Analyses of Private Equity Ownership in Hospitals and Provider Groups

Speakers:

Maureen Hensley-Quinn, Senior Director of Coverage, Cost, and Value, NASHP

Zirui Song, MD, PhD, Harvard Medical School, Massachusetts General Hospital

Yashaswini Singh, PhD, MPA, Assistant Professor, Brown University

About NASHP

The National Academy for State Health Policy (NASHP) is a nonpartisan organization committed to developing and advancing state health policy innovations and solutions.

NASHP provides a unique forum for the productive exchange of strategies across state government, including the executive and legislative branches.

NASHP
NATIONAL ACADEMY FOR STATE HEALTH POLICY

- To improve the health and well-being of all people across every state.
- To be of, by, and for all state by providing nonpartisan support for the development of policies that promote and sustain healthy people and communities and advance high quality, affordable health care.

Agenda

- Project and Research Overview
- Private Equity (PE) Ownership in Hospitals
- Private Equity (PE) in Providers/ Provider Groups
- Q & A

Project Overview

- Support: The Commonwealth Fund
- Collaborators: NASHP, Harvard Medical School at Harvard University and Center for Advancing Health Policy through Research at Brown University
- Timeline: June 2025 through May 2026
- Goal: Use data to understand the private equity ownership in hospitals and in physician organizations in 4 select states
  - States: CT, NC, PA, and TX
    - Chosen for the diversity of their health care and provider markets

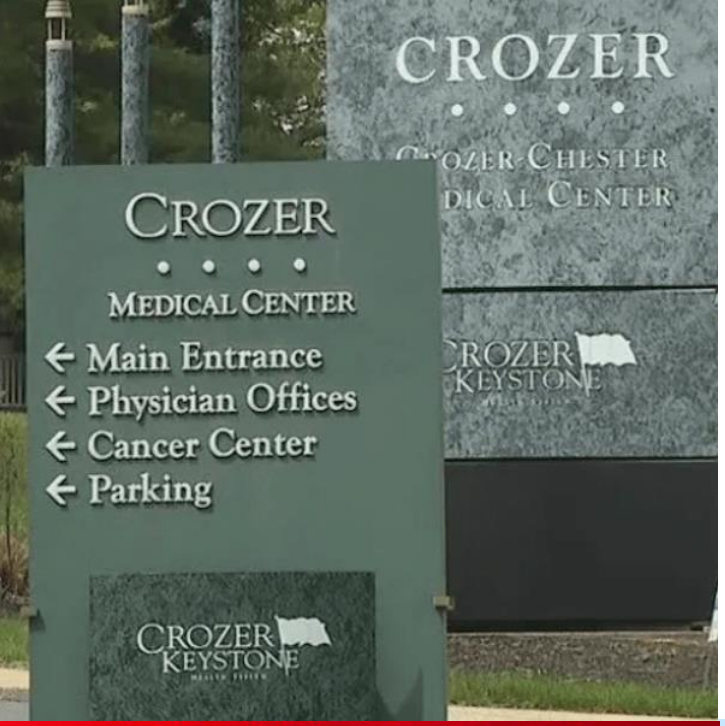
Private Equity in Hospital Ownership

NASHP

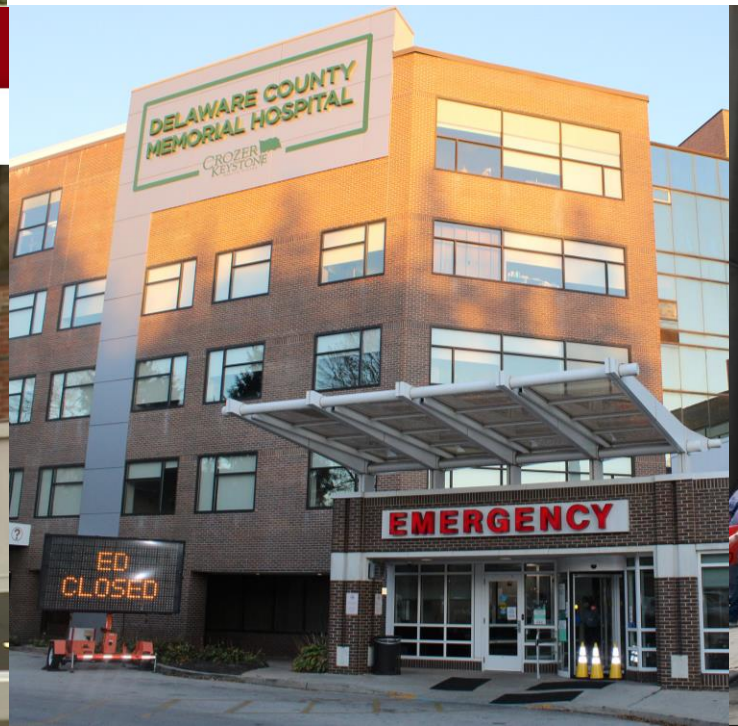
May 19, 2026

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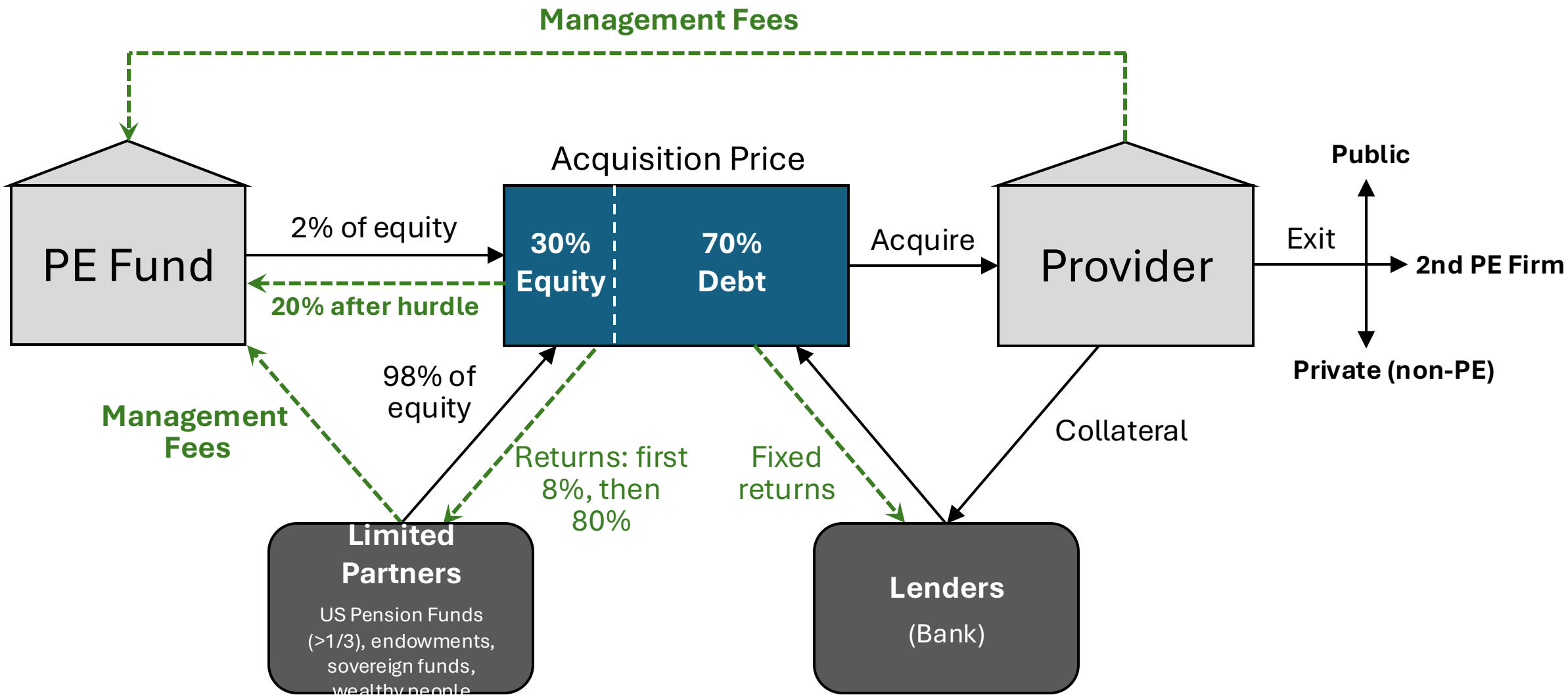






