

More Doctors in Town Now? Evidence from Medicaid Expansions

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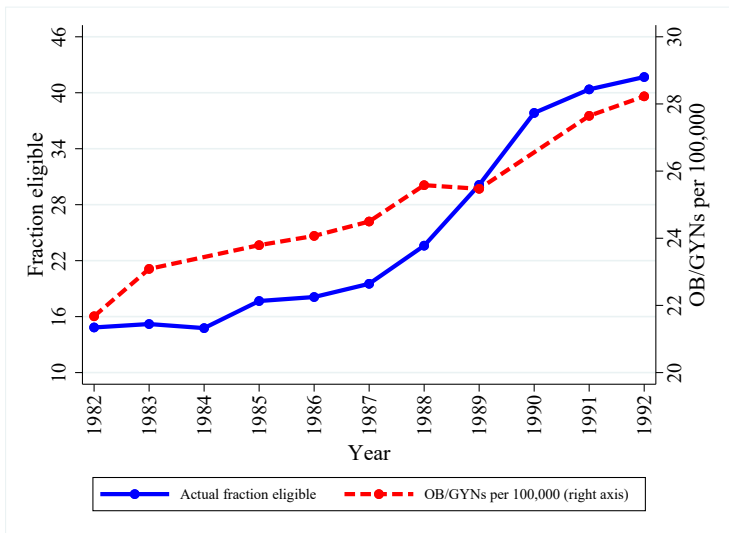
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- One main goal of Medicaid expansions is to increase access to health care services
- Expanding Medicaid may not increase access to services if health care providers are not available to care for eligible population
 - Shortage or maldistribution
- It is important to understand how providers' practice locations respond to Medicaid expansions

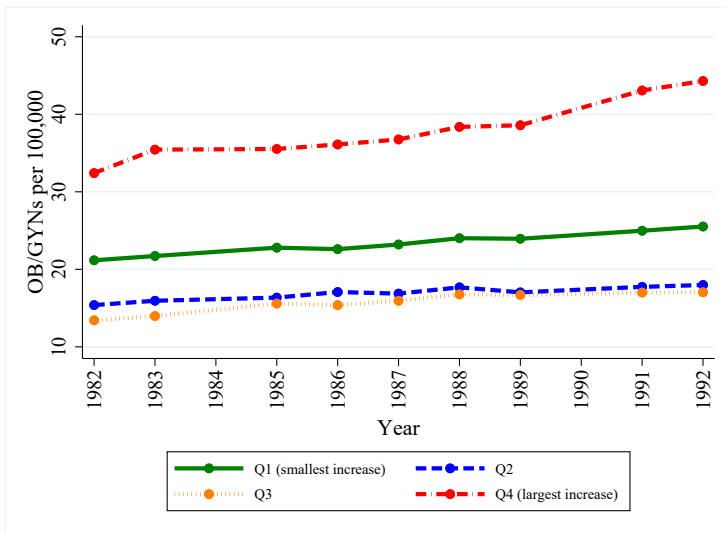
- Medicaid eligibility expansions for pregnant women between the early 1980s and early 1990s
- Expansions at very different rates across states and over time during our sample years 1982-1992
 - Fraction of pregnant women aged 15-44 eligible for Medicaid increased from 15 to 42 percent
- Focus on obstetricians and gynecologists (OB/GYNs) and examine how their practice location decisions may have been affected

- Much of previous literature examining Medicaid expansions is concerned with demand-side outcomes
 - E.g., increased prenatal care utilization, and reduced infant mortality and low birth weight (Currie and Gruber, JPE 1996)
- Far less is known about the effects on providers
 - Buchmueller et al. (AEJ 2016); Garthwaite (AEJ 2012); Baker and Royalty (JHR 2000); Huh (JPubE 2021)
- Literature lacks research on an important supply-side outcome, providers' practice locations
 - Intensive vs. extensive margin of supply

