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Persistent medication affordability problems among disabled Medicare beneficiaries after Part D, 2006–2011

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Abstract

Background—Disabled Americans who qualify for Medicare coverage typically have multiple chronic conditions, are highly dependent on effective drug therapy, and have limited financial

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Conflicts of Interest

The authors declare no conflict of interest.

resources, putting them at risk for cost-related medication nonadherence (CRN). Since 2006, the Part D benefit has helped Medicare beneficiaries afford medications.

Objective—To investigate recent national trends in medication affordability among this vulnerable population, stratified by morbidity burden.

Design and Subjects—We estimated annual rates of medication affordability among nonelderly disabled participants in a nationally representative survey (2006–2011, n = 14,091 person-years) using multivariate logistic regression analyses.

Measures—Survey-reported CRN and spending less on other basic needs to afford medicines.

Results—In the six years following Part D implementation, the proportion of disabled Medicare beneficiaries reporting CRN ranged from 31.6% to 35.6%, while the reported prevalence of spending less on other basic needs to afford medicines ranged from 17.7% to 21.8%. Across study years, those with multiple chronic conditions had consistently worse affordability problems. In 2011, the prevalence of CRN was 37.3% among disabled beneficiaries with three or more morbidities as compared to 28.1% among those with fewer morbidities; for spending less on basic needs, the prevalence was 25.4% versus 15.7%, respectively. There were no statistically detectable changes in either measure when comparing 2011 to 2007.

Conclusions—Disabled Medicare beneficiaries continue to struggle to afford prescription medications. There is an urgent need for focused policy attention on this vulnerable population, which has inadequate financial access to drug treatments, despite having drug coverage under Medicare Part D.

Keywords

adherence; costs; disability; drug policy; Medicare

Introduction

Over eight million people under age 65 qualify for Medicare due to permanent disabilities. Disabled Medicare beneficiaries have relatively low incomes, with one-third living below the poverty line,¹ and over half have multiple chronic conditions, including both mental and physical morbidities.^{1–3}

High drug costs and financial insecurity² can make it difficult for disabled beneficiaries to afford and adhere to prescribed medication regimens. Cost-related medication nonadherence (CRN) can result in declines in health status and increased use of inpatient services.⁴

Although the Medicare Part D drug benefit, launched in 2006, led to nationwide improvements in medication affordability, our previous research determined that decreases in CRN among nonelderly disabled beneficiaries after Part D were delayed and modest considering the very high rates of CRN in this population.^{5,6} In 2007, the rates of CRN and spending less on basic needs among disabled beneficiaries were approximately three times as high as those among the elderly.⁵

There have been no published reports on the longitudinal prevalence of affordability problems among the nonelderly disabled in Medicare since 2007.⁵ In this study, we evaluate

national trends in CRN and spending less on basic needs to afford medicines among this vulnerable group over six years since the implementation of Part D.

Methods

Data Source and Sample

We used data from the Access to Care (ATC) files of the Medicare Current Beneficiary Survey (MCBS), a longitudinal, nationally-representative rotating panel survey of disabled and elderly Medicare enrollees, administered by the Centers for Medicare and Medicaid Services (CMS). In-person interviews collect data on health care utilization, expenditures and sources of payments, health insurance coverage, health status and functioning, and a variety of demographic and behavioral factors. Additional details of the survey design are available elsewhere.⁷ The average response rate in the ATC across the study years (2006–2011) was 79.7% among first-time respondents and 67.0% among all respondents.

We included all community-dwelling nonelderly disabled respondents (n=14,091 person-years) from 2006 through 2011, excluding persons over 64 years of age and those residing in long-term care facilities (n=70,067 person-years excluded). Accounting for overlapping samples across years due to the panel survey design, the total number of unique individuals was 6,197. On average, each annual sample represented 7,030,410 beneficiaries nationally.

