

Jessica Bing Ying Poon

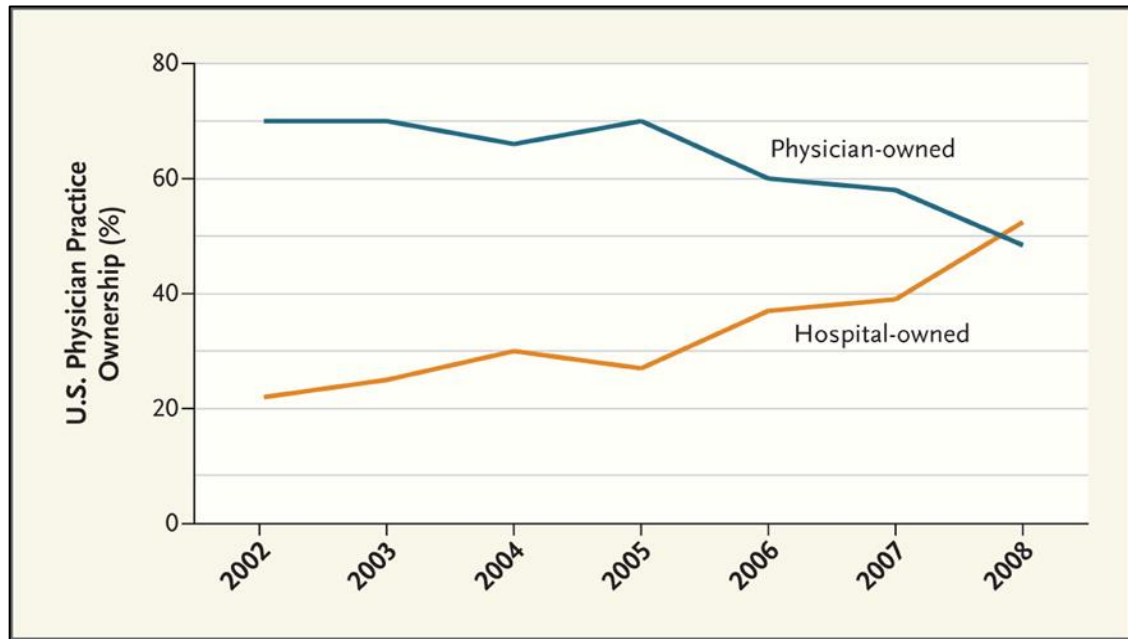
Center for Health Organizational and Innovation Research

University of California, Berkeley | School of Public Health

**ARE MEDICAL PRACTICES OWNED BY
HEALTHCARE SYSTEMS LESS PATIENT
CENTERED THAN THOSE OWNED BY
PHYSICIANS?**

Physician ownership has decreased.