Changes in fraction eligible and OB/GYN supply, 1982-1992



Changes in OB/GYN supply by expansion size, 1982-1992



- Main sources of data:
 - County-level OB/GYN counts from American Medical Association's (AMA) Physician Masterfile 1982-1992
 - Medicaid eligibility rates and Medicaid-to-private fee ratios from Currie and Gruber (JPE 1996)
 - County-level controls from Area Health Resources Files (AHRF) and Surveillance, Epidemiology, and End Results (SEER) Program
 - County-level poverty rates in 1980 and 1990 from U.S. Census Bureau, and 1983 urban-rural indicators from Economic Research Service (ERS)
- All data were collected at the annual level

Summary statistics

Variable	All counties		Metro counties		Non-metro counties	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
OB/GYNs per 100,000	26.31	139.54	32.38	24.33	24.34	159.93
Early-career OB/GYNs per 100,000	6.68	38.37	8.19	8.38	6.19	43.88
Mid-career OB/GYNs per 100,000	12.18	66.90	14.60	12.01	11.39	76.67
Late-career OB/GYNs per 100,000	7.45	39.94	9.58	8.73	6.76	45.67
Income per capita (in \$)	12574.94	3737.72	14706.45	4339.35	11883.74	3231.80
Unemployment rate (in %)	7.66	3.49	6.57	2.61	8.01	3.66
Population density (per square mile)	55.56	440.35	199.44	874.20	8.91	10.31
Population female aged 15-44 (in %)	21.58	2.56	23.81	1.98	20.85	2.30
Population black (in %)	11.20	15.66	11.84	12.07	10.99	16.66
N	23,592		5,777		17,815	

- Estimating equation 1:

$$Y_{ct} = \beta_0 + \beta_1 ER_{s(t-1)} + \gamma X_{ct} + \theta_c + \delta_t + \varepsilon_{ct}$$

- Outcome: total number of OB/GYNs per 100,000 females aged 15-44 in county i in year t
- Key variable of interest: lagged eligibility rate in state s in year t
- County-level controls: per capita income, unemployment rate, % population females aged 15-44, % population black, and population density
- Weighted by county-specific population
- Standard errors clustered by state

- Estimating equation 2:

$$Y_{ct} = \beta_0 + \beta_1 ER_{s(t-1)} + \beta_2 ER_{s(t-1)} \times Metro_c + \gamma X_{ct} + \theta_c + \delta_t + \varepsilon_{ct}$$

- β_1 measures the baseline effect on physician supply for non-metropolitan areas
- $\beta_1 + \beta_2$ measures the corresponding effect for metropolitan areas

Simulated eligibility approach

- Eligibility rate index: fraction of women aged 15-44 in each state and year actually eligible for Medicaid benefits
- Actual fraction eligible is likely correlated with economic and demographic characteristics of states that may also *have correlations* with physician supply and the scope and scale of Medicaid program

Simulated eligibility approach (Cont'd)

- Instrument from Currie and Gruber (JPE 1996):
 - 1) A fixed random sample of 3,000 women from the CPS
 - 2) Calculate the fraction of this sample who would be eligible for Medicaid according to each state's Medicaid eligibility rules
- Simulated fraction eligible relies only on the differences in Medicaid eligibility rules across states and is independent of other underlying characteristics of states

Results for all OB/GYNs

Increase of about 3 ($= 0.1045 \times 26.85$) OB/GYNs per 100,000 in counties with moderate poverty, concentrated in metropolitan counties

Coefficient	OLS estimation		IV estimation	
	(1)	(2)	(3)	(4)
All				
Fraction eligible	0.0179 (0.0303)	-0.0359 (0.0330)	0.0178 (0.0295)	-0.0365 (0.0319)
Fraction eligible + Fraction eligible × Metropolitan		0.0521 (0.0445)		0.0517 (0.0422)
Low poverty				
Fraction eligible	-0.0037 (0.0436)	-0.0720 (0.0446)	-0.0109 (0.0421)	-0.0802* (0.0436)
Fraction eligible + Fraction eligible × Metropolitan		0.0080 (0.0462)		0.0020 (0.0448)
Moderate poverty				
Fraction eligible	0.1013*** (0.0317)	0.0050 (0.0366)	0.1045*** (0.0302)	0.0086 (0.0349)
Fraction eligible + Fraction eligible × Metropolitan		0.1262*** (0.0363)		0.1320*** (0.0341)
High poverty				
Fraction eligible	-0.0439 (0.1055)	-0.0781 (0.1114)	-0.0342 (0.0986)	-0.0688 (0.1035)
Fraction eligible + Fraction eligible × Metropolitan		0.0331 (0.1346)		0.0388 (0.1281)

