Controlling Health Care Costs Through Limited Network Insurance Plans: Evidence from Massachusetts State Employees

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Lower Health Insurance Premiums to Come at Cost of Fewer Choices

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WASHINGTON — Federal officials often say that health insurance will cost consumers less than expected under President Obama's health care law. But they rarely mention one big reason: many insurers are significantly limiting the choices of doctors and hospitals available to consumers.

From California to Illinois to New Hampshire, and in many states in between, insurers are driving down premiums by restricting the number of providers who will treat patients in their new health plans.

When insurance marketplaces open on Oct. 1, most of those shopping for coverage will be low- and moderate-income people for whom price is paramount. To hold down costs, insurers say, they have created smaller networks of doctors and hospitals than are typically found in commercial insurance. And those health care providers will, in many cases, be paid less than what they have been receiving from commercial insurers.

Our Setting

- Massachusetts' Group Insurance Commission (GIC)
  - Offers health insurance for state employees and numerous municipalities.
  - 6 of 11 plans are limited network plans.
- 3-month "premium holiday" for state employees in limited network plans in FY 2012.
  - No corresponding change for municipalities that use GIC.
  - Similar pre-"premium holiday" trends across groups.

GIC Background

- GIC insured 81,420 state employees and 109,343 dependents.
- 23 municipalities purchasing their insurance through the GIC, with 14,232 employees and 19,160 dependents.
  - Municipalities may find the broader negotiating power of the GIC more attractive alternative to local purchasing options
  - 10% of the municipalities in the state were enrolled in the GIC by 2012.

Table 1: GIC Plans

Plan	Enrollment in 2010	Type of Plan	Limited Network
Fallon Community Health Plan Direct Care	1%	HMO	Yes
Fallon Community Health Plan Select Care	3%	HMO	No
Harvard Pilgrim Independence	26%	PPO	No
Harvard Pilgrim Primary Choice Plan	0%	HMO	Yes
Health New England	6%	HMO	Yes
Neighborhood Health Plan	1%	HMO	Yes
Tufts Health Plan Navigator	31%	PPO	No
Tufts Health Plan Spirit	0%	HMO	Yes
Unicare Basic	17%	Indemnity	No
Unicare Community Choice	6%	PPO	Yes
Unicare Plus	9%	PPO	No

What Does “Narrow” Mean?

- No simple definition.
- Intended to exclude the most expensive providers, while still maintaining sufficient coverage.
- We create empirical measure of network breadth:
  - Focus on counties in which plans operate.
  - Consider all physicians for whom we see 5-10 claims.
  - Ask how many of those physicians have in-network claims in each plan.

Table 2: Network Breadth

Plan	Physician	Hospital
Average Limited Network Plan	**0.135**	**0.541**
Fallon Community Health Plan Direct Care	0.066	0.400
Harvard Pilgrim Primary Choice	0.110	0.570
Health New England	0.353	0.923
Neighborhood Health Plan	0.059	0.373
Tufts Spirit	0.054	0.329
Unicare Community Choice	0.166	0.650
Average Broad Network Plan	**0.250**	**0.776**
Fallon Community Health Plan Select Care	0.069	0.360
Harvard Pilgrim Independence	0.367	0.963
Tufts Navigator	0.351	0.827
Unicare Basic	0.263	0.926
Unicare Plus	0.199	0.802

Premium Holiday

- FY 2012 open enrollment featured three-month premium holiday
  - 25% reduction in cost of limited network plans
  - Savings from $268 for cheapest individual plan to $764 for family coverage
- Available to state employees, but not for municipalities

Data

- Complete set of (de-identified) claims and enrollment records for all GIC enrollees.
- Three years of data: fiscal years 2010, 2011, 2012
  - Premium holiday affects FY 2012
- Restrict to continuously enrolled sample of active employees and their dependents:
  - Ensures that the composition of our sample does not change over time.
  - 479,196 annual observations on 159,732 enrollees.
  - 86% obtained coverage through the state.
  - 14% obtained coverage through one of 21 municipalities.

Table 3: Means

	Mean (Standard Deviation)
Enrolled in Limited Network Plan	0.201 (0.400)
Savings from switching to limited network plan (as a share of employee contribution to broad network plan)	36.55% (9.64)
Total expenses	$4,811 (15,132)
N	479,196

DD Around Policy Change

- $Y_{imt} = \alpha + \beta STATE_m * POST_t + \gamma MUNI_m + \tau YEAR_t + \delta X_{imt} + \varepsilon_{imt}$

  where
  - i indexes individuals
  - m indexes municipalities (and state)
  - t indexes years.