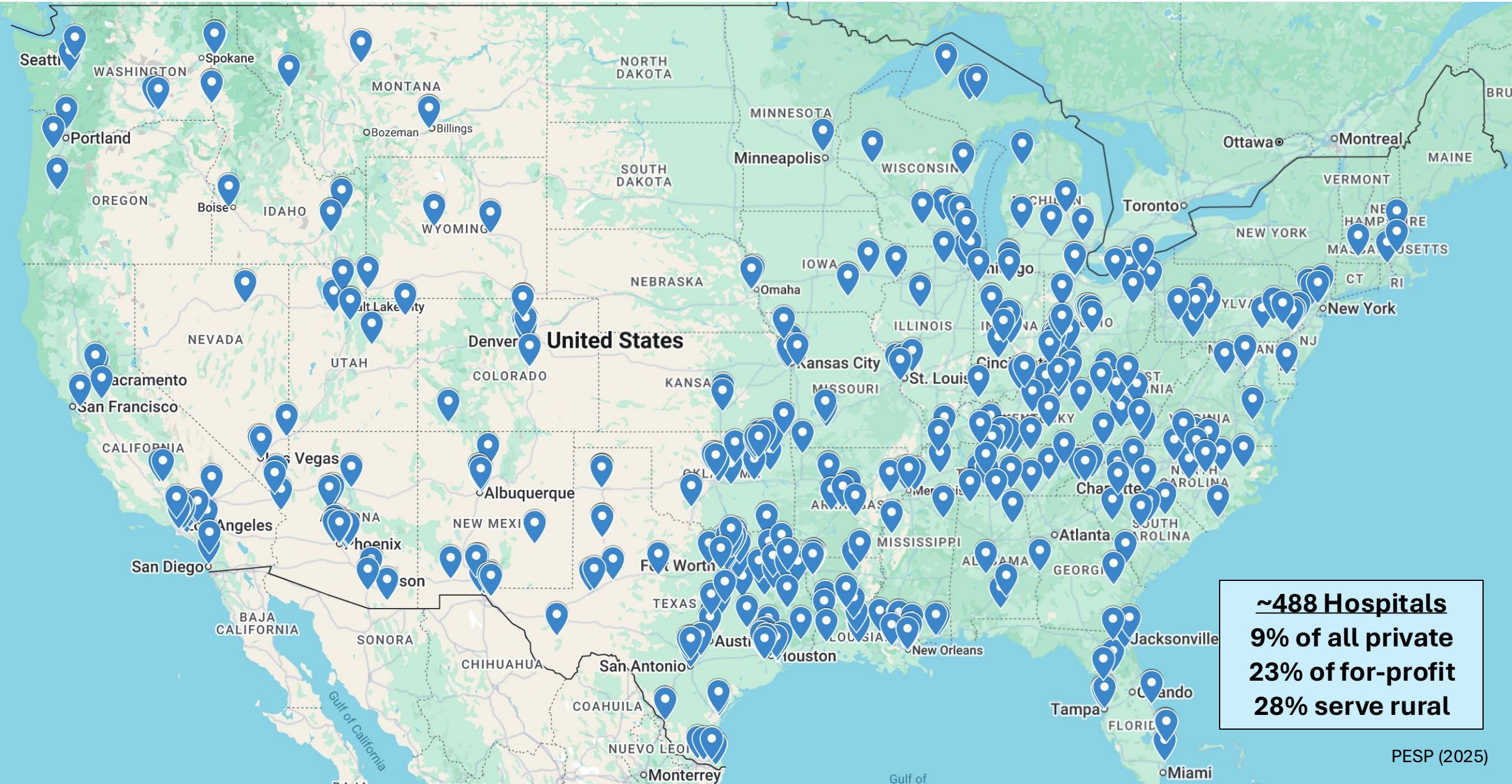


Classic Model of a Private Equity (PE) Acquisition



Management fees = 2/3 of revenue for PE general partner

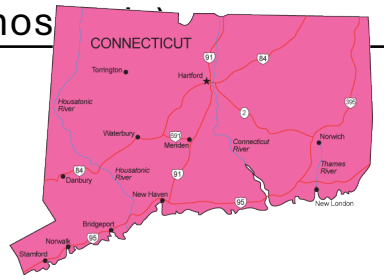
Private Equity Hospitals in 2025



~488 Hospitals
9% of all private
23% of for-profit
28% serve rural

PESP (2025)

Acute Care Hospitals	North Carolina	Pennsylvania	Texas	Connecticut
Private equity acquisitions	9	8	39	3
Total Medicare-certified hospitals in the state*	135	212	557	33
Private equity penetration (% of total hos	7%	4%	7%	9%



Medicare CCN	Hospital Name	City	Bed Days	Beds	Employees	Year Acquired
70005	Waterbury Hospital	Waterbury	78840	216	1057	2016
70012	Rockville General Hospital	Vernon	37230	102	375	2016
70027	Manchester Memorial Hospital	Manchester	48916	134	1068	2016



Medicare CCN	Hospital Name	City	Bed Days	Beds	Employees	Year Acquired
340013	Rutherford Hospital Inc.	Rutherfordton	40515	111	470	2018
340016	Harris Regional Hospital	Sylva	29930	82	635	2018
340020	Central Carolina Hospital	Sanford	46355	127	512	2018
340116	Frye Regional Medical Center	Hickory	82490	226	1179	2018
340126	Wilson Medical Center	Wilson	97429	270	789	2018
340132	Maria Parham Medical Center	Henderson	33215	91	579	2018
340159	Person Memorial Hospital Inc	Roxboro	13870	38	178	2018
340184	Haywood Regional Medical Center	Clyde	44530	122	755	2018
340133	Martin General Hospital	Williamston	15695	43	162	2020



Medicare CCN	Hospital Name	City	Bed Days	Beds	Employees	Year Acquired
390062	Nason Hospital	Roaring Spring	16425	45	272	2018
390081	Delaware County Memorial Hospital	Drexel Hill	53070	145	747	2016
390110	Memorial Medical Center	Johnstown	135484	371	2821	2018
390130	Miners Hospital	Hastings	10950	30	110	2018
390150	Waynesburg Hospital	Waynesburg	14233	39	244	2005
390162	St Lukes Hospital - Easton Campus	Easton	60358	165	759	2017
390180	Crozer Chester Medical Center	Upland	129489	354	2520	2016
390211	Sharon Regional Health System	Sharon	67172	163	718	2017

*Taylor Hospital and Springfield Hospital were part of the Crozer system



Medicare CCN	Hospital Name	City	Bed Days	Beds	Employees	Year Acquired
450028	Valley Baptist Med Ctr Brownsville	Brownsville	88695	243	676	2011
450033	Valley Baptist Medical Center	Harlingen	148808	408	1256	2011
450087	Medical City North Hills	North Richland Hills	48690	133	608	2006
450097	HCA Houston Healthcare Southeast	Pasadena	109135	299	1008	2006
450099	Pampa Regional Medical Center	Pampa	25915	71	219	2005
450107	Las Palmas Medical Center	El Paso	86870	238	801	2006
450214	Gulf Coast Medical Center	Wharton	24820	68	304	2005
450222	Conroe Regional Medical Center	Conroe	95630	262	951	2006
450231	Baptist Saint Anthonys Hospital	Amarillo	149103	409	1966	2013
450388	Methodist Hospital	San Antonio	474773	444	653	2006
450400	Parkview Regional Hospital	Mexia	17885	49	110	2018
450403	Medical City Mckinney	Mckinney	62174	170	700	2006
450431	St. Davids Medical Center	Austin	115340	316	1454	2006
450530	Mainland Medical Center	Texas City	55741	169	617	2006
450617	Clear Lake Reg Med Ctr	Webster	141255	387	1413	2006
450630	Spring Branch Medical Center	Houston	39825	109	289	2006
450634	Medical City Denton	Denton	56693	155	709	2006
450644	HCA Houston Healthcare West	Houston	58400	160	775	2006
450646	Del Sol Medical Center	El Paso	99280	272	1102	2006
450647	Medical City Dallas	Dallas	237968	642	2000	2006
450651	Medical City Plano	Plano	147095	403	1287	2006
450662	Valley Regional Medical Center	Brownsville	78110	214	670	2006
450669	Medical City Lewisville	Lewisville	62415	171	653	2006
450672	Medical City Fort Worth	Fort Worth	77619	212	835	2006
450674	Woman's Hospital Of Texas	Houston	58175	161	1022	2006
450675	Medical City Arlington	Arlington	86140	236	995	2006
450711	Rio Grande Regional Hospital	Mcallen	116800	320	968	2006
450713	South Austin Medical Center	Austin	75053	204	835	2006
450718	Round Rock Medical Center	Round Rock	47682	131	560	2006
450747	Palestine Regional Medical Center	Palestine	42340	116	423	2018
450775	HCA Houston Healthcare Kingwood	Kingwood	49621	138	516	2006
450780	Methodist Ambulatory Surgical Hosp	San Antonio	9125	25	147	2006
450788	Corpus Christi Medical Center	Corpus Christi	121781	334	1095	2006
450804	Texas Orthopedic Hospital	Houston	17885	49	310	2006
450809	St. David's North Austin Medical Ctr	Austin	71021	195	919	2006
450813	Community General Hospital	Dilley	6750	18	44	2013
450822	Medical City Las Colinas	Irving	36500	100	263	2006
450833	Ennis Regional Medical Center	Ennis	18250	57	125	2018
451478	Big Bend Regional Medical Center	Alpine	9124	25	107	2020

Private Equity in Physician Organizations

CAHPR CENTER FOR ADVANCING HEALTH POLICY THROUGH RESEARCH

School of Public Health BROWN UNIVERSITY

Supporting State Policymakers to Understand Private Equity in Health Care through Data

Yashaswini Singh, PhD, MPA
Assistant Professor, Brown University

May 19, 2026

The Research Team



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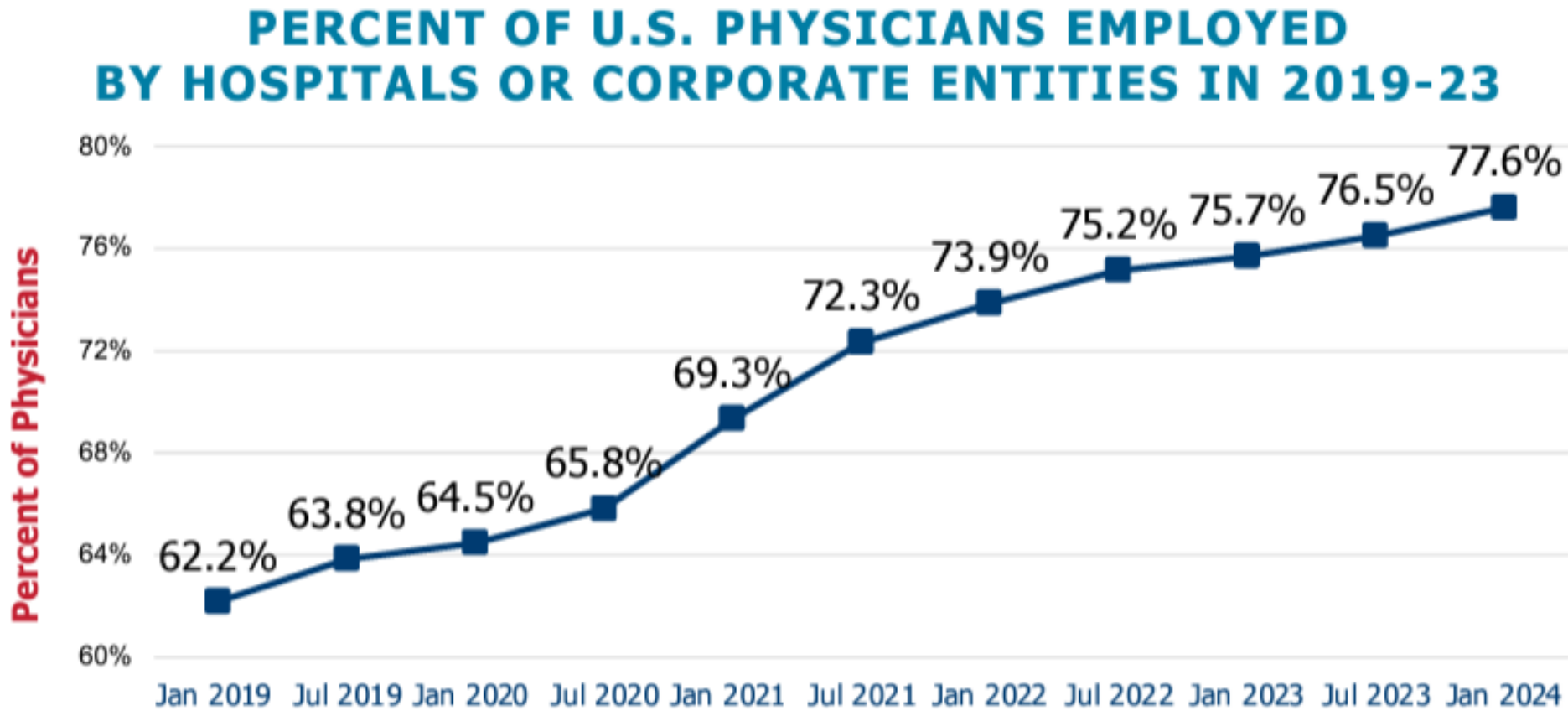


