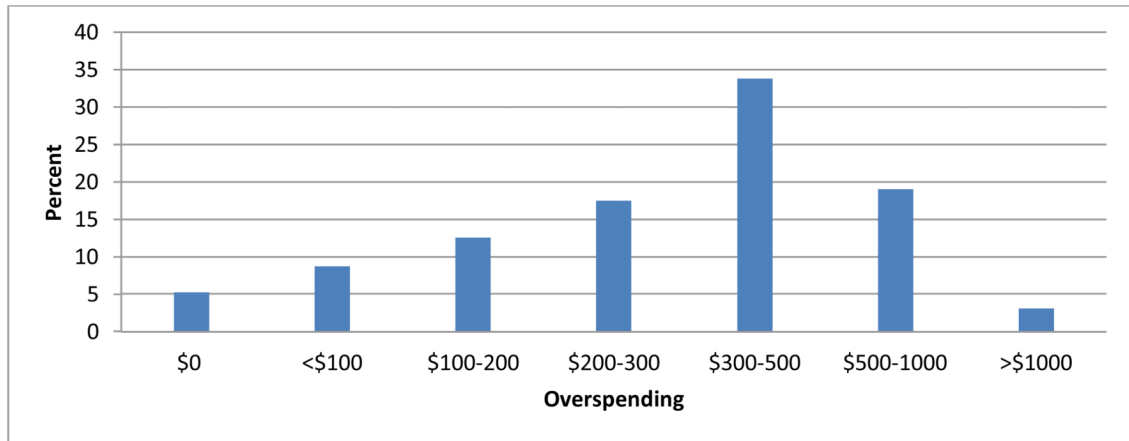
Overspending	$
Mean	368
Median	331
Standard deviation	286
5th Percentile	0
10th Percentile	57
25th Percentile	189
75th Percentile	477
90th Percentile	702
95th Percentile	883

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Note: The total number of observations was 412712.

1	$0	5.24
2	<$100	8.75
3	$100-200	12.59
4	$200-300	17.51
5	$300-500	33.76
6	$500-1000	19.05
7	>$1000	3.1

(Plotting points)

Exhibit 1.
Histogram And Statistic Of The Distribution Of Overspending In 2009

Exhibit 2

Heterogeneity Of Overspending By Demographic Characteristics

	%	Mean of Overspending	Mean Difference	Median of Overspending
Gender		$	$	$
Male	34.9	365	Ref	332
Female	65.1	369	4[a]	331
Age				
<65	5.7	361	Ref	323
65–69	20.4	352	−9[a]	318
70–74	22.6	366	5[b]	333
75–79	18.8	371	10[a]	335
80–84	15.9	375	13[a]	335
85	16.6	382	20[a]	338
Race				
White	93.7	369	Ref	331
Black	3.9	355	−13[a]	328
Asian	0.6	369	−0.6	343
Hispanic	0.6	348	−20[a]	328
Native	0.2	320	−48[a]	302
Other	1.0	382	13a	347

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Note:

The total number of observations was 412712.

[a]The difference is statistically significant at the 1 percent level.

[b]The difference is statistically significant at the 10 percent level.

Exhibit 3

Overspending By Plan Characteristics of The Actual Plan

	%	Mean of Overspending			Median of Overspending		
		Total	Premium	OOP	Total	Premium	OOP
		$	$	$	$	$	$
Coverage gap							
No Coverage	88.0	325	189	135	306	175	46
Generic Coverage	12.0	683	561	123	665	562	58
Deductibles							
$0	75.4	389	257	133	344	214	54
$0–295	3.9	285	155	130	250	174	0
$295	20.6	306	167	139	303	157	32

Source: Authors' analysis using Medicare Part D event data and linked Medicare public formulary file (see Appendix A for more details).

Notes:

Abbreviation: OOP = out-of-pocket.

The total number of observations was 412558.

Coverage Gap: when the individual reaches the prescription drug coverage limit and must pay 100% out-of-pocket until the catastrophic coverage threshold is met.