- β captures the change for state workers after the premium holiday, relative to before, and compared to the change over the same time period for municipal workers.

Interpretation: Marginal Compliers

- Our estimates of β are identified solely by the compliers that switch plans in response to financial incentives.
- Estimates are *not* a population average estimate of the impact of forcing all enrollees to enroll in a limited network
- But current policy conversations center around employee and exchange choice, which consider limited network plans as a choice option, not the mandated default.

Figure 1, Panel A: Financial Incentives

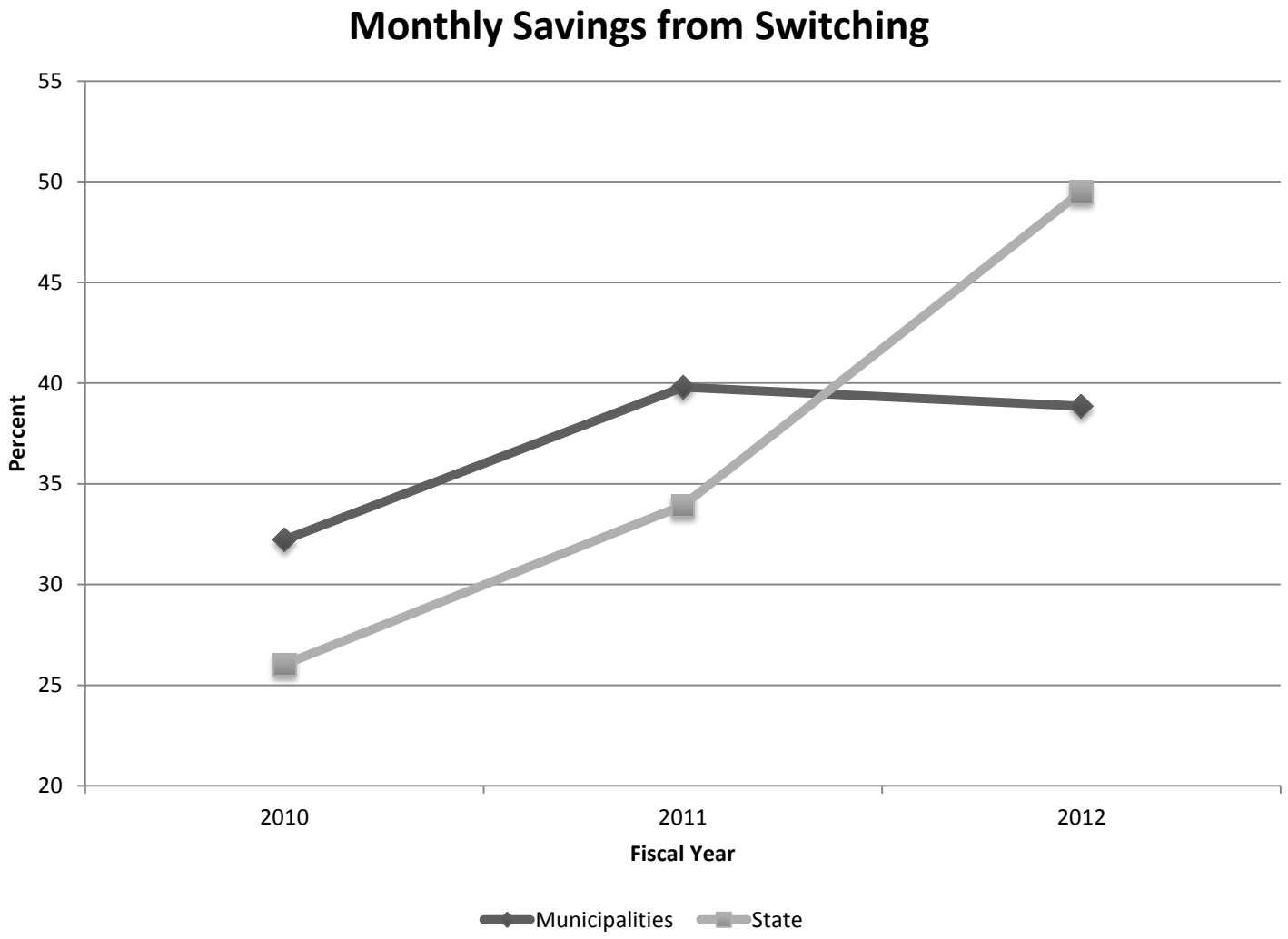

Figure 1, Panel B: Enrollment

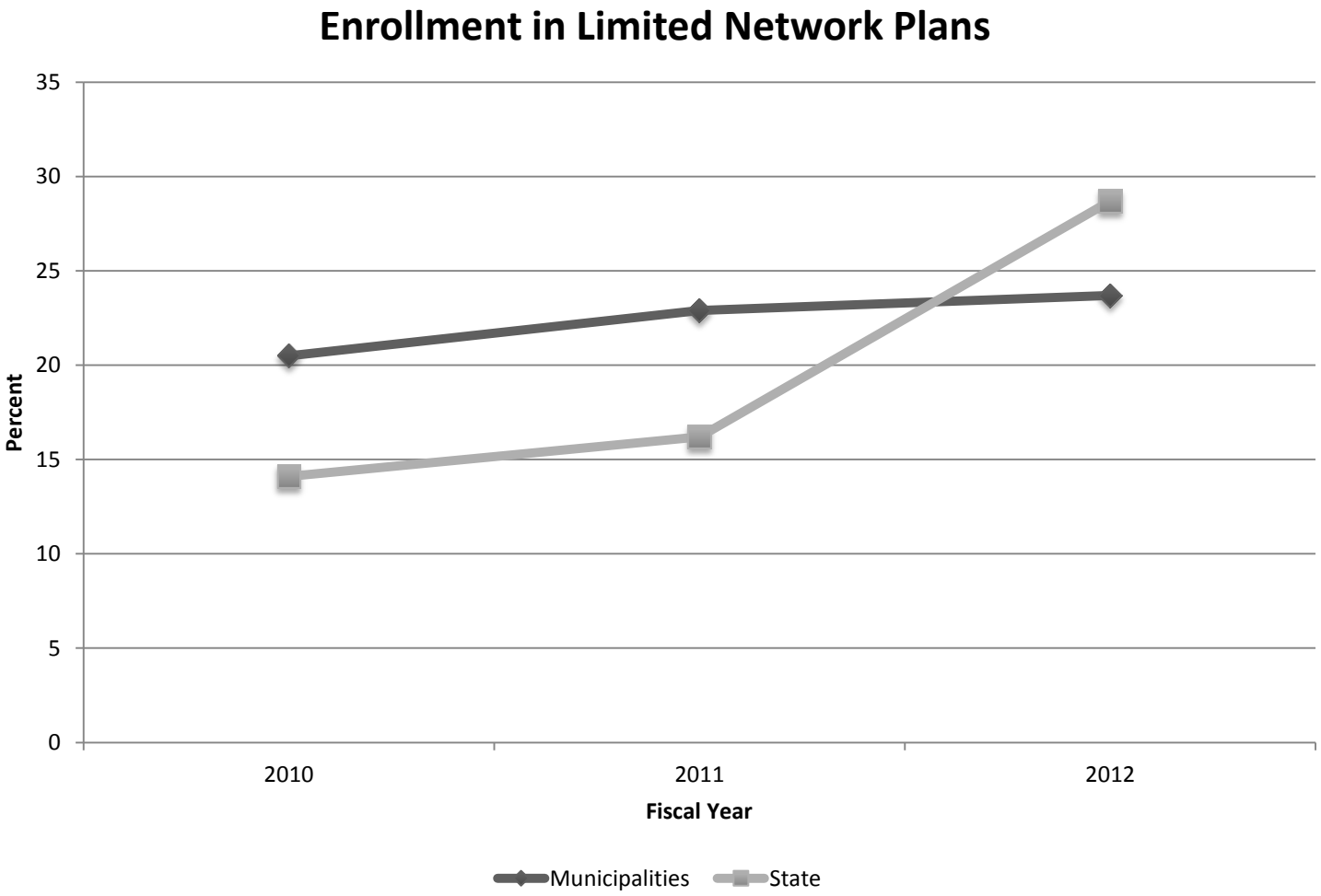

Table 4: First Stage

Independent Variable	Differences-in-Differences	Full price variation
State Employees * Post	0.1165** (0.0036)	
Savings from Limited Network Plan		0.0070** (0.0002)
Number of Observations	479,196	479,196

Table 5: Heterogeneity by Health

Sample	Differences-in-Differences	Full price variation
Full Sample	0.116**	0.0070**
	(0.004)	(0.0002)
Chronically ill *(N=132,727)*	0.104**	0.0063**
	(0.003)	(0.0002)
Not chronically ill *(N=346,469)*	0.121**	0.0073**
	(0.004)	(0.0002)