Outcomes

Since 2004, the MCBS fall interview has included a set of questions on the affordability of medications, which were developed by the research team in collaboration with CMS, and tested for validity and reliability.^{8–10} The main outcomes for this study were binary measures indicating any cost-related medication nonadherence and any spending less on other basic needs (such as food and heat) to afford medicines during the study year, as described previously.^{5,6,11–13}

Statistical Analysis

We first estimated rates and 95% confidence intervals (CIs) of demographic and health characteristics of disabled beneficiaries (i.e., age, sex, and self-reported income, race, general health status, and count of chronic conditions).¹² We then calculated the unadjusted annual prevalence of CRN and spending less on basic needs with 95% CIs for all study years (2006–2011), as well as for 2004 and 2005 to illustrate pre-Part D levels. All analyses were weighted to represent the national population of community-dwelling Medicare beneficiaries, using the annual cross-sectional survey weights provided in the MCBS.¹⁴ Our analyses controlled for clustering at the primary sampling unit level inherent in the MCBS design.¹⁵

To evaluate trends in the years since Part D implementation, we visually examined time series and used multivariate logistic regression models to investigate changes over time (see model specification in the online appendix). Specifically, we compared the odds of CRN and forgoing basic needs between 2011 and 2007, using data from these two years alone. The year 2007 was the first for which the Part D benefit was fully implemented, as well as the

first year in which our previous studies detected improvements attributable to Part D among nonelderly disabled beneficiaries. Data from 2011 are the most recent available. As previously,^{5,6,11–13} our models controlled for interview sequence, demographic characteristics, and health status. We then repeated these analyses separately for two subgroups defined by number of chronic conditions. To explore the possibility that ORs could overestimate changes in prevalence over time, as compared to risk ratios (RRs), we conducted sensitivity analyses that fit log-binomial regression models to directly estimate RRs. These produced nearly identical results to those from our logistic regression analyses, though the RRs indicated slightly larger effects and had slightly narrower CIs.^{16,17} We report our results in ORs as they appeared to be more conservative. All analyses were conducted in STATA version 12 (StataCorp LP, College Station, TX). This study was reviewed and approved by the Human Subjects Committee of the Harvard Pilgrim Health Care Institute.

Results

The demographic and health characteristics of community-dwelling disabled beneficiaries were similar across study years in the survey population (Table 1). Approximately 60% of disabled beneficiaries rated their health as only poor or fair and 60% reported having three or more chronic medical conditions. During the observation period, the proportion with any Medicaid enrollment was roughly 40%, with another 10% enrolled in Medicare Part D with the low-income subsidy.

The annual prevalence of CRN and spending less on basic needs are shown in Figure 1. We estimated that 40.4% of disabled beneficiaries experienced CRN in 2005, and 35.6% in 2006 following the implementation of Medicare Part D. We observed a continued downward trend until 2007, when 31.6% of beneficiaries had CRN. However, this plateaued in subsequent years, and 34.0% and 33.7% of beneficiaries continued to report CRN in 2010 and 2011, respectively. Similarly, the percentage of beneficiaries forgoing basic needs for medicines declined after the implementation of Part D (24.5% in 2005 to 19.0% in 2007), and reached its lowest point in 2008 with a prevalence of 17.7%. In 2011, 21.6% of beneficiaries reported spending less on basic needs to afford medications.

Among the disabled enrolled in Medicare, sicker beneficiaries had considerably more difficulty affording their medications (Figure 2). In 2011, the prevalence of CRN was 37.3% among people with three or more morbidities versus 28.1% among those with fewer morbidities; for spending less on basic needs to afford medications, the prevalence was 25.4% versus 15.7%, respectively.

Changes in CRN and spending less on basic needs over time estimated using multivariate models are shown in Table 2 (see Online Appendix for regression coefficients for the demographic and clinical variables). Although we observed higher point estimates overall and across morbidity subgroups for both CRN and foregoing basic needs in later years, we detected no significant differences in either measure when comparing 2011 to 2007 (Table 2).

Discussion

In this study, we investigated recent national trends in CRN and spending less on basic needs to afford medicines among disabled Medicare beneficiaries. Our findings indicate that the approximately eight million permanently disabled Americans, who have intensive prescription needs and relatively high medication costs, continue to face economic barriers to prescription therapy. After the modest early impact associated with Part D implementation,^{5,6} we did not observe further improvements in affordability. During our observation period, over one-third of disabled Medicare beneficiaries delayed or did not get medications, skipped doses, or took smaller doses because of cost concerns. In addition, roughly one-fifth cut back on other basic needs to afford medications. Beneficiaries with multiple chronic conditions reported more problems affording their medications than those with fewer illnesses.