Nathan Hostert, MPA

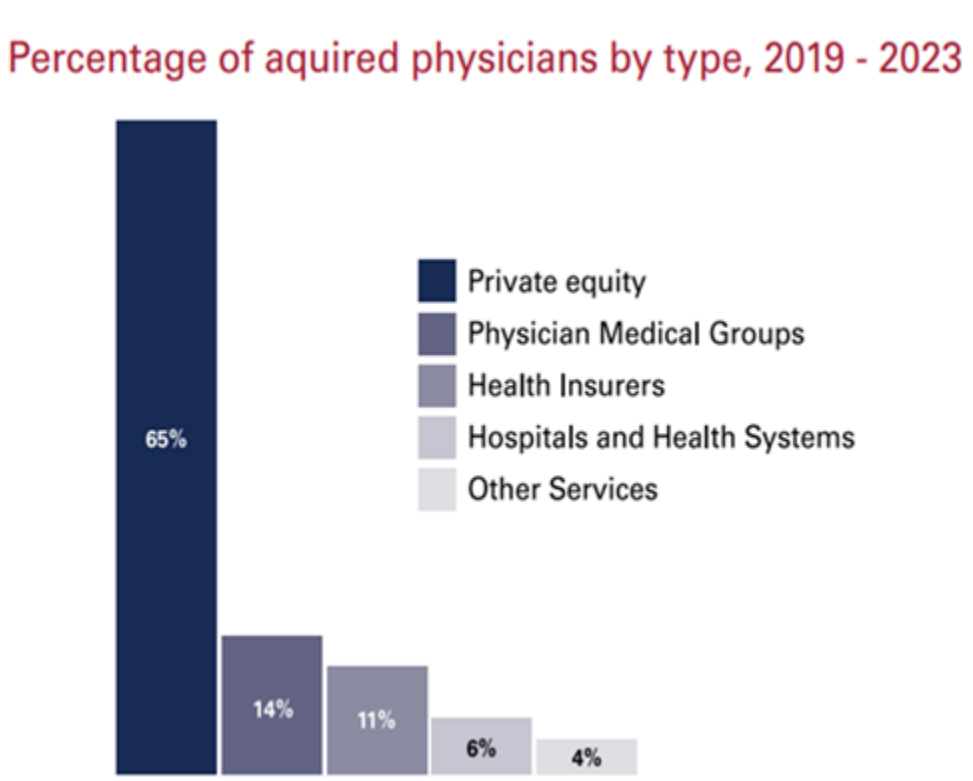


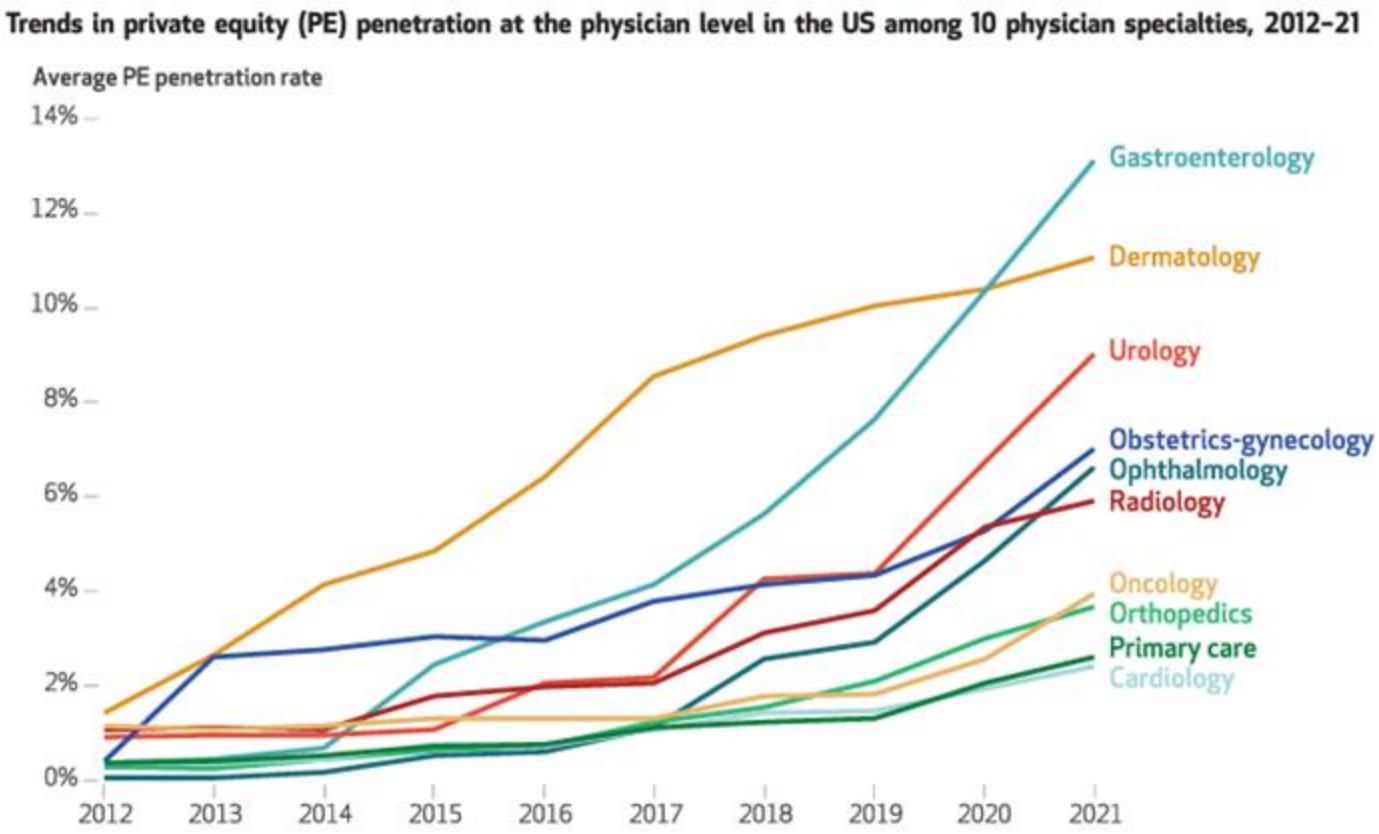
Erin Fuse Brown, JD, MPH

Rapid changes to physician organizations



A growing share of physicians are affiliated with PE firms nationally



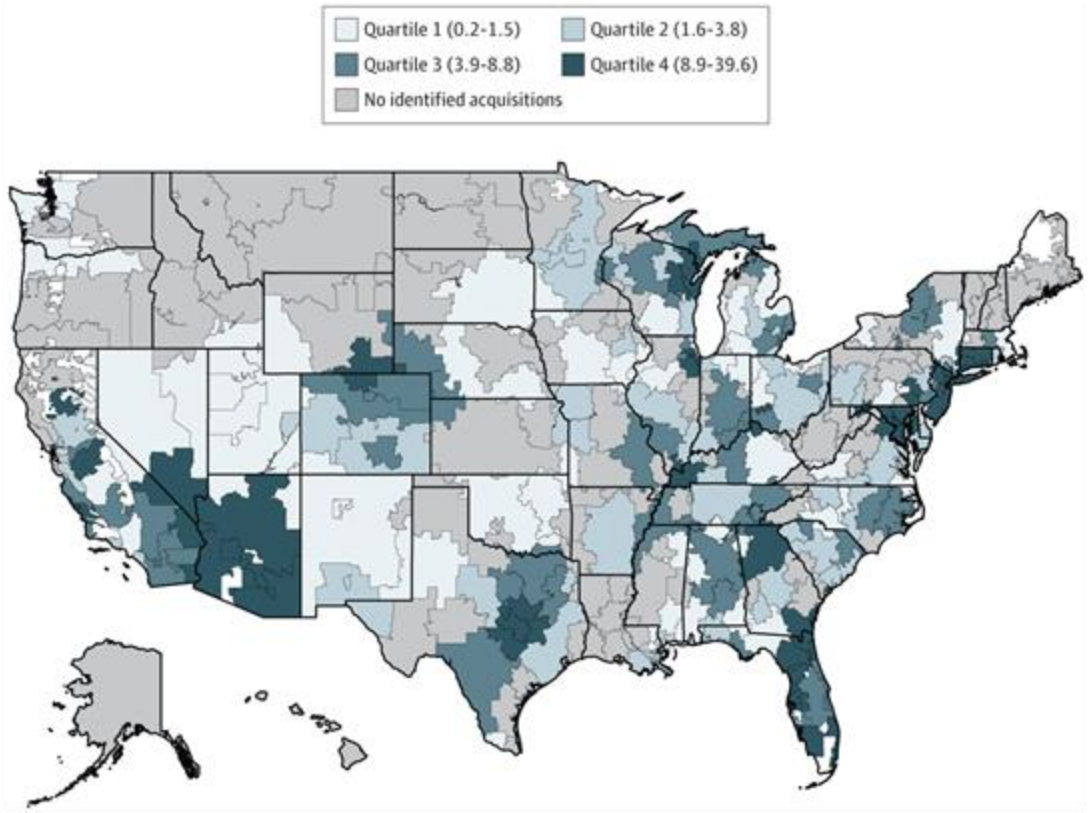


https://www.aha.org/system/files/media/file/2023/06/Private-Equity-and-Health-Insurers-Acquire-More-Physicians-than-Hospitals-Infographic.pdf

Abdelhadi, Ola, et al. "Private Equity–Acquired Physician Practices And Market Penetration Increased Substantially, 2012–21: Study examines private equity-acquired physician practices and market penetration." *Health Affairs* 43.3 (2024): 354-362.