Effects driven by newly graduated OB/GYNs

Increase of about 2 (= 0.0640×26.85) early-career OB/GYNs per 100,000 in metropolitan counties with moderate poverty

Coefficient	OLS estimation			IV estimation		
	Early career (1)	Mid-career (2)	Late career (3)	Early career (4)	Mid-career (5)	Late career (6)
All						
Fraction eligible	-0.0371* (0.0207)	-0.0029 (0.0214)	0.0041 (0.0202)	-0.0403** (0.0200)	-0.0003 (0.0203)	0.0040 (0.0204)
Fraction eligible + Fraction eligible × Metropolitan	0.0063 (0.0275)	0.0365 (0.0253)	0.0093 (0.0200)	0.0031 (0.0264)	0.0396 (0.0247)	0.0090 (0.0195)
Low poverty						
Fraction eligible	-0.0440 (0.0285)	-0.0093 (0.0354)	-0.0186 (0.0279)	-0.0512* (0.0277)	-0.0061 (0.0337)	-0.0229 (0.0301)
Fraction eligible + Fraction eligible × Metropolitan	-0.0280 (0.0302)	0.0362 (0.0319)	-0.0002 (0.0228)	-0.0321 (0.0284)	0.0389 (0.0301)	-0.0048 (0.0245)
Moderate poverty						
Fraction eligible	-0.0171 (0.0321)	0.0036 (0.0337)	0.0186 (0.0303)	-0.0156 (0.0303)	-0.0028 (0.0310)	0.0271 (0.0291)
Fraction eligible + Fraction eligible × Metropolitan	0.0606* (0.0301)	0.0305 (0.0284)	0.0351 (0.0237)	0.0640** (0.0282)	0.0255 (0.0264)	0.0424* (0.0230)
High poverty						
Fraction eligible	-0.0507 (0.0420)	-0.0402 (0.0495)	0.0129 (0.0397)	-0.0559 (0.0405)	-0.0260 (0.0453)	0.0131 (0.0368)
Fraction eligible + Fraction eligible × Metropolitan	0.0037 (0.0720)	0.0318 (0.0524)	-0.0024 (0.0466)	-0.0068 (0.0683)	0.0495 (0.0518)	-0.0039 (0.0433)

Heterogeneity by existing supply of OB/GYNs

Focusing on early-career OB/GYNs, effects concentrated in counties with high existing supply

Coefficient	OLS estimation		IV estimation	
	Low supply (1)	High supply (2)	Low supply (3)	High supply (4)
Low poverty				
Fraction eligible	0.0376 (0.0358)	-0.0562* (0.0325)	0.0296 (0.0315)	-0.0643** (0.0319)
Fraction eligible + Fraction eligible × Metropolitan	-0.0149 (0.0345)	-0.0291 (0.0318)	-0.0222 (0.0335)	-0.0332 (0.0298)
Moderate poverty				
Fraction eligible	0.0189 (0.0374)	-0.0220 (0.0354)	0.0119 (0.0347)	-0.0207 (0.0335)
Fraction eligible + Fraction eligible × Metropolitan	-0.0202 (0.0528)	0.0730** (0.0334)	-0.0214 (0.0494)	0.0765** (0.0313)
High poverty				
Fraction eligible	0.0160 (0.0266)	-0.0790 (0.0567)	0.0104 (0.0227)	-0.0844 (0.0539)
Fraction eligible + Fraction eligible × Metropolitan	0.0468 (0.0453)	-0.0275 (0.0937)	0.0382 (0.0392)	-0.0395 (0.0887)

Conclusion

- Changes in physician supply due to Medicaid eligibility expansions are associated with poverty level and metropolitan status
- Effects mainly driven by early-career OB/GYNs
- Resulting changes may partially arise from a flow of new OB/GYNs from non-metropolitan counties to metropolitan counties with high take-up rates
- Effects not equal across counties!