The recent widely touted decline in overall US prescription drug spending¹⁸ belies troubling affordability problems faced by permanently disabled Americans who qualify for Medicare.¹⁹ The burden of medication costs falls disproportionately on disabled beneficiaries, who experience CRN at three times the rate of the elderly,^{6,12} seriously compromising their ability to access prescription drug treatment. The persistent hardships faced by disabled beneficiaries are evidence of the inadequacy of strategies in place to lessen the burden of drug costs for vulnerable populations, including the financial protections offered by Medicare Part D.²⁰

We observed a downward trend in CRN until 2009, which reversed in 2010 and 2011. Although these changes over time were not statistically significant, there could be several possible explanations for these findings. After Part D, disabled beneficiaries may have taken several years to grow accustomed to the new benefit and optimize their use of it. Also, several expensive blockbuster drugs lost patent protection during these years, while states, manufacturers, and retailers offered additional forms of assistance.^{9,21–24} In subsequent years, by contrast, extrinsic factors could have worsened medication affordability including the US economic recession and its aftermath.^{25–25} In addition, the generosity of drug coverage within Part D plans, and among US insurers more generally, appeared to decline.²⁶

Our findings demonstrate the unique circumstances of this complex and diverse population, characterized by substantial burdens of mental and physical disabilities and poverty.² Economic barriers to health services in this population extend beyond prescription drug therapy; recent research found that roughly half of nonelderly disabled Medicare beneficiaries reported delaying or skipping health care services because of inability to pay.⁴ Among those who reported such cost-related access problems, a large majority believed their health suffered as a result.

The Affordable Care Act (ACA) of 2010 intends to improve Medicare Part D coverage. A major concern about Part D has been the coverage gap (or “donut hole”): after an initial coverage phase, beneficiaries were faced with 100% out-of-pocket drug payments, until they reached a catastrophic limit. A provision of the ACA aims to phase out the coverage gap, gradually, between 2011 and 2020, by way of new public subsidies and manufacturer

discounts. The slow speed of the gap closure process may leave many struggling with treatment costs in the meantime, and it is unknown how much of the drug cost burden on the disabled will be relieved by this change, given other costs to patients under Part D.²⁷

A stronger policy option may be more vigorous automatic enrollment of poor and near-poor individuals eligible for the Part D low-income subsidy, which assists with both premiums and cost-sharing.^{28,29} In parallel, physicians must discuss out-of-pocket costs with their patients, and adopt effective clinical strategies such as prescribing lower cost medications with comparable benefit-harm profiles.^{30–32} Also, pharmacists should facilitate the modification of drug regimens and selection of less expensive alternatives through medication therapy management.³³

Our findings should be interpreted in light of their limitations. First, the MCBS data did not include information about which medications beneficiaries skipped due to cost considerations. However, previous evidence suggests that patients do not cut back on their medication use selectively based on their clinical needs, but rather, they cut back on both essential and non-essential treatments.^{34,35} Second, self-reports of cost-related medication nonadherence could be subject to recall biases. Nevertheless, the affordability measures used in our study have demonstrated reliability and validity^{8–10} and have been used extensively in research.^{4–6,11–13,29,36–39}

In conclusion, using data on a nationally representative sample of Medicare beneficiaries, this study provides new evidence on long-term trends of CRN and spending less on basic needs for disabled Americans. Our findings demonstrate the ongoing financial burden due to medications facing this population, particularly those with multiple chronic conditions, and highlight the need for an increased policy focus on these highly vulnerable patients.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Annual prevalence of cost-related medication nonadherence and spending less on basic needs among nonelderly disabled Medicare beneficiaries (2004–2011). a, b, c

^a Estimated with survey weights to represent the national population of community-dwelling nonelderly disabled Medicare beneficiaries.

^b Error bars represent 95% CIs around prevalence rates.

^c Corrected CRN measure not available prior to 2006. Due to a survey field error, our composite measure of CRN did not fully capture “not filling a prescription”, and omitted “delay filling” in 2004 and 2005. We estimated 2004 and 2005 CRN values in the figure above by applying the relative increase in CRN (corrected measure vs. the underestimate) observed during 2006–2011.

Figure 2.

Annual prevalence of cost-related medication nonadherence and spending less on basic needs among nonelderly disabled Medicare beneficiaries by illness burden (2006–2011). a, b

^a Estimated with survey weights to represent the national population of community-dwelling nonelderly disabled Medicare beneficiaries.

^b Error bars represent 95% CIs around prevalence rates.

Table 1

Characteristics of community-dwelling nonelderly disabled Medicare beneficiaries in 2007, 2009, and 2011.

