Impact of Medicare Part-D and Generic Drugs on Brand Name Competitors: Longterm Care Center Study

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Abstract

On January 1, 2006, Medicare initiated the biggest change in its history by approving the Part D Prescription Drug Plan in an attempt to lower the soaring cost of prescription drugs dispensed to seniors, partly through conversion to generic drugs. Due to their unique characteristics: polypharmacy, homogeneous age structure, and high prevalence of chronic diseases, there are few studies of the impact of this program on long-term care residents, despite being its heaviest users of prescription medications. In this study, we address whether Part-D and generic availability have significant impact on the selection of brand-name drugs in a delivery setting managed through online orders and electronic prescriptions. Using HMG-CoA reductase inhibitor class (Statin, hereafter) as example, our data from an online pharmacy serving multiple long-term care facilities show that, in general, generic drugs substitute for their brand name counterparts and interfere with their brand name competitors.

Keywords:

Medicare part-D, Generics, Medication choice

Methods

We take each order as our unit of analysis. For example, in the Statin group, each and every Statin drug order is one data record of our analysis. The dependent variable is a drug category (1:Lipitor, 2:Zocor, 3:Simvastatin, 4:Lovastatin, 5:Pravachol, 6:Crestor, 7:Others, 8:Pravastatin) that is prescribed. The controls are patient age, number of diagnoses for the patient, whether the patient is 65 or older at the time of order, whether the order is placed before/after a generic equivalent is available, whether the patient is enrolled in Part-D or other insurance, order years indicating whether the order is before/after Part-D is initiated, and the interaction terms. We choose the Multinomial Logit model, since our analysis is discrete choice model with unordered alternatives. We control for physicians and locations because it is possible that a physician may prescribe his / her preferred drugs to different patients. The base model is the following:

$$Y_i = \alpha + +\beta_1 Gen_i + \beta_2 Age_i + \beta_3 Female_i + \beta_4 PartD_i + \beta_5 NoIns_i + \beta_6 InsNoPartD_i + \beta_7 Diag_i + \gamma_t Yeardummies_t$$

where Y_i is discrete choice of a drug, Age_i is whether or not a patient is over 65, $PartD_i$ is whether the patient holds Part-D, and Gen_i is generic availability dummy. NoIns is a dummy whether the patient does not hold any insurance, and InsNoPartD indicates whether the patient holds an insurance rather than Part-D. Diag is the number of diagnoses of the patient.

Results

	13 locations (04 – 08)		29 locations (05 – 08)	
	Lipitor / Zocor	Simvastatin / Zocor	Lipitor / Zocor	Simvastatin / Zocor
Gen	-1.87279	36.5896***	-0.71417	0.40679
Age	0.35566	-0.93481	0.073635	0.17053
Female	0.22392	-0.44648*	0.10660	-0.045833
Y04	1.06591**	-12.9185***		
Y05	0.24769	-13.2064***	0.30980	-0.57486*
Y06	0.18876	-0.76529*	0.14939	-0.59470**
Y07	0.016075	-0.36657	0.015038	-0.29867+
PartD_valid	-0.26774	18.7400***	-0.12899	-0.17727
age_insnod	-0.34273	17.9963	0.099216	-0.63935
age_noins	-0.76827	18.1051***	-0.017424	-0.24799
InsNoD	1.36672	-15.8455***	0.34400	0.37343
NoIns	0.34328	-18.3531***	-0.14961	0.080299
gen_partd	1.54085	-17.3425	0.59826	-0.25194
gen_noins	1.56316	1.65895	0.62422	-0.33413
age_gen	0.22092	-17.0191***	0.034664	0.25992
Diag	0.017200	-0.00048427	0.0071712	-0.0051387

*+ p<0.10, *p<0.05, **p<0.01, ***p<0.001*

A patient's Part-D program enrollment, generic drug availability, and holding no insurance do not have significant impact on the preference of Lipitor over Zocor. However, preference of Simvastatin over Zocor, its brand name counterpart, is significantly affected by many factors for the data from 13 care centers where the prescription orders exist from 2004 to 2008.

Conclusion

Analysis of Statin drug class shows that preference of prescription drug is not affected by Part-D and generic availability in the case of a leading brand name drug. However, the impact becomes significant for the newly available generic drug's brand-name counterpart.