PE investments in physician practices increase prices and utilization, also affects workforce composition

PE penetration across 6 office-based specialties, 2019



From: Singh, Y., Zhu, J. M., Polsky, D., & Song, Z. (2022, April). Geographic variation in private equity penetration across select office-based physician specialties in the US. *In JAMA health forum* (Vol. 3, No. 4, pp. e220825-e220825). American Medical Association.

- PE increases health care spending by increasing prices by 10-26% and service utilization (Singh et al., 2022, La Forgia et al., 2022, Braun et al., 2021)
- PE changes workforce composition by increasing hiring of physician assistants and nurse practitioners, increasing physician turnover (Singh et al., 2025, Bruch et al., 2023)
- PE has mixed effects on quality (Dixit et al., 2026, Gupta et al., 2024, Kannan et al., 2024, Cerullo et al., 2022, Braun et al., 2021)
- Concerns over PE have prompted policy attention but state-specific evidence is lacking

Overview of project

- **Objective:** Quantify private equity penetration across four states with diverse health provider markets, Connecticut, North Carolina, Pennsylvania, and Texas.

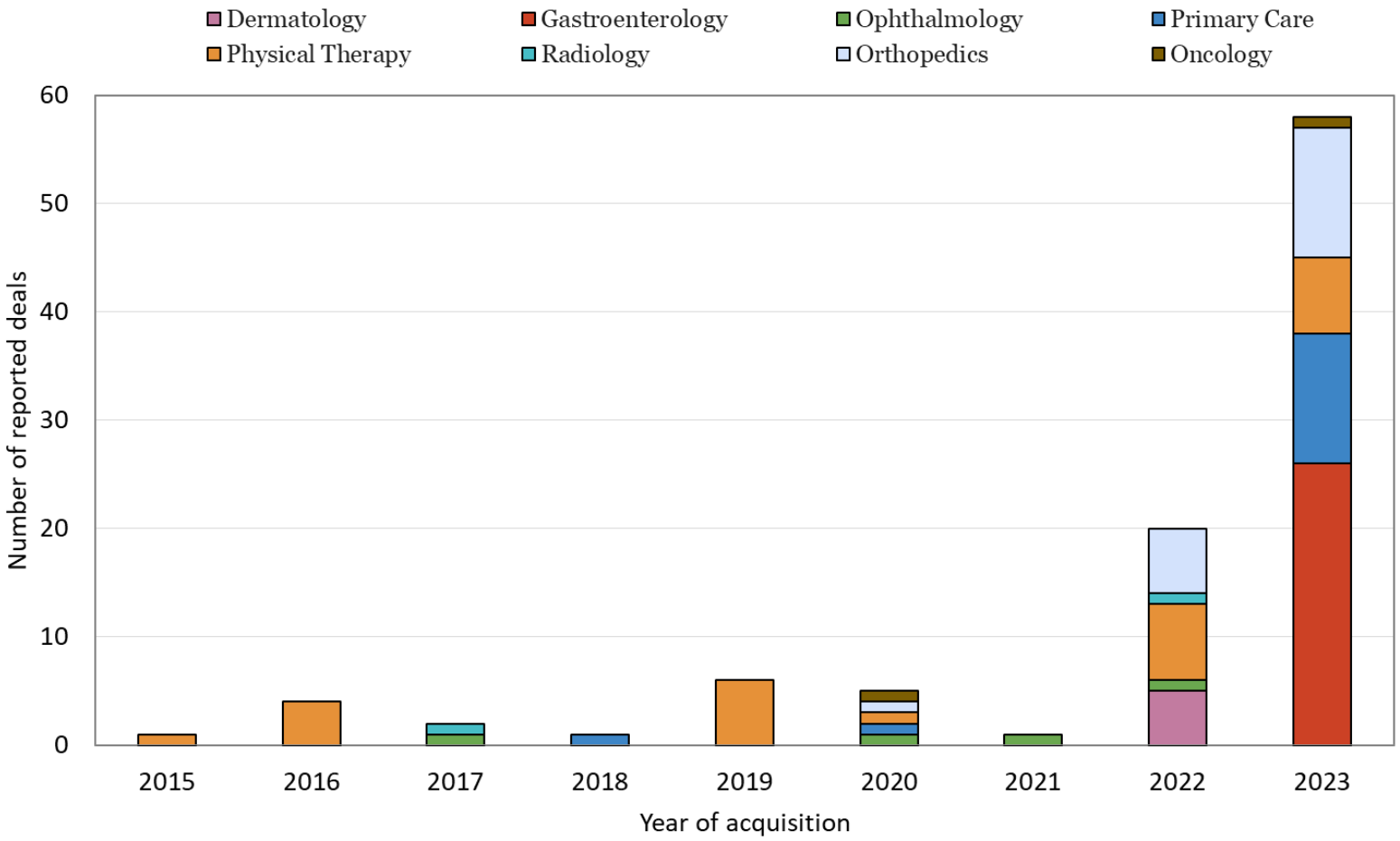
- **Data sources, 2015-2023**
  - Identify PE acquisitions using PitchBook data and manual verification
  - Identify PE-affiliated physicians using Medicare Data on Provider Practice and Specialty (MD-PPAS)
  - Identify hospital-affiliated physicians using Agency for Healthcare Research and Quality (AHRQ) Compendium of US Health Systems, 2022

- **Ten Evaluated Specialties:** dermatology, ophthalmology, gastroenterology, orthopedics, primary care, cardiology, oncology, radiology, physical therapy, and obstetrics/gynecology.

- **Limitations**
  - MD-PPAS available through 2022; 2023 estimates based on 2022 data
  - No provider-level data for certain specialties (e.g., obstetrics and gynecology) and certain providers (e.g., physical therapists, advanced practice providers)
  - No systematic data on PE exits; assume entity is PE-affiliated if it is ever PE-affiliated

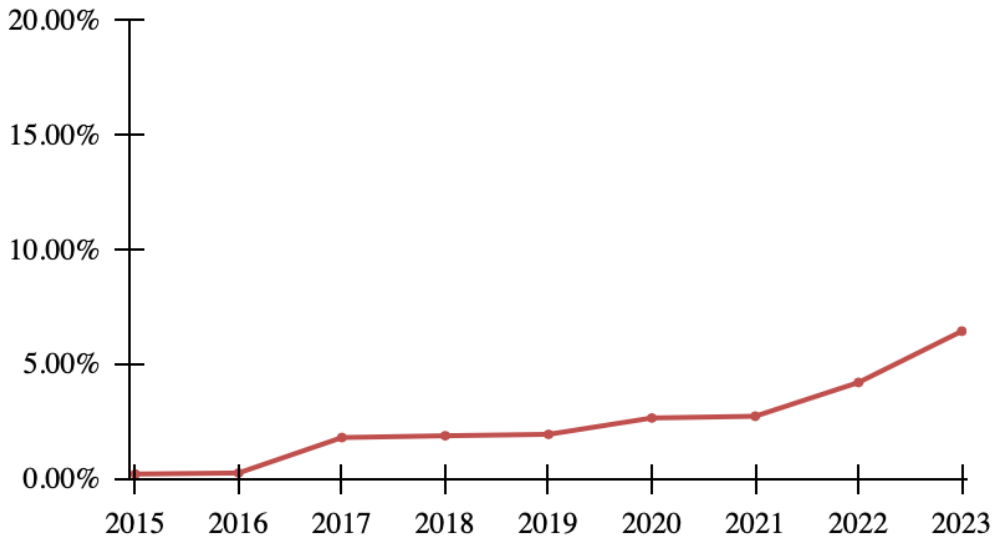
Connecticut

Connecticut: 98 reported deals between 2015-2023



There were no reported deals in cardiology and obstetrics/gynecology.

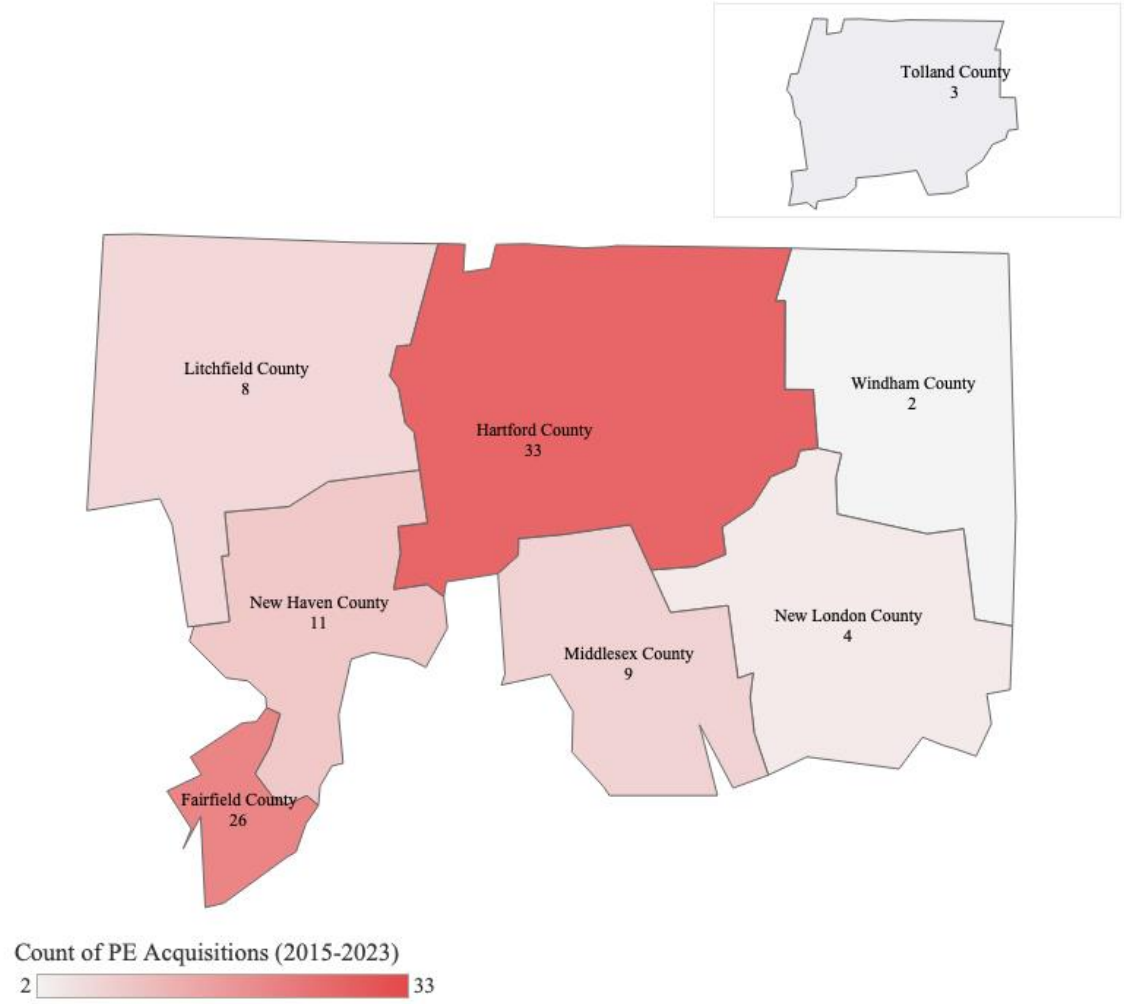
Connecticut: Increasing share of physicians are in PE-affiliated practices with variation across specialties