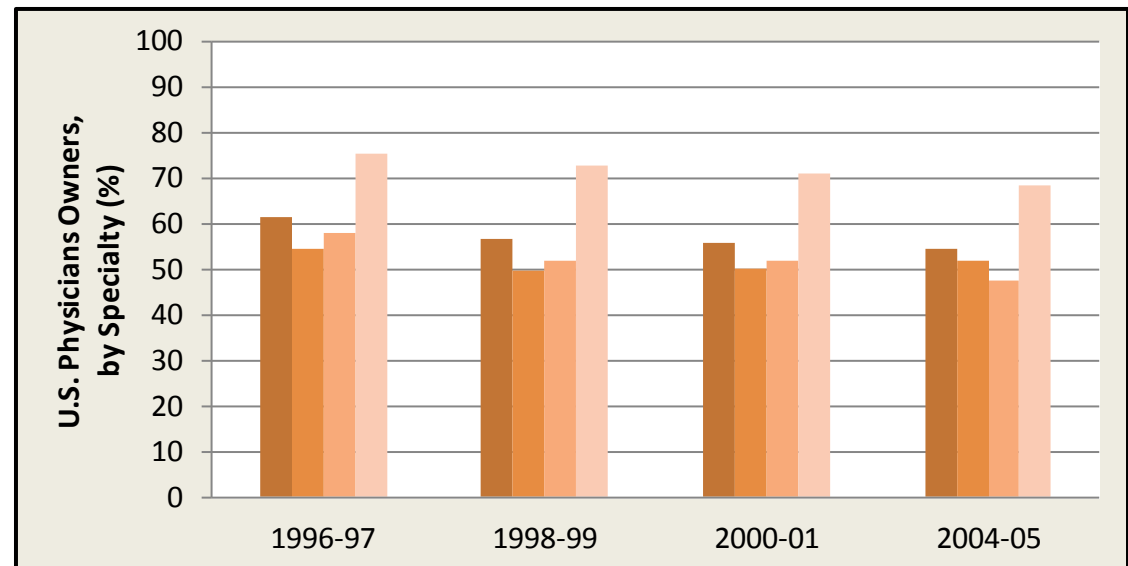
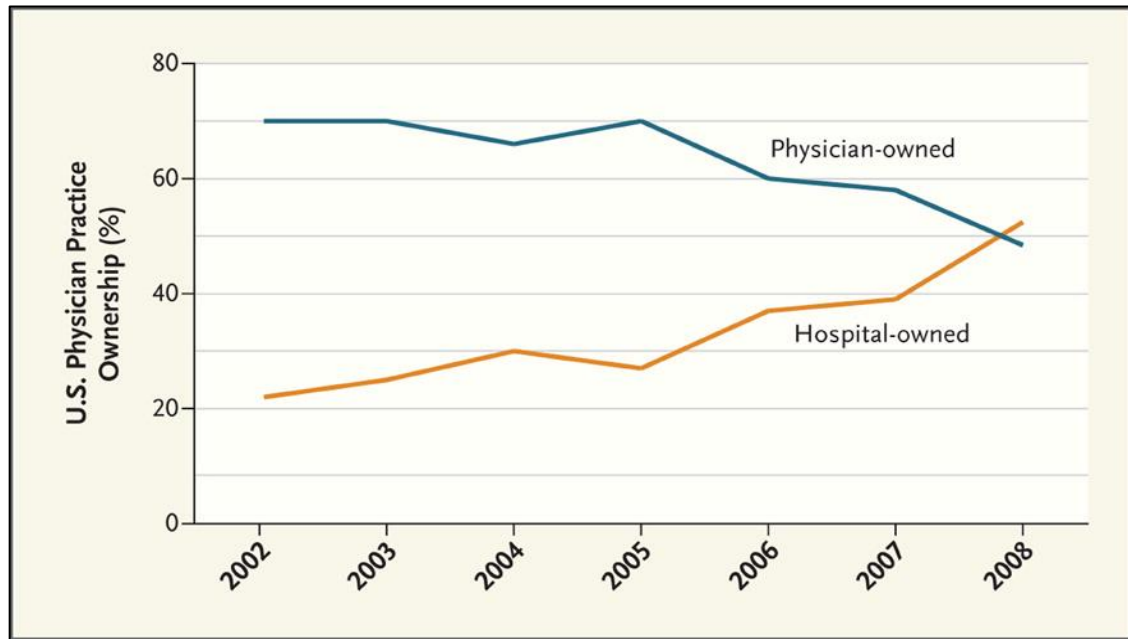
¹ Robert Kocher and Nikhil R. Sahni, "Hospitals' Race to Employ Physicians — The Logic behind a Money-Losing Proposition," *New England Journal of Medicine* 364, no. 19 (May 12, 2011): 1790–93, doi:10.1056/NEJMp1101959.



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² Allison Liebhaber and Joy M. Grossman, "Physicians Moving to Mid-Sized, Single-Specialty Practices," *Tracking Report / Center for Studying Health System Change*, no. 18 (August 2007): 1–5. Bars from dark to light: all physicians, primary care, medical specialists, surgical specialists.



The impact of systems ownership is mixed.

¹ James C. Robinson and Kelly Miller, "Total Expenditures per Patient in Hospital-Owned and Physician-Owned Physician Organizations in California," *JAMA* 312, no. 16 (October 22, 2014): 1663–69, doi:10.1001/jama.2014.14072.

- Higher costs per patient.¹

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- Higher costs per patient.¹
- Higher utilization of patient centered medical home (PCMH) processes.²

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⁴ Grant R. Martsolf et al., "The Patient-Centered Medical Home and Patient Experience," *Health Services Research* 47, no. 6 (December 2012): 2273–95, doi:10.1111/j.1475-6773.2012.01429.x.