Table 5: Heterogeneity by Insurer

Sample	Differences-in-Differences	Full price variation
Full Sample	0.116**	0.0070**
	(0.004)	(0.0002)
Fallon	0.132**	0.0076**
(N=16,728)	(0.001)	(0.0002)
Harvard	0.173**	0.0100**
(N=112,119)	(0.004)	(0.0004)
Tufts	0.064**	0.0038**
(N=152,250)	(0.001)	(0.0001)
Unicare	0.075**	0.0047**
(N=123,330)	(0.004)	(0.0002)
Other plans / switchers	0.219**	0.014**
(N=74,769)	(0.013)	(0.001)

Table 5: Heterogeneity by Primary Care Inclusion in Network

Sample	Differences-in-Differences	Full price variation
Full Sample	0.116**	0.0070**
	(0.004)	(0.0002)
Can keep PCP and insurer *(N=187,656)*	0.168**	0.0100**
	(0.006)	(0.0003)
Can keep PCP, different insurer *(N=76,125)*	0.127**	0.0077**
	(0.010)	(0.0006)
PCP not in a limited network plan *(N=43,197)*	0.101**	0.0061**
	(0.002)	(0.0002)

Figure 2: Spending

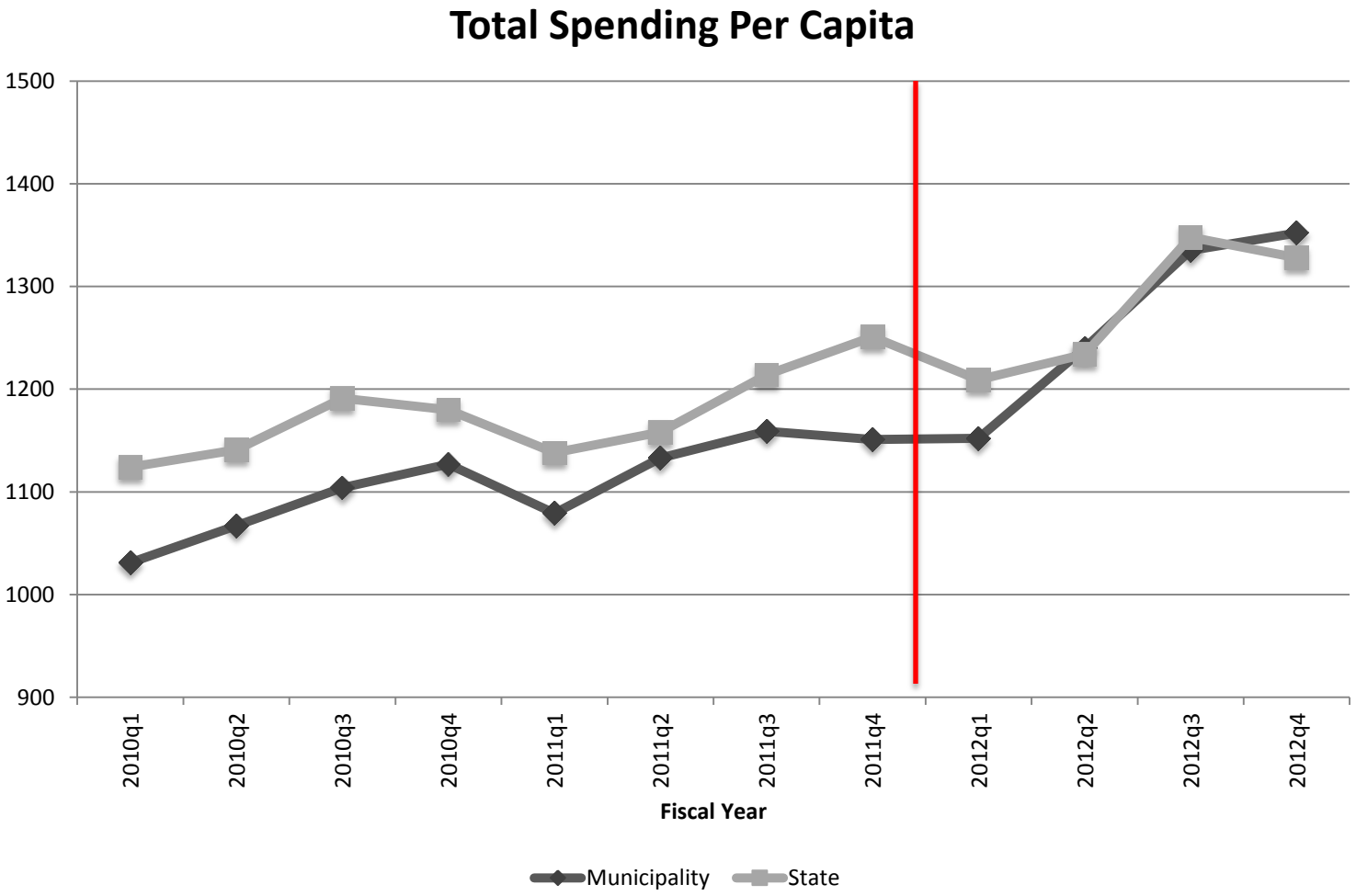

Table 6: Spending

Dependent Variable	Differences-in-Differences	Full price variation
Total Spending	**-0.042***	**-0.0029****
	(0.022)	**(0.0013)**
Office Visits	-0.018*	-0.0012*
	(0.010)	(0.0006)
Inpatient Hospitalization	-0.056	-0.0048
	(0.071)	(0.0043)
Outpatient Hospitalization	-0.050*	-0.0033**
	(0.025)	(0.0015)
Emergency Room	-0.095*	-0.0054*
	(0.055)	(0.0032)
Labs & X-rays	-0.083*	-0.0047
	(0.049)	(0.0029)
Drugs	0.003	0.0003
	(0.017)	(0.0011)
Other	-0.111**	-0.0074**
	(0.054)	(0.0036)
N	479,196	479,196

Table 7: Decomposing Spending

Dependent Variable	Total Spending (GLM)	Any Visits (OLS)	Number of Visits (OLS)	Cost per Visit (OLS)
Office Visits	-0.018*	0.0001	-0.154*	-0.127
	(0.010)	(0.0026)	(0.083)	(2.087)
