

Medicare Part D enrollment & medication use & costs in US dialysis patients in 2007

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Introduction

- Medications are used to treat anemia, cardiovascular disease, diabetes, disorders of bone and mineral metabolism, and infection in patients undergoing dialysis.
 - Surveys have found that dialysis patients take 11-12 medications at any point in time (Manley et al, NDT; Chiu et al, CJASN).
 - Access to prescription medication is a critical component of adequate disease management.
 - Medicare Part D is a relatively new prescription drug coverage option.
 - With the basic benefit, patients pay monthly premiums and copayments (varying from 0 to 100% of cost) depending on accumulated drug costs in the calendar year.
 - Patients may receive a low-income subsidy to defray these costs.
 - We investigated Part D enrollment and low-income subsidy status in US dialysis patients in 2007.
 - We also assessed overall utilization of the benefit, as measured by the number of medications used and both gross and out-of-pocket costs.
- We also required patients to have Medicare as the primary payer during all of 2007.
 - We assessed whether patients were dually eligible for both Medicare and Medicaid during all of 2006.
 - Comorbid conditions were defined from diagnosis codes on Medicare claims from 2006, with prevalence marked by ≥ 1 inpatient facility claim or ≥ 2 outpatient facility or physician/supplier claims.
 - Data were linked with 2007 Part D enrollment and drug event data in CMS' Chronic Condition Warehouse.
 - Part D enrollment and low-income subsidy (LIS) receipt were defined positively if they were continuous during all of 2007.
 - We used logistic regression to estimate odds ratios of Part D enrollment and LIS receipt (given Part D enrollment) in patients who were not previously dually eligible, with adjustment for demographics, ESRD Network, and comorbidity.
 - Medication use was assessed in Part D enrollees by counting unique generic ingredients, according to National Drug Codes in drug event data linked to Red Book (2007).
 - We calculated gross drug costs per member (Part D enrollee) and out-of-pocket (OOP) costs per user (enrollee with ≥ 1 drug) per month.

Methods

- From USRDS data, we identified point-prevalent dialysis patients, alive on January 1, 2007.
- We required patients to undergo dialysis during all of 2007.

Results

- In the cohort of 196,101 dialysis patients, 69.2% were enrolled in Part D, higher than in the transplant, chronic kidney disease (CKD), and non-CKD cohorts (Figure 1).
- In patients without dual eligibility ("non-duals"), Part D enrollment was highest in younger adults, blacks, men, and those with less time since ESRD onset (Table 1).
- In non-duals with Part D, LIS receipt was highest in younger patients; men; blacks, American Indians, and Alaska Natives; and those in the first year of ESRD.
- In duals, Part D enrollment was nearly universal, because of administrative auto-enrollment.
- In non-duals, there was almost 3-fold variation in adjusted odds of Part D enrollment across ESRD Networks (Figure 2[a]).
- Congestive heart failure (CHF), other CV disease, GI disease, and liver disease were relatively strong, positive predictors of Part D enrollment, while cancer was a negative predictor (Figure 2[b]).
- In non-duals, there was over 6-fold variation in adjusted odds of LIS receipt across ESRD Networks (Figure 3[a]).
- CHF, other CV disease, COPD, and GI disease were positive predictors of LIS receipt (Figure 3[b]).

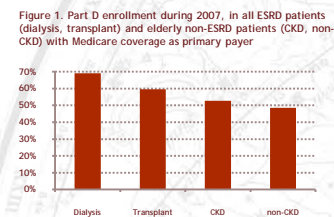


Figure 1. Part D enrollment during 2007, in all ESRD patients (dialysis, transplant) and elderly non-ESRD patients (CKD, non-CKD) with Medicare coverage as primary payer