Specialty	State-wide number of physicians	Physicians in PE-affiliated practices (%)	Physicians in hospital-affiliated practices (%)
Cardiology	466	0%	91.8%
Dermatology	180	2.7%	27.2%
Gastroenterology	259	28.5%	47.8%
Oncology	306	1.9%	89.8%
Ophthalmology	263	9.5%	13.3%
Orthopedics	348	16.3%	39.9%
Primary care	1,909	0.1%	65.0%
Radiology	466	21.8%	47.6%
All evaluated specialties		**6.4%**	**59.8%**

Medicare Data on Provider Practice and Specialty do not include complete data on certain specialties (e.g., obstetrics/gynecology) and certain providers (e.g., physical therapy, advanced practice providers).

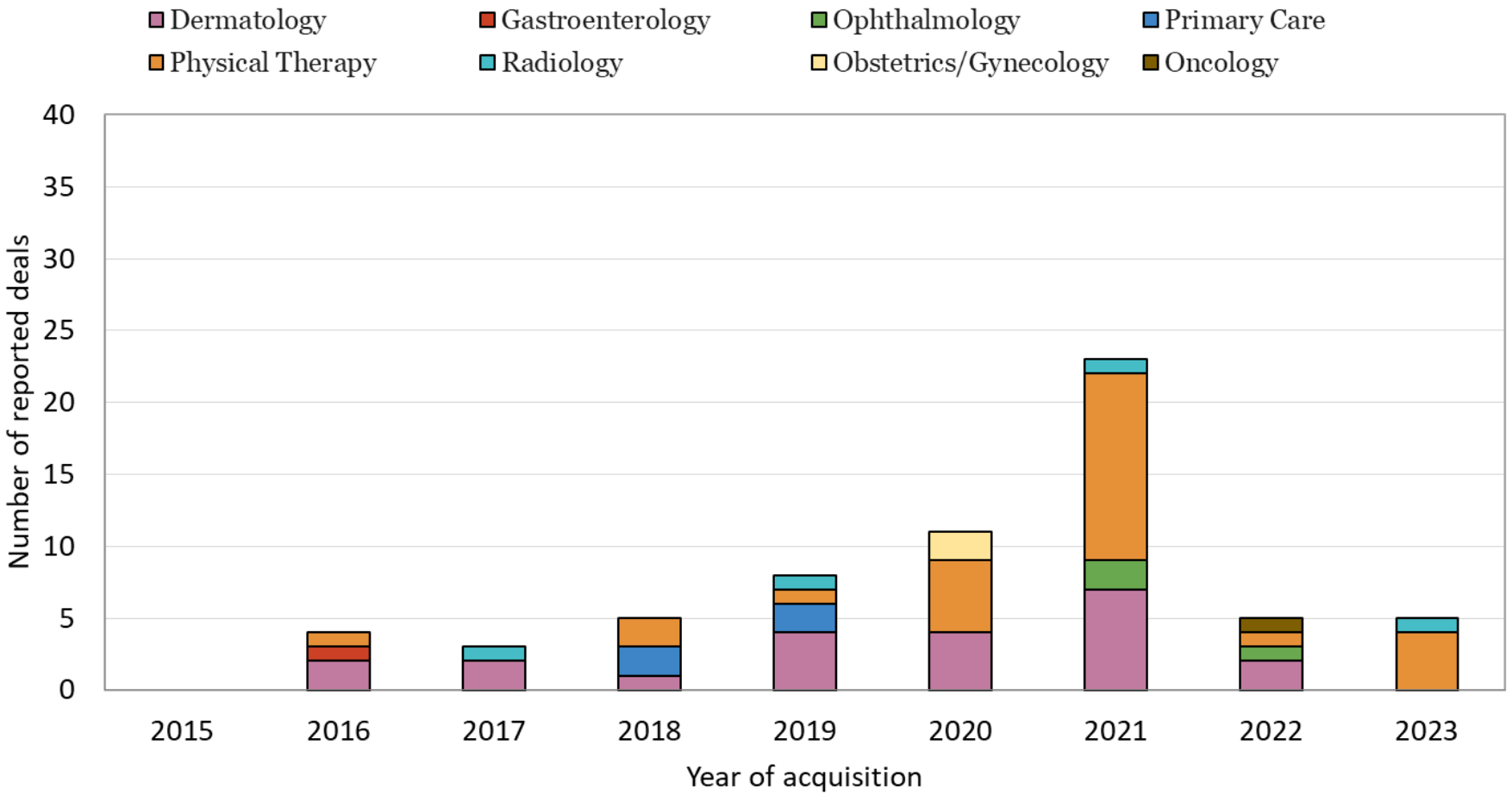
Connecticut: Geographic variation in PE-affiliated practices across all specialties



Data on county-level PE penetration for oncology was unavailable and has not been included in the map.

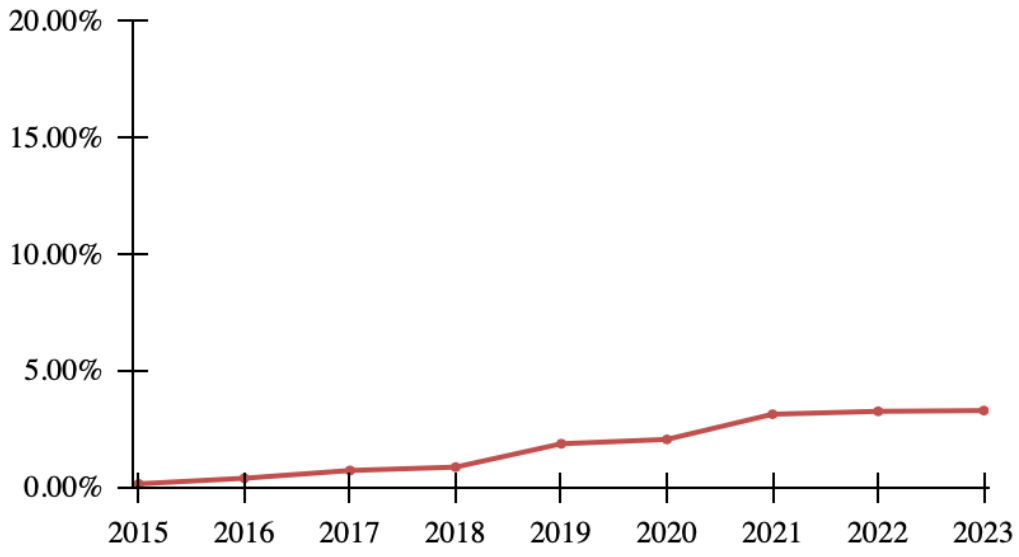
North Carolina

North Carolina: 67 reported deals between 2015-2023



There were no reported deals in cardiology and orthopedics.

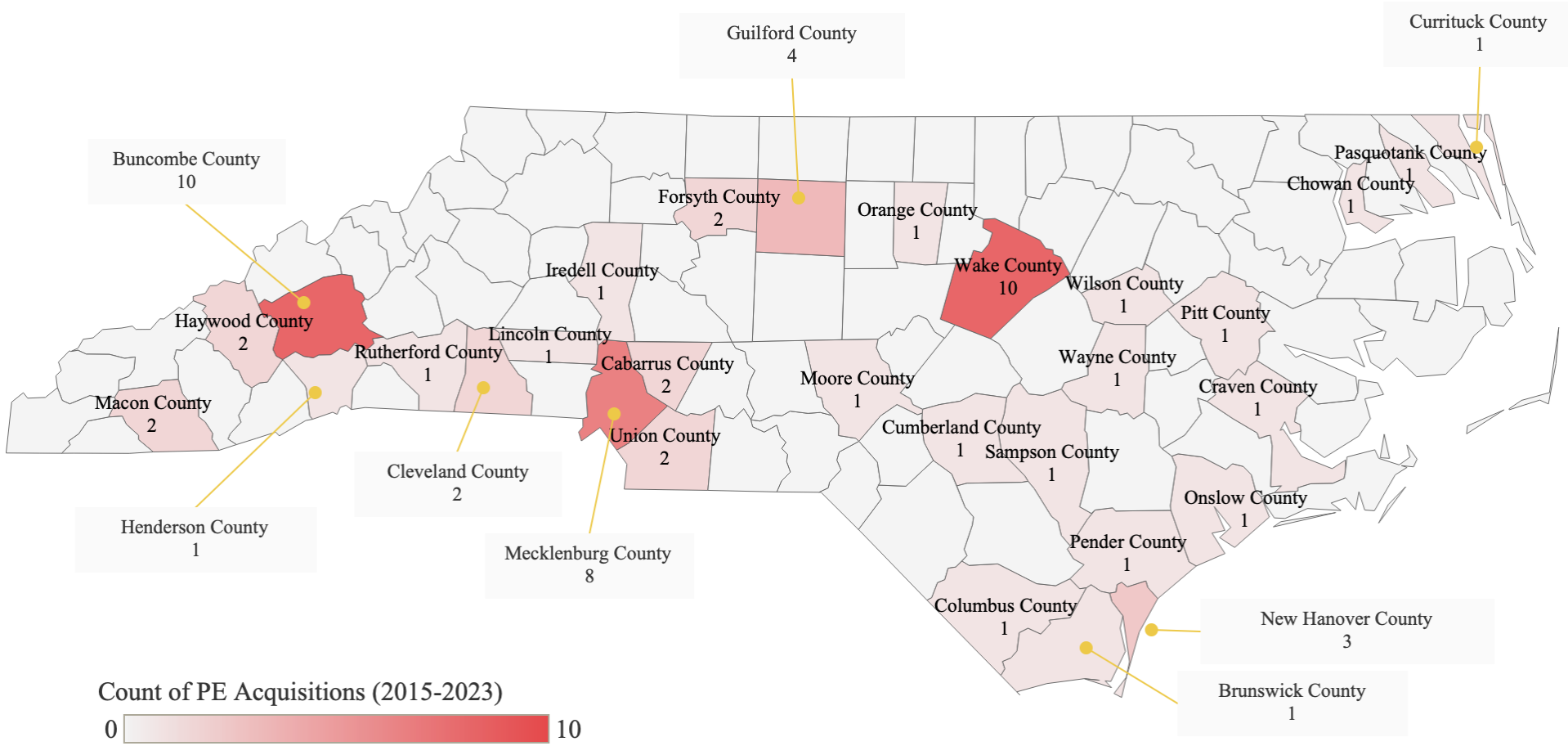
North Carolina: Increasing share of physicians are in PE-affiliated practices with variation across specialties