- Higher costs per patient.¹
- Higher utilization of patient centered medical home (PCMH) processes.²
- Higher utilization of care management processes (CMP).³
- However, use of PCMH processes not related to patient experience of care.⁴

What is the impact of ownership on the patient centeredness of practice culture?

Study Population

Hector P. Rodriguez et al., "Increased Use of Care Management Processes and Expanded Health Information Technology Functions by Practice Ownership and Medicaid Revenue," *Medical Care Research and Review: MCRR* 73, no. 3 (June 2016): 308–28, doi:10.1177/1077558715613233.

Stephen M. Shortell et al., "Improving Chronic Illness Care A Longitudinal Cohort Analysis of Large Physician Organizations," *Medical Care* 47, no. 9 (2009): 932–39.

NSPO2
(2006-2007)
N=557

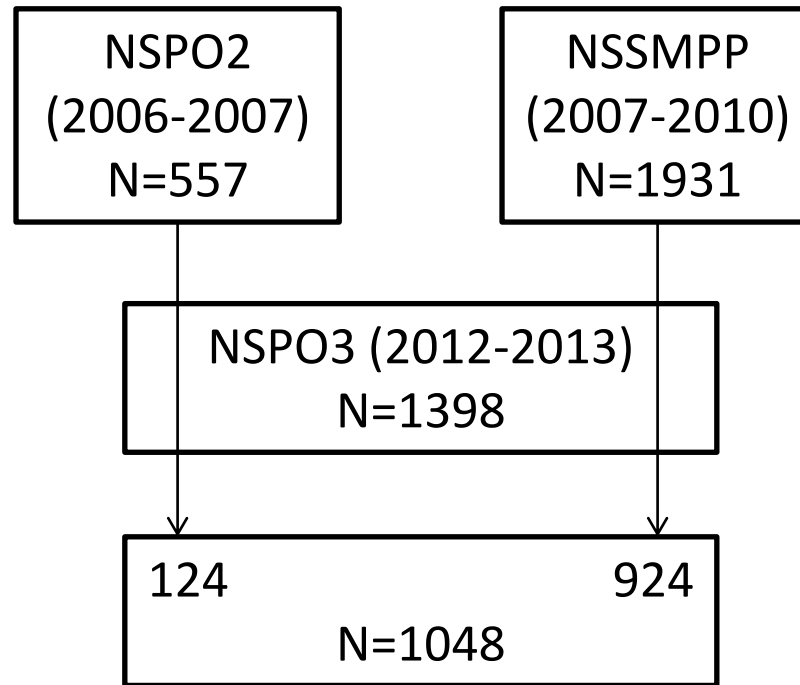
NSSMPP
(2007-2010)
N=1931

NSPO3 (2012-2013)
N=1398

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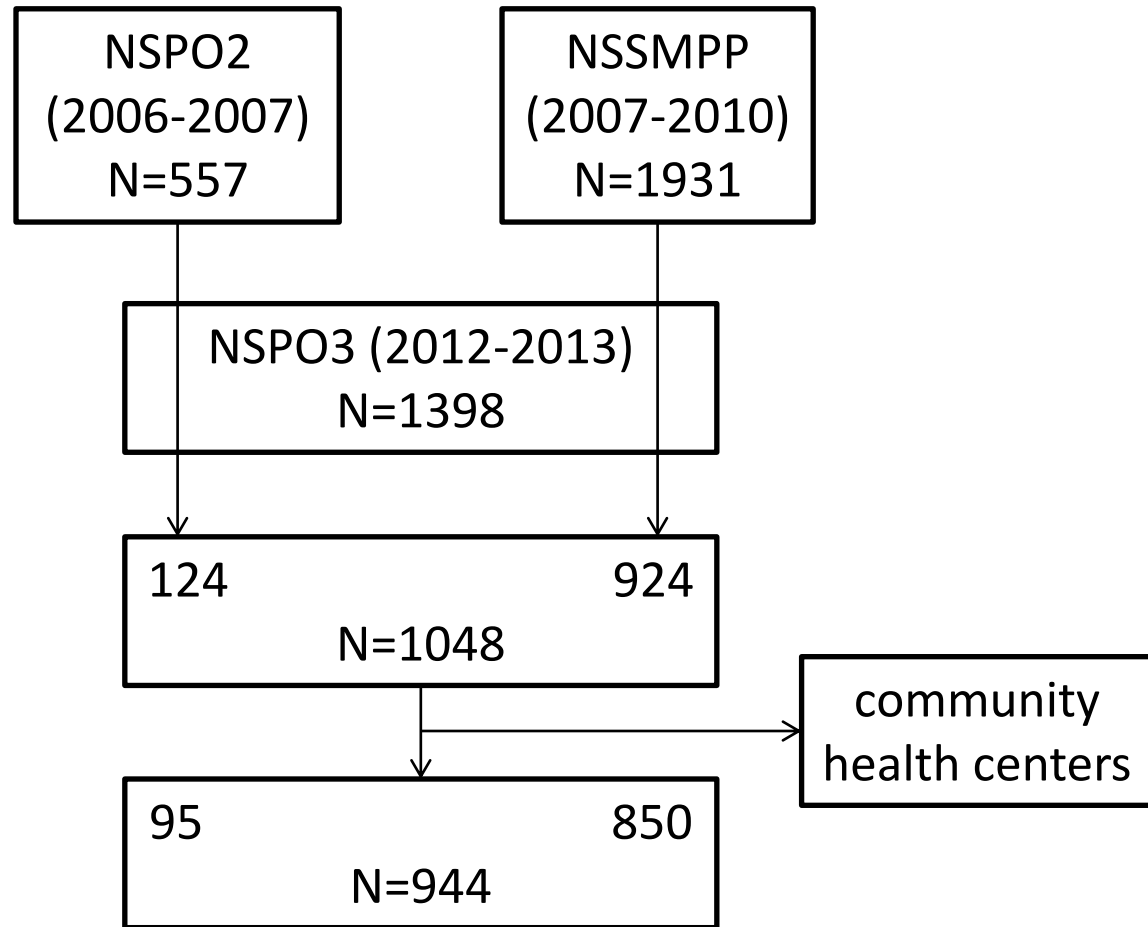
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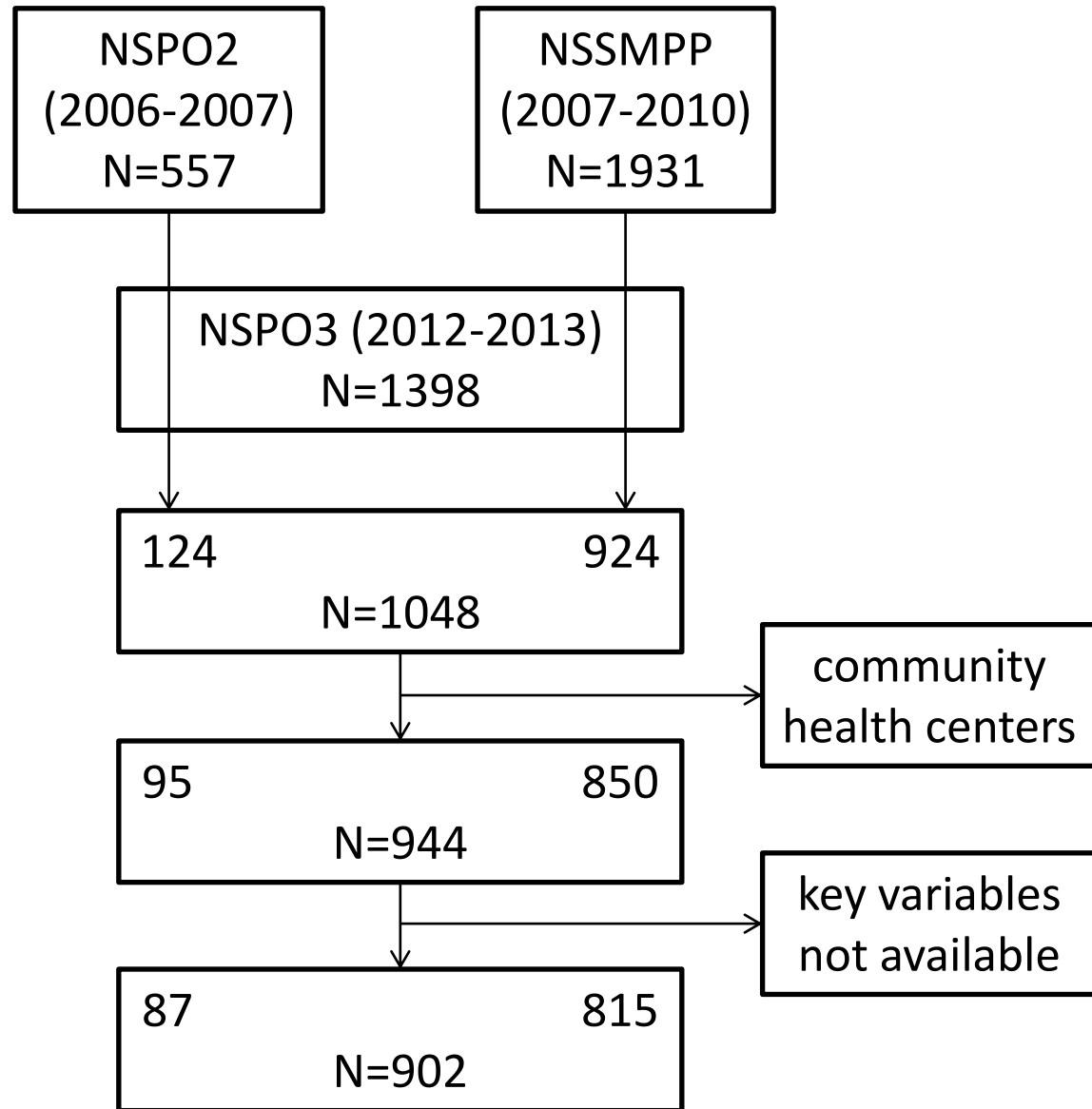
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Method & Model