Inpatient Hospitalization	-0.056	-0.0005	-0.0006	-861.59
	(0.071)	(0.0020)	(0.0027)	(845.44)
Outpatient Hospitalization	-0.050*	-0.0086	-0.103	-20.00*
	(0.025)	(0.0053)	(0.071)	(11.51)
Emergency Room	-0.095*	0.0025	-0.0051	-93.82*
	(0.055)	(0.0030)	(0.0040)	(48.86)
Labs & X-rays	-0.083*	-0.0019	-0.036	-4.60
	(0.049)	(0.0073)	(0.022)	(4.05)
Drugs	0.003	0.0039	-0.386**	2.08
	(0.017)	(0.0042)	(0.113)	(1.82)
Other	-0.111**	-0.034**	-0.075**	-4.19
	(0.054)	(0.010)	(0.027)	(21.45)
N	479,196	479,196	479,196	Varies

Table 8: Type of Physician

	Total Spending (GLM)	Any Visits (OLS)	Number of Visits (OLS)	Cost per Visit (OLS)
		Primary Care vs. Specialists		
Primary Care	0.030**	-0.002	0.040*	1.95
	(0.015)	(0.005)	(0.023)	(2.09)
Specialists	-0.051**	-0.007	-0.153**	-3.27
	(0.013)	(0.007)	(0.069)	(3.54)
Other	-0.014	-0.0001	-0.027*	18.87**
	(0.077)	(0.0046)	(0.015)	(6.38)
		Old vs. New Providers		
Old Providers	-0.034**	0.004	-0.142**	-2.27
	(0.011)	(0.003)	(0.042)	(1.83)
New Providers	0.056**	0.016**	0.051*	7.13**
	(0.013)	(0.007)	(0.028)	(1.40)
N	479,196	479,196	479,196	Varies

Table 9a: Access

Type of Service	Mean of dep. variable	DD Coefficient
Office Visits	9.82	-0.114
	(9.45)	(0.131)
Primary Care	8.19	-0.659**
	(10.69)	(0.278)
Specialists	10.53	0.038
	(10.11)	(0.183)
Other Office Visits	9.88	-0.151
	(15.59)	(0.447)
Old Providers	9.49	-0.363**
	(10.27)	(0.147)
New Providers	12.59	0.857**
	(12.82)	(0.377)
Inpatient Hospitalization	28.10	4.538**
	(26.81)	(2.149)
Outpatient Hospitalization	14.58	-1.193**
	(13.00)	(0.333)
Emergency Room	23.70	-1.647**
	(25.13)	(0.729)