Specialty	State-wide number of physicians	Physicians in PE-affiliated practices (%)	Physicians in hospital-affiliated practices (%)
Cardiology	841	0%	85.9%
Dermatology	389	8.2%	24.7%
Gastroenterology	488	0.4%	53.6%
Oncology	699	0.7%	85.1%
Ophthalmology	532	7.5%	30.2%
Orthopedics	746	0%	51.4%
Primary care	4857	0.1%	60.4%
Radiology	1,023	22.7%	41.7%
All evaluated specialties		**3.3%**	**58.3%**

Medicare Data on Provider Practice and Specialty do not include complete data on certain specialties (e.g., obstetrics/gynecology) and certain providers (e.g., physical therapy, advanced practice providers).

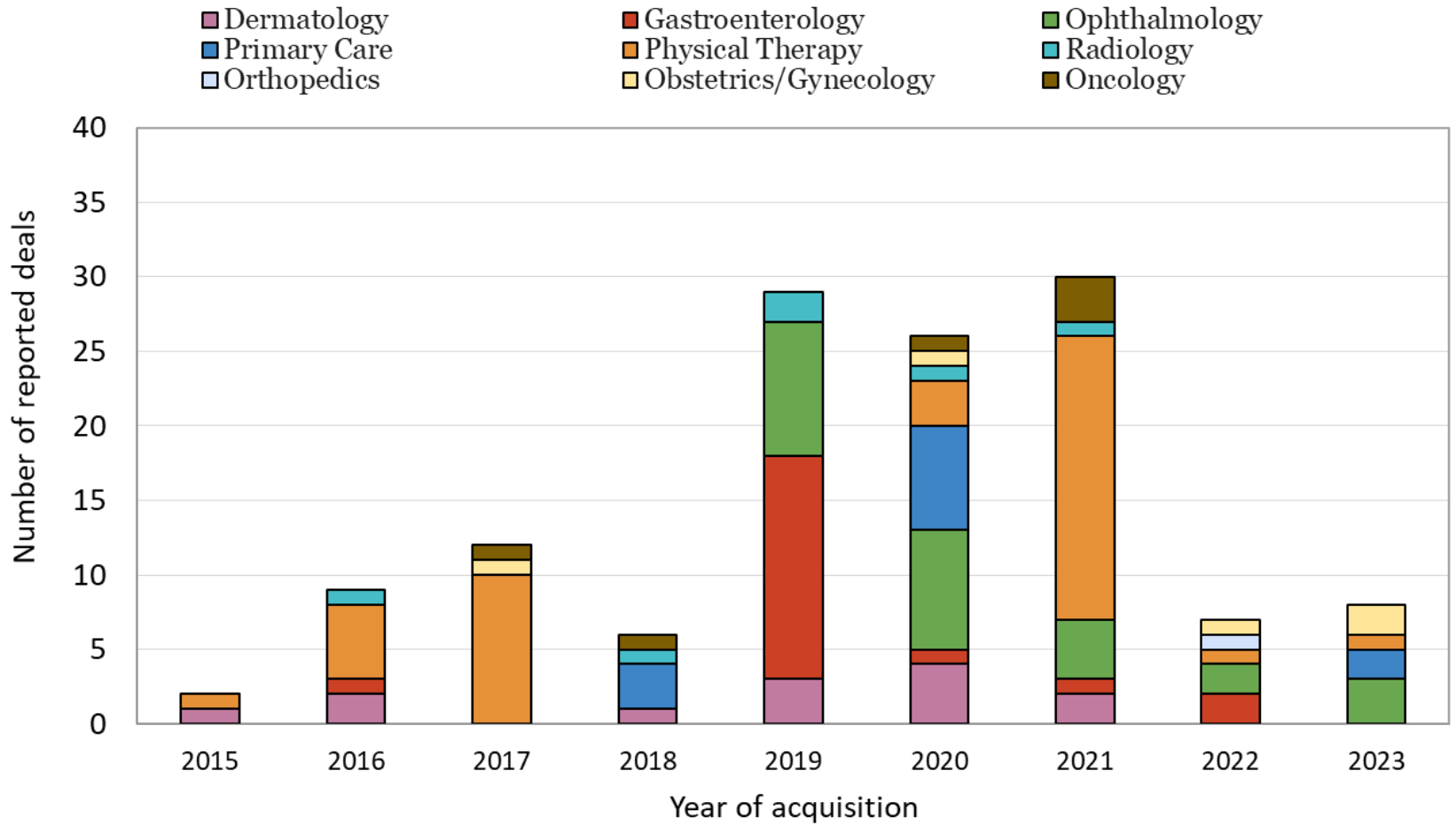
North Carolina: Geographic variation in PE-affiliated practices across all specialties



Data on county-level PE penetration for oncology was unavailable and has not been included in the map.

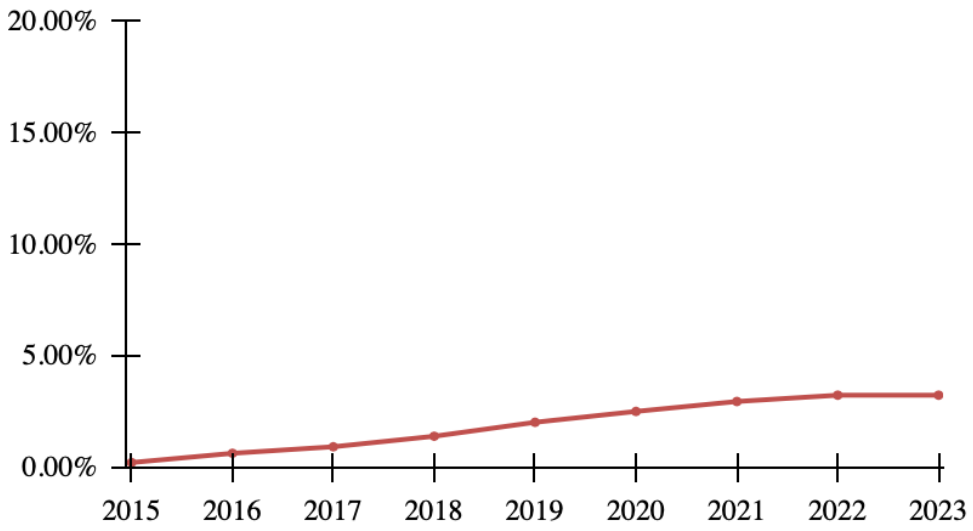
Pennsylvania

Pennsylvania: 129 reported deals between 2015-2023



There were no reported deals in cardiology.

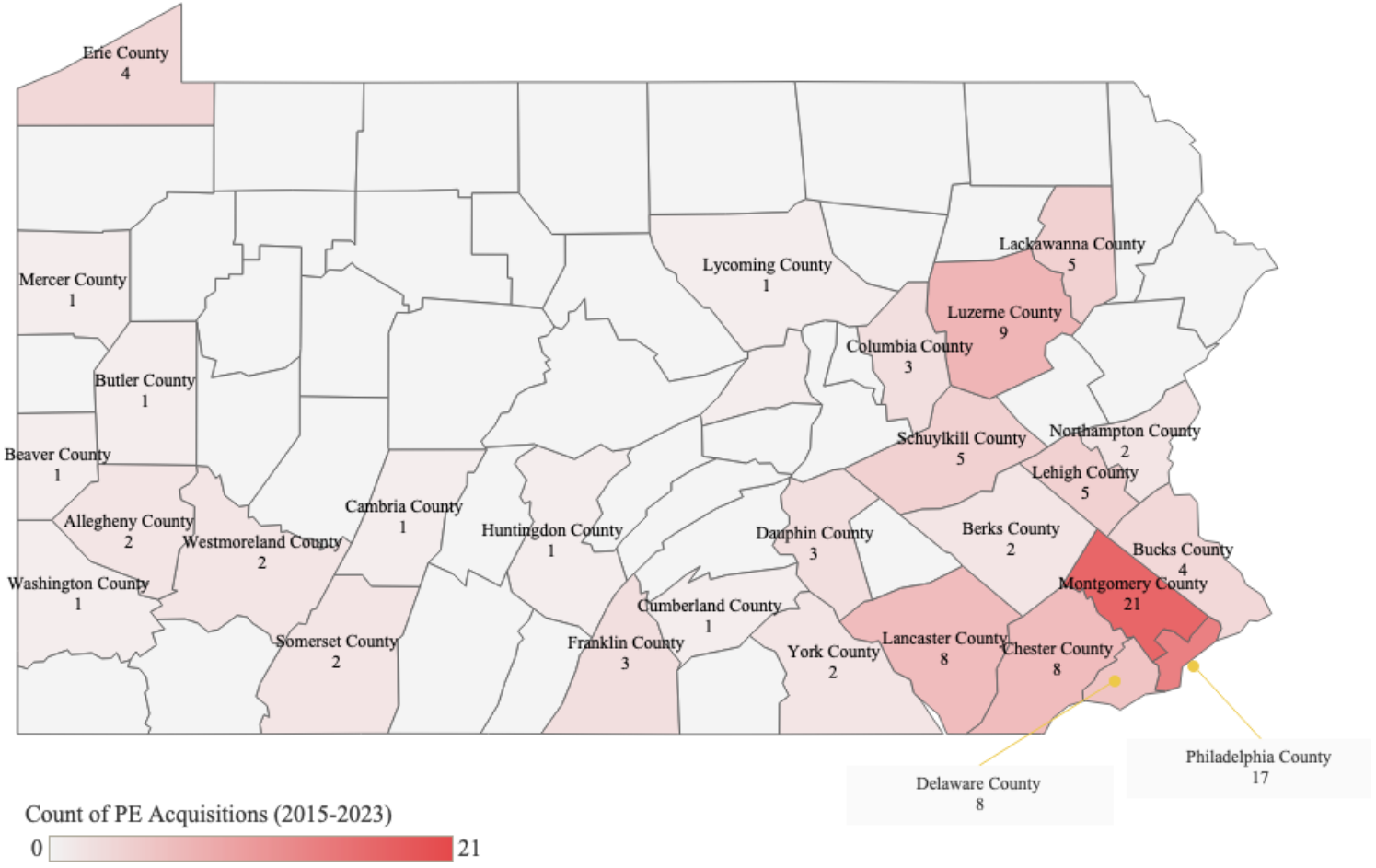
Pennsylvania: Increasing share of physicians are in PE-affiliated practices with variation across specialties



