

Internalizing Behavioral Externalities: Benefit Integration, Health Insurance and Welfare

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Resea

Setting

- Broadly Medicare enrollees can obtain drug coverage in one of two ways
 - through a Medicare Advantage plan that replaces Medicare Parts A and B
 - through a stand-alone Part D plan that supplements Medicare Parts A and B
- The standard Medicare Part D benefit is nonlinear
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- Medicare Part D Event Files
 - 10% of beneficiaries
 - observe each fill
 - aggregate to the beneficiary-year level for 2007-2009
- Medicare Part D Plan Files
 - allow us to merge in plan pricing and formulary information
- county-level demographic information

Summary Statistics: Consumers

- MA-PD plans are adv

IV Results

	OLS	2SLS	IV
1 (Urban)	0.177*** (0.00787)	0.168*** (0.00785)	0.170*** (0.00785)
X	FFS 5 Year		
	0.026	0.027	0.026

- County-level urban status is a strong predictor of MA enrollment.

IV Results

Dependent Variable: Insurer Drug Costs

	514.2***	506.7***	387.5***	1(MA)
	(74.95)	(73.35)	(68.38)	
FFS_Verbose				0.506**
226) Avg. Spending				(0.0

IV Results

Dependent Variable: Insurer Drug Costs

	514.2***	506.7***	387.5***	1(MA)
	(74.95)	(73.35)	(68.38)	
FFS 5 Year				0.506**
226) Avg. Spending				(0.000)
	0.230	0.233	0.252	

Dependent Variable: Total Drug Spending

	109.9***	106.7***	100.7***	1(MA)
	(108.0)	(106.7)	(100.7)	
FFS 5 Year			0.688***	
226) Avg. Spending				(0.000)
	0.230	0.233	0.252	
				B Squared

Are rms correcting for underutilization?

- main effect of increased utilization is concentrated entirely in drugs with big o sets

Are rms correcting for underutilization?

- MA-PD plans have lower OOPC for identical drugs in the same pharmacy of the standard benefit.

	(1)	(2)
1(MA)	0.075***	0.040***
(0.0001)		(0.0002)
	(0.0001)	(0.0004)
124,801,603	124,801,603	Observations
0.673	Adjusted R-Squared	0.607
1(90 Day)		Outcome:
0.001***	1(MA)	0.001***
(0.0001)		(0.0001)
157,091,471	Observations	157,091,471
Products		
	X	X
		All Products

Are firms correcting for underutilization?

- the price effect is larger in drug categories typically targeted by value-based insurance designs

StructuralModel

- premiums, subsidies, drug costs, and shares are taken as given
- elasticities are taken from plan demand system. .358 3.9[s, shänfe

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StructuralModel

- the average stand-alone PDP would save \$91 per member by increasing out-of-pocket costs by \$100
- the average MA-PD plan would only save \$60 per member by increasing out-of-pocket costs by \$1 Results
- As plans spend more on drugs, some of the cost is offset by reductions in spending in other areas.
- Can use these estimates to quantify the size of the externality and drug offsets.

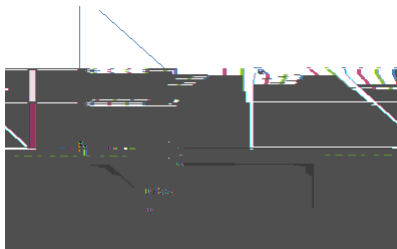
Implied O sets

- Supply model implies the the lighter rectangle can be written as:

$$\frac{\partial c^{Medical}}{\partial P} = q_2 \frac{\partial OOPC}{\partial P};$$

- Demand theory implied the lighter rectangle can be written as:

$$\frac{\partial q}{\partial P} (c - c^0):$$



- Implied discount is 19%.

Counterfactuals: Cost-Sharing Subsidies

- Can the federal government impose a broad cost sharing subsidy that is revenue neutral and improves consumer welfare?
- Calculation change in consumption given a subsidy and increase premiums by the amount of the subsidy net of the offset effect.
- No. Consumers do not appear to be sophisticated about the potential for underconsumption.

StructuralModel

- Pro t for stand-alone plans is given by:

$$j_{mt} = p_{jmt} + r_t^{PDP} C_{jmt}^{Drug} S_{jmt};$$

where p_{jmt} is the premium, r_t^{PDP} is the subsidy, and C_{jmt}^{Drug} are drug costs.

- Pro t for MA-PD plans is given by:

$$j_{mt} = p_{jmt} + r_t^{PDP} + r_{mt}^{MA} C_{jmt}^{Drug} C_{jmt}^{Medical} S_{jmt};$$

where r_{mt}^{MA} is the (separate) MA subsidy and $C_{jmt}^{Medical}$ are non-drug medical costs.

- Object to estimate is:

$$q = \begin{cases} \frac{\partial C_{jmt}^{Drug}}{\partial P_{jmt}^{Phase}} + \frac{\partial C_{jmt}^{Medical}}{\partial P_{jmt}^{Phase}} & \text{if } MA = 1 \\ \frac{\partial C_{jmt}^{Drug}}{\partial P_{jmt}^{Phase}} & \text{if } MA = 0 \end{cases}$$

Plan Demand

- Estimate separate nested logits (Berry 1994) for each quintile of enrollees (based on 2006 drug spending)
 - instrument using our urban dummy and Hausman instruments
- Plan demand is given by:

$$u_{qjt} = X$$

Empirical Implementation of Supply Model

- Infer MA medical costs from first order condition with respect to premium:

$$C_{jmt}^{Medical} = p_{jmt} + r_{mt}^{MA} + \frac{\partial S_{jmt}}{\partial p_{jt}};$$

- Estimate the relation between OOPC and insurer total costs using first order conditions with respect to cost-sharing.

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