Table 9b: Access

Measure of Hospital Quality	Mean of dep variable	DD Coefficient
30-Day Mortality Rate, AMI	13.81	-0.002
	(1.24)	(0.040)
30-Day Mortality Rate, Heart Failure	10.34	0.031
	(1.28)	(0.078)
30-Day Mortality Rate, Pneumonia	11.04	0.062
	(1.50)	(0.112)
30-Day Readmission Rate, AMI	19.07	-0.054
	(1.25)	(0.067)
30-Day Readmission Rate, Heart Failure	23.68	0.016
	(1.46)	(0.041)
30-Day Readmission Rate, Pneumonia	18.24	-0.044
	(1.27)	(0.050)
30-Day Readmission Rate, Hip or Knee Surgery	5.51	0.026
	(0.68)	(0.018)
30-Day Readmission Rate, All Cause	16.46	-0.035
	(1.05)	(0.039)

Heterogeneity by Enrollee Type

- Overall spending effects similar for those with and without chronic illness.
  - No evidence of reduced physician access for chronically ill, with primary care increasing.
- Largest declines in spending for those who are able to keep their PCP when they switch.
- Declines in spending occur broadly across the diagnosis spectrum.

Table 10b: Heterogenity by Network Breadth (1)

Spending Measure	PCP in limited plan, same insurer	PCP in limited plan, different insurer	PCP Not in limited network plan
Total Spending	**-0.072****	**-0.130****	**0.047**
	(0.024)	**(0.055)**	**(0.045)**
Office Visits	-0.012	-0.047**	0.006
	(0.015)	(0.019)	(0.053)
Primary Care	0.032**	0.046	0.053
	(0.010)	(0.036)	(0.065)
Specialist	-0.039*	-0.122**	-0.033
	(0.021)	(0.027)	(0.072)
Other office visits	-0.204	0.168	-0.041
	(0.159)	(0.149)	(0.225)
Old Providers	0.007	-0.071**	-0.189*
	(0.017)	(0.022)	(0.097)
New Providers	0.086**	0.055	0.059
	(0.025)	(0.086)	(0.069)
N	187,656	76,125	43,197

Table 10b: Heterogenity by Network Breadth (2)

Spending Measure	PCP in limited plan, same insurer	PCP in limited plan, different insurer	PCP Not in limited network plan
Total Spending	**-0.072** **(0.024)**	**-0.130** **(0.055)**	**0.047** **(0.045)**
Inpatient Hospitalization	-0.270** (0.133)	-0.097 (0.179)	Insufficient data
Outpatient Hospitalization	-0.095** (0.036)	-0.202** (0.086)	0.171** (0.085)
Emergency Room	-0.121 (0.074)	-0.289** (0.086)	Insufficient data
Labs & X-rays	-0.110 (0.082)	-0.134 (0.140)	-0.019 (0.120)
Drugs	0.021 (0.024)	-0.002 (0.056)	-0.054 (0.064)
Other	-0.041 (0.038)	-0.174 (0.175)	-0.190* (0.104)
N	187,656	76,125	43,197

Conclusions (1)

- Patients are very price sensitive in their decisions to switch to limited network plans, with a price elasticity above one.
  - There is modest adverse selection associated with such price incentives
- Large premium differential between broad and limited network plans is driven not simply by selection, but by real reductions in spending among those induced to switch plans.
- Rather, the reduction arises from less spending on specialists and hospital care.

Conclusions (2)

- The fact that primary care use is rising, while emergency room and hospital spending is falling, suggests that the move to limited network plans is not adversely impacting health, although we are unable to demonstrate health effects with any certainty.
- Effects for both more and less healthy.
- But driven by those who keep their primary care doc.
- Suggests that savings come from downstream restrictions

Conclusions (3)

- Fiscally beneficial to MA? Yes!
- Employer premium contribution was 1.2% percent lower than it would have been if all of marginal enrollees had stayed in broad plans
  - 2.8% savings from switching to limited network plans among marginal switchers
  - 1.6% loss from premium holiday
- Suggests long run benefits much larger, given high inertia

Conclusions (4)

- Most important caveat to our results is that they apply to one particular example,
  - May not be able to extrapolate them to other limited network plans, such as those on state exchanges.
- An important goal for future work should be to extend this analysis to those other examples.
- Should be very feasible given that the tax credits available under the ACA provide distinctly non-linear price differentials across health insurance options