	Dual eligibility: no		Dual eligibility: yes	
	N	% Part D	N	% Part D
Age				
< 18 yr	225	53.8	222	97.3
18-44 yr	14,302	65.2	81.9	15,560
45-64 yr	47,516	54.6	65.8	31,956
65-74 yr	31,308	50.1	37.5	15,293
75+ yr	30,360	44.2	28.2	9,359
Race				
White	73,900	49.7	43.8	30,723
Black	43,565	56.8	66.7	25,879
Am. Indian/ Alaska Native	1,663	50.2	73.6	1,512
Asian/Pacific Isl.	3,806	48.4	57.3	3,551
Other or unk.	777	45.2	69.8	725
Sex				
Men	51,192	55.2	54.9	38,602
Women	72,519	49.9	52.4	33,788
Primary ESRD cause				
Diabetes	52,337	52.5	55.1	31,298
Hypertension	35,971	53.0	51.9	20,879
Glomeruloneph.	14,165	50.0	54.0	8,449
Cystic kidney	3,813	47.0	45.1	1,444
Other or unk.	17,425	52.1	53.0	10,320
ESRD duration				
< 1.0 yr	32,959	53.2	62.0	7,493
1.0-1.9 yr	20,893	58.1	51.0	11,476
2.0-3.9 yr	29,925	50.2	47.5	19,596
4.0-6.9 yr	21,972	49.2	49.2	16,537
7.0+ yr	17,962	50.0	55.4	17,288

Table 1. Prevalence of 2007 Part D enrollment in all patients and low-income subsidy (LIS) receipt in Part D enrollees, stratified by demographic factors and dual eligibility status in 2006

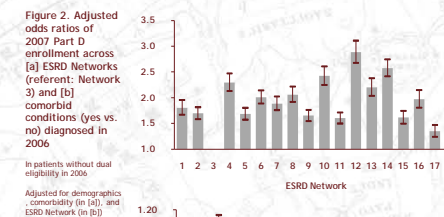


Figure 2. Adjusted odds ratios of 2007 Part D enrollment across (a) ESRD Networks (referent: Network 3) and (b) comorbid conditions (yes vs. no) diagnosed in 2006

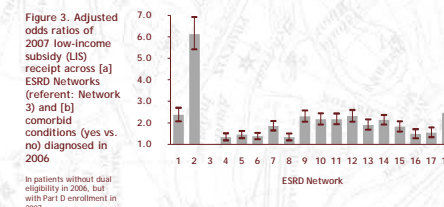


Figure 3. Adjusted odds ratios of 2007 low-income subsidy (LIS) receipt across (a) ESRD Networks (referent: Network 3) and (b) comorbid conditions (yes vs. no) diagnosed in 2006

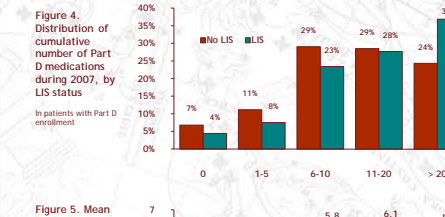


Figure 4. Distribution of cumulative number of Part D medications during 2007, by LIS status

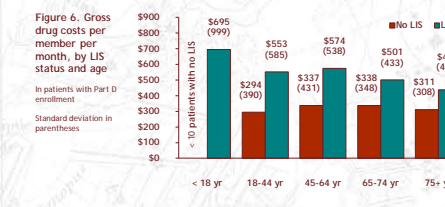


Figure 5. Mean number of Part D medications per patient-day, by LIS status and age

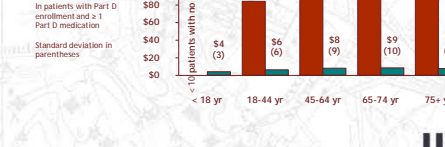


Figure 6. Gross drug costs per member per month, by LIS status and age

Results (cont'd)

- 37% (24%) of LIS (non-LIS) patients used > 20 medications in 2007 (Figure 4).
- Older LIS patients used about 6 medications per day, while non-LIS patients used 4-5 per day (Figure 5).
- Gross costs per member per month were 40 to 90% higher in LIS versus non-LIS patients (Figure 6).
- In non-LIS patients, OOP costs per user ranged from \$84 to \$131 per month (Figure 7).

Conclusions

- Overall Part D enrollment was high, but enrollment rates varied in non-dually eligible patients, particularly across ESRD Networks. Further work is needed to identify reasons for lack of enrollment, including alternative sources of drug coverage.
- Use of multiple medications at any point in time was common.
- On average, LIS patients used more medications than non-LIS patients.
- The majority of patients received the low-income subsidy, but OOP costs were substantial in patients without the subsidy. Further work is needed to assess the effect of OOP costs on persistence in this patient group.