Specialty	State-wide number of physicians	Physicians in PE-affiliated practices (%)	Physicians in hospital-affiliated practices (%)
Cardiology	1467	0%	85.2%
Dermatology	525	10.1%	43.0%
Gastroenterology	763	9.5%	68.4%
Oncology	1,006	6.1%	88.8%
Ophthalmology	819	8.3%	22.2%
Orthopedics	975	4.9%	59.8%
Primary care	7,495	0.5%	69.3%
Radiology	1,713	7.6%	85.7%
All evaluated specialties		**3.2%**	**69.9%**

Medicare Data on Provider Practice and Specialty do not include complete data on certain specialties (e.g., obstetrics/gynecology) and certain providers (e.g., physical therapy, advanced practice providers).

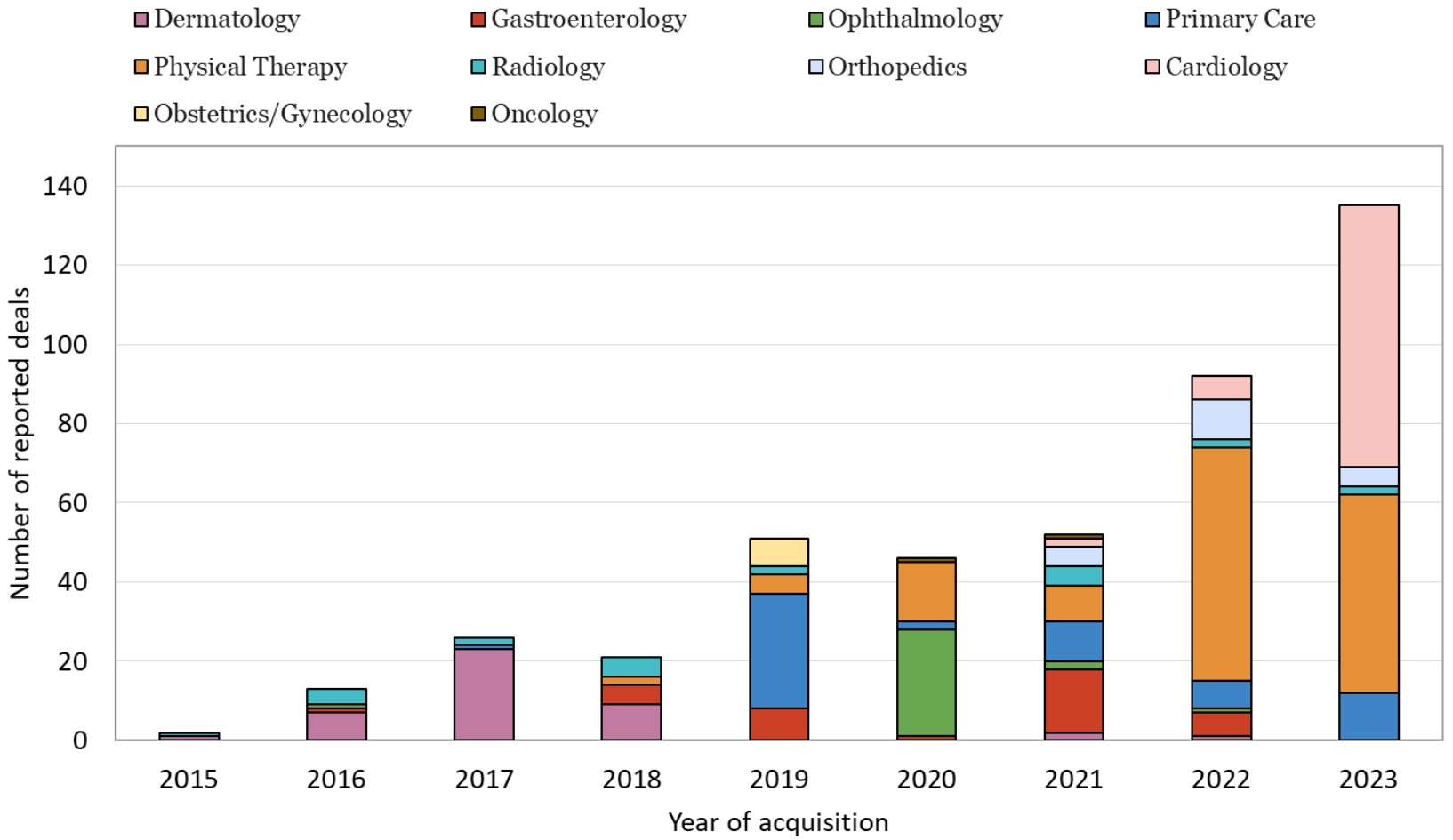
Pennsylvania: Geographic variation in PE-affiliated practices across all specialties



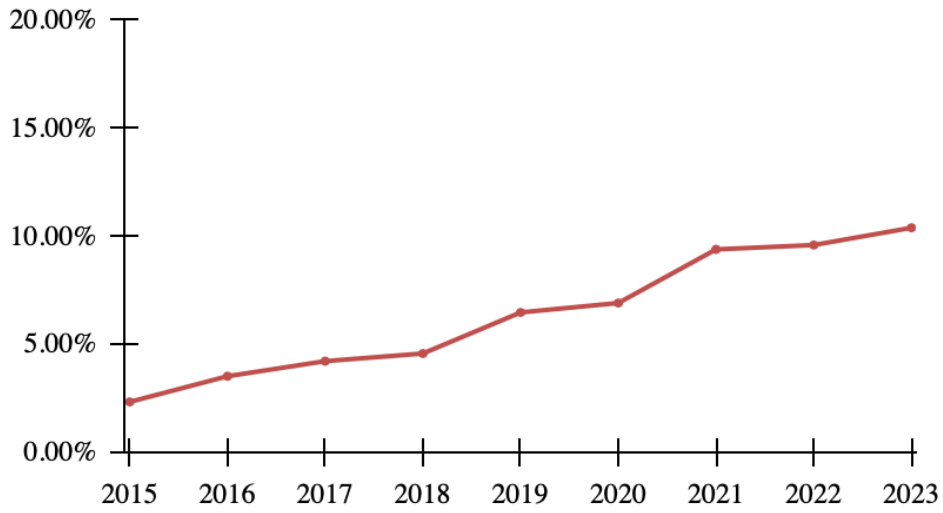
Data on county-level PE penetration for oncology was unavailable and has not been included in the map.

Texas

Texas: 438 reported deals between 2015-2023



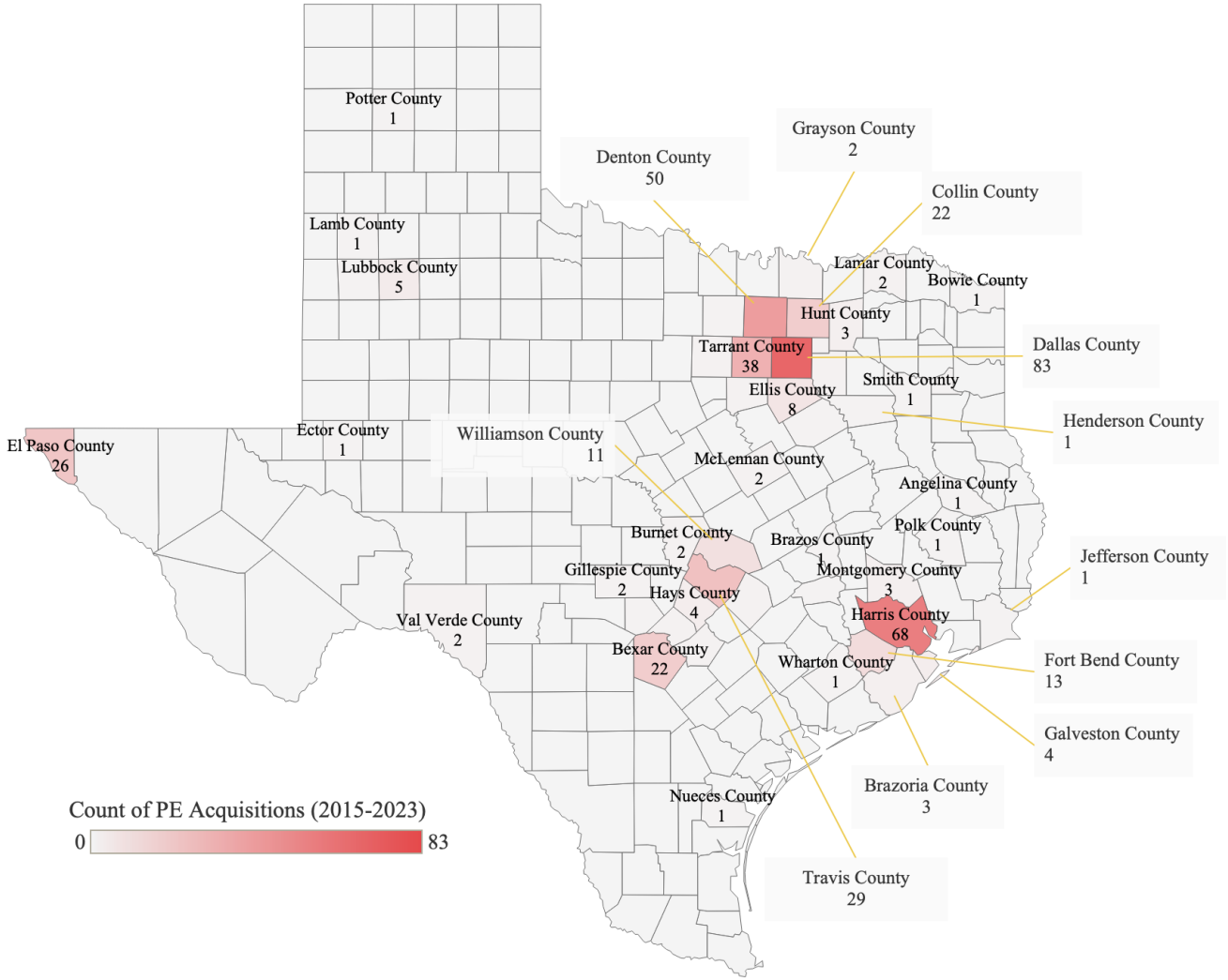
Texas: Increasing share of physicians are in PE-affiliated practices with variation across specialties