Analysis using multivariable linear regression.

Outcome

- Change in patient centered culture (PCC)

Predictor

- Ownership

Control

- Practice size at baseline and change over time
- Proportion primary care practitioners (PCP) at baseline and change over time
- Proportion Medicaid revenue at baseline and change over time
- CMP Index at baseline and change over time
- PCC at baseline only

Patient Centered Culture

Adapted from the
Malcolm Baldrige National Quality Award
with a Cronbach's alpha of 0.92.

Range from 1 (Strongly Disagree) to 5
(Strongly Agree).

Stephen M. Shortell et al., "The Role of
Perceived Team Effectiveness in Improving
Chronic Illness Care," *Medical Care* 42, no. 11
(November 2004): 1040–48.

- Practice does a good job assessing patient needs and expectations.

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- Practice does a good job assessing patient needs and expectations.
- Staff promptly resolves patient complaints.

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- Staff promptly resolves patient complaints.
- Patient complaints are studied to identify patterns and prevent reoccurrence.
- Practice uses data from patients to improve care.
- Practice uses data on patient expectations and satisfaction to develop new services.

Method & Model

Analysis using multivariable linear regression.

Outcome

- Change in patient centered culture (PCC)

Predictor

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- Practice size at baseline and change over time
- Proportion primary care practitioners (PCP) at baseline and change over time
- Proportion Medicaid revenue at baseline and change over time
- CMP Index at baseline and change over time
- PCC at baseline only

Descriptive Statistics

Data presented as medians (interquartile range) or frequency (percentages), using Fisher's exact test or Wilcoxon rank sum test, respectively.