Characteristics	% (95% CI)		
	2007 (n = 2614)	2009 (n = 3302)	2011 (n = 2520)
Female sex	47.5 (44.8, 50.3)	47.2 (44.5, 49.9)	47.4 (44.9, 49.9)
Age groups			
55	52.3 (49.5, 54.9)	54.1 (51.3, 56.8)	51.5 (48.9, 54.1)
56–64	47.7 (45.0, 50.4)	45.9 (43.2, 48.6)	48.5 (45.9, 51.0)
Income \$25,000	74.6 (72.0, 77.0)	73.4 (70.7, 76.0)	72.9 (70.7, 75.1)
Educational level			
Above high school	37.4 (34.7, 40.1)	40.1 (36.9, 43.3)	43.8 (41.2, 46.4)
High school	33.9 (31.5, 36.4)	33.5 (31.0, 36.0)	32.0 (29.8, 34.2)
No high school	28.7 (26.6, 30.9)	26.4 (24.1, 28.9)	24.2 (21.8, 26.8)
Non-white race	27.1 (23.9, 30.6)	28.9 (25.8, 32.2)	27.8 (25.1, 30.6)
Number of chronic conditions ^a			
0–2	41.8 (39.1, 44.5)	40.9 (38.1, 43.8)	39.5 (36.9, 42.1)
3+	58.2 (55.5, 60.9)	59.1 (56.2, 61.9)	60.5 (57.9, 63.0)
Self-reported health status			
Excellent, very good, good	39.4 (36.8, 41.8)	40.8 (38.5, 43.0)	40.8 (38.4, 43.0)
Fair or poor	60.6 (58.1, 63.1)	59.2 (56.9, 61.4)	59.2 (56.9, 61.6)
Prescription drug coverage ^b			
Any Medicaid enrollment	39.7 (37.1, 42.4)	40.9 (38.3, 43.5)	42.0 (39.6, 44.6)
Part D with Low Income Subsidy	10.6 (9.0, 12.4)	8.8 (7.4, 10.3)	9.9 (8.4, 11.7)
Part D through Medicare Advantage	7.7 (6.2, 9.4)	10.3 (8.6, 12.2)	11.7 (10.0, 13.3)
Stand-alone Part D plan	9.2 (7.4, 11.0)	11.5 (9.6, 13.6)	10.2 (8.6, 11.8)
Employer-sponsored coverage	18.8 (16.8, 20.8)	17.5 (15.1, 20.3)	14.6 (13.0, 16.5)
Other	5.3 (4.2, 6.5)	3.8 (2.7, 5.0)	4.4 (3.3, 5.9)
None	8.7 (7.4, 10.3)	7.2 (5.9, 8.7)	7.2 (5.8, 8.6)

^aSelf-reported chronic conditions include cardiovascular disease, hypertension, diabetes, cancer, stroke, arthritis, dementia, psychiatric disorder, neurological disorder, and pulmonary illness.

^b Estimated using a combination of self-reported and CMS administrative data, available in the MCBS ATC. Coverage is presented hierarchically such that beneficiaries with a mix of coverage types during the year are counted in the category appearing first. “Other” includes self-purchased plans and other public and private coverage sources, which may not qualify as “creditable”.³¹

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Table 2

Changes in cost-related medication nonadherence (A) and spending less on basic needs (B) among overall and sub-groups of community-dwelling Medicare beneficiaries.

(A) Cost-related medication nonadherence								
Group	No.	Unadjusted prevalence, % ^a					Adjusted OR (95% CI) ^{a, b} 2011 vs. 2007	
		2006	2007	2008	2009	2010		2011
Nonelderly disabled	14,775	35.6	31.6	32.3	31.7	34.0	33.7	1.11 (0.95, 1.30)
No. of morbidities								
0-2	7,279	26.8	24.8	26.0	23.5	25.3	28.1	1.29 (0.97, 1.70)
3	7,496	42.4	36.4	36.5	37.4	39.8	37.3	1.04 (0.86, 1.26)
(B) Spending less on basic needs								
Nonelderly disabled	14,757	21.8	19.0	17.7	18.4	18.3	21.6	1.14 (0.94, 1.39)
No. of morbidities								
0-2	7,268	14.4	14.1	11.1	11.4	11.3	15.7	1.19 (0.83, 1.73)
3	7,489	27.4	22.5	22.1	23.2	22.9	25.4	1.13 (0.90, 1.42)

^a Estimated with survey weights to represent the national population of community-dwelling elderly Medicare beneficiaries.

^b Adjusted with dichotomous variables for age group, sex, race (white vs non-white), income, health, and survey participation (initial vs follow-up interview year). Models for nonelderly disabled overall were further adjusted for morbidity burden (0-2 vs 3 or more).