	Physician Owned (N=708; 78%)	Physician to System Owned (N=83; 9.2%)		System Owned (N=86; 10%)		System to Physician Owned (N=25; 2.8%)	
Baseline PCC (1 to 5)	4.2 (3.8, 4.6)	4.2 (3.6, 4.6)	0.4	4.0 (3.6, 4.4)	0.014	4.2 (3.4, 4.2)	0.048
Change in PCC (-4 to 4)	0.0 (-0.6, 0.4)	-0.2 (-0.6, 0.2)	0.3	0.0 (-0.6, 0.4)	0.6	0.0 (-0.2, 0.8)	0.043
Baseline Practice Size			<0.0001		<0.0001		0.016
1-2 MDs	384 (54%)	19 (23%)		23 (27%)		11 (44%)	
3-19 MDs	276 (39%)	50 (60%)		44 (51%)		8 (32%)	
20+ MDs	48 (6.8%)	14 (17%)		19 (22%)		6 (24%)	
Change in Practice Size			<0.0001		<0.0001		0.12
No change	618 (87%)	59 (71%)		64 (74%)		19 (76%)	
Increase	48 (6.8%)	20 (24%)		19 (22%)		4 (16%)	
Decrease	42 (5.9%)	4 (4.8%)		3 (3.5%)		2 (8.0%)	
Baseline Composition			0.10		<0.0001		0.001
100% PCP	482 (68%)	47 (57%)		64 (74%)		17 (68%)	
33-99% PCP	78 (11%)	12 (14%)		18 (21%)		8 (32%)	
<33% PCP	148 (21%)	24 (29%)		4 (4.7%)		0 (0%)	
Change in Composition			0.041		<0.0001		0.022
No change	630 (89%)	67 (81%)		60 (70%)		18 (72%)	
Increase PCP	14 (2.0%)	1 (1.2%)		1 (1.2%)		2 (8.0%)	
Decrease PCP	64 (9.0%)	15 (18%)		25 (29%)		5 (20%)	
Baseline Medicaid Revenue (%)	5.0 (1.0, 10.0)	5.0 (0.0, 10.0)	1	10.0 (5.0, 18.0)	<0.0001	7.0 (0.7, 15.0)	0.086
Change in Medicaid Revenue	0.0 (-2.0, 3.0)	1.0 (-1.0, 5.0)	0.026	0.5 (-3.0, 5.0)	0.064	0.0 (-5.0, 4.3)	0.7
Baseline CMP Index (%)	15.0 (5.0, 30.0)	15.0 (0.0, 35.0)	0.8	20.0 (5.0, 40.0)	0.025	20.0 (5.0, 65.0)	0.10
Change in CMP Index	0.0 (-10.0, 19.2)	5.0 (-10.0, 25.0)	0.2	7.5 (-5.0, 25.0)	0.10	10.0 (0.0, 25.0)	0.076

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Results

Multivariable linear regression on PCC change (range -4 to 4) by ownership category.

Variable	Coefficient	95% CI	p-value
Ownership			
Continuously Physician Owned	Ref	Ref	Ref
Continuously System Owned	0.05	-0.18, 0.28	0.7
Physician Owned Changed to System Owned	0.30	0.03, 0.58	0.032
System Owned Changed to Physician Owned	-0.13	-0.21, -0.05	0.002
Baseline Practice Size			
1-2 MDs	Ref	Ref	Ref
3-19 MDs	-0.20	-0.27, -0.14	<0.0001
20+ MDs	-0.46	-0.75, -0.18	0.002
Change in Practice Size			
No Change	Ref	Ref	Ref
Decrease	-0.12	-0.38, 0.13	0.3
Increase	-0.33	-0.41, -0.25	<0.0001
Baseline Composition			
100% PCP	Ref	Ref	Ref
33-99% PCP	0.01	-0.14, 0.16	0.9
<33% PCP	0.12	0.07, 0.16	<0.0001
Change in Composition			
No Change	Ref	Ref	Ref
Decrease PCP	-0.26	-0.38, -0.14	<0.0001
Increase PCP	-0.30	-0.83, 0.23	0.3
Baseline Medicaid Revenue per 5%	0.02	-0.00, 0.05	0.083
Change in Medicaid Revenue per 5% Increase	0.00	-0.01, 0.02	0.6
Baseline CMP Index per 5%	0.07	0.06, 0.09	<0.0001
Change in CMP Index per 5% Increase	0.06	0.05, 0.07	<0.0001
Baseline PCC Index (range 1 to 5)	-0.83	-0.86, -0.80	<0.0001

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Baseline Medicaid Revenue per 5%	0.02	-0.00, 0.05	0.083
Change in Medicaid Revenue per 5% Increase	0.00	-0.01, 0.02	0.6
Baseline CMP Index per 5%	0.07	0.06, 0.09	<0.0001
Change in CMP Index per 5% Increase	0.06	0.05, 0.07	<0.0001
Baseline PCC Index (range 1 to 5)	-0.83	-0.86, -0.80	<0.0001

Limitations & Future Directions

- All surveys depended on a single practice respondent.

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- PCC is a composite measure.
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- Selection in which practices are acquired by systems.
 - Merge and include controls for Herfindahl-Hirschman Index.

Conclusion & Implications

- Practice ownership by systems such as hospital organizations is not in and of itself associated with decreases in patient centered culture.

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- Practice ownership by systems such as hospital organizations is not in and of itself associated with decreases in patient centered culture.
- Practices that are transferring ownership can mitigate the impact of expansion by being attentive to practice culture regarding patient centeredness.

Acknowledgements



Stephen Shortell
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PhD, MPH



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