Specialty	State-wide number of physicians	Physicians in PE-affiliated practices (%)	Physicians in hospital-affiliated practices (%)
Cardiology	2,063	5.87%	56.76%
Dermatology	946	20.82%	15.12%
Gastroenterology	1,072	22.39%	38.90%
Oncology	1,509	33.40%	47.91%
Ophthalmology	1,220	5.90%	16.48%
Orthopedics	1,636	3.06%	39.49%
Primary care	11,888	4.15%	37.82%
Radiology	2,535	27.42%	50.57%
All evaluated specialties		**10.4%**	**39.7%**

Medicare Data on Provider Practice and Specialty do not include complete data on certain specialties (e.g., obstetrics/gynecology) and certain providers (e.g., physical therapy, advanced practice providers).

Texas: Geographic variation in PE-affiliated practices across all specialties



Data on county-level PE penetration for oncology was unavailable and has not been included in the map.

Summary

- **PE is part of a broader trend of corporate consolidation of physician practices**

- **Across all evaluated states**
  - The majority of physicians are affiliated with hospitals or PE-acquired practices
  - Physicians in PE-acquired practices have increased steadily since 2015
  - Variation across specialties and geographic regions

- **Existing evidence on PE investments in physician practices**
  - PE increases commercial prices by 10-26% and service utilization (Singh et al., 2022, La Forgia et al., 2022, Braun et al., 2021)
  - PE increases hiring of physician assistants and nurse practitioners, increasing physician turnover (Singh et al., 2025, Bruch et al., 2023)
  - PE has mixed effects on quality (Dixit et al., 2026, Gupta et al., 2024, Kannan et al., 2024, Cerullo et al., 2022, Braun et al., 2021)

- **Policy challenge:** balance need for capital investment by physician practices with protections for patients and the clinical workforce

State Policy Options to Address Corporate Consolidation of Health Care Entities

From NASHP Model Law[1]: *Addressing Transaction Oversight, Corporate Practice of Medicine and Transparency*

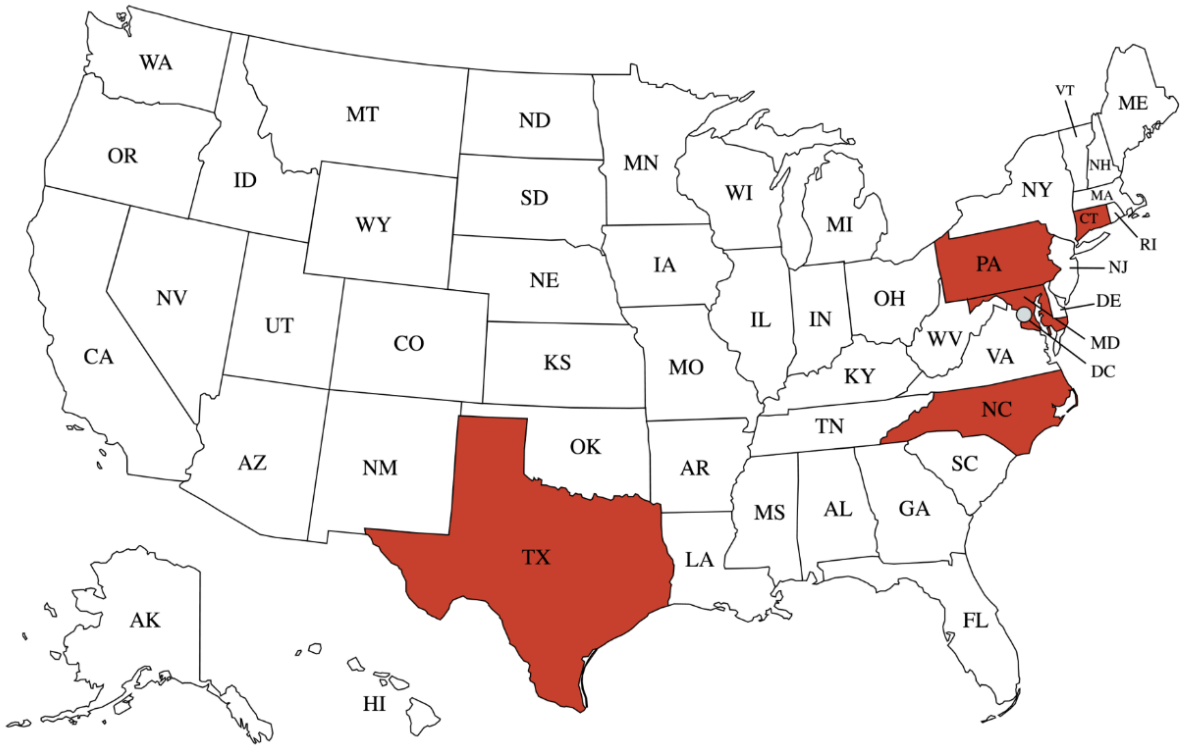
	Policy Approach	Policy Concerns
	**Health Care Transaction Oversight Authority** (NASHP Model Part I)	Consolidation, costs, closures, sale-leasebacks
	**Strengthening the Prohibition on Corporate Practice of Medicine, Banning physician noncompetes, nondisparagement agreements** (NASHP Model Part II)	Professional autonomy, workforce effects, interference with clinical decision-making
	**Ownership Transparency** (NASHP Model Part III)	Opacity, lack of accountability

[1] https://nashp.org/a-model-act-for-state-oversight-of-proposed-health-care-mergers/

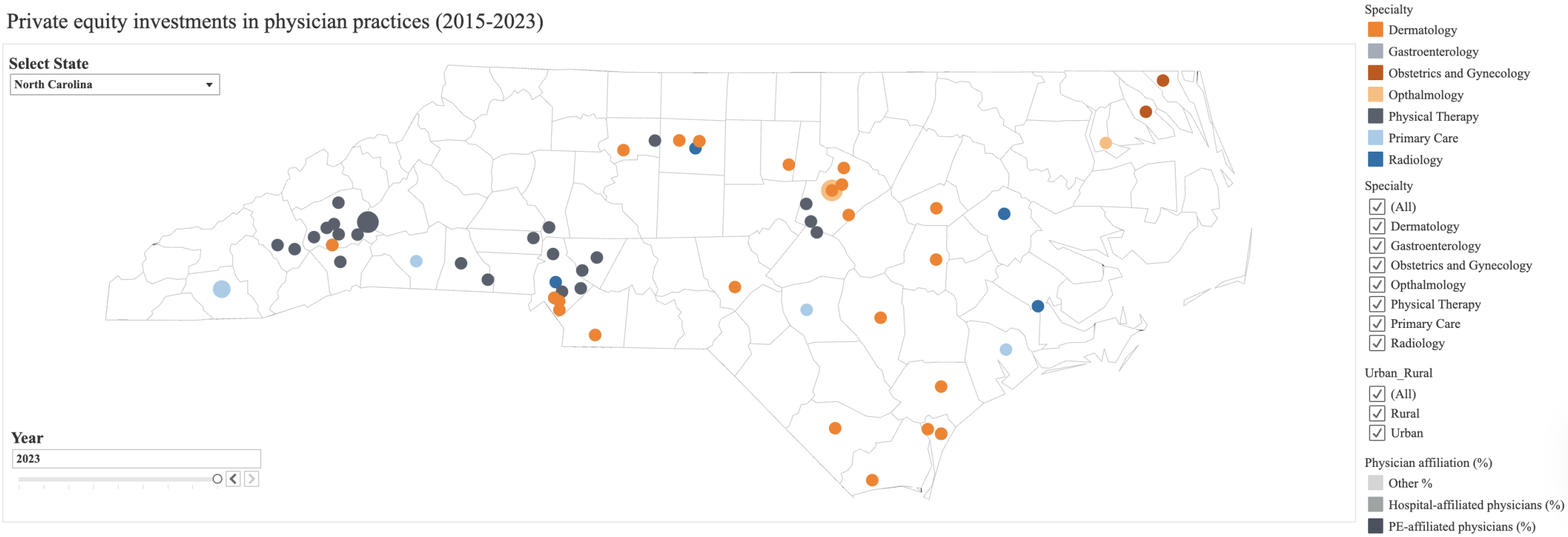
New Tool: Private Equity State Tracker

A new interactive tool developed by our team at the Center for Advancing Health Policy through Research at Brown University

U.S. States Where We Track Private Equity in Physician Specialties



New Interactive Tool: The Private Equity State Tracker



State-specific online dashboard to track trends in PE investment in health care – stay tuned!

CAHPR CENTER FOR ADVANCING HEALTH POLICY THROUGH RESEARCH

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Thank you!

Appendix: PE & Hospitals

JAMA Internal Medicine | Original Investigation (2020)

Changes in Hospital Income, Use, and Quality Associated With Private Equity Acquisition

Joseph D. Bruch, BA; Suhas Gondi, BA; Zirui Song, MD, PhD

Table 1. Characteristics of 204 Private Equity–Acquired Hospitals and 532 Control Hospitals[a]

Characteristic	Hospitals, No. (%)	
	Private equity acquisition	Control
Hospital ownership		
Nonprofit	29 (14.2)	76 (14.3)
Government	3 (1.5)	8 (1.5)
For profit	172 (84.3)	448 (84.2)
Geographic region		
South	125 (61.3)	325 (61.1)
West	37 (18.1)	97 (18.2)
Northeast	21 (10.3)	55 (10.3)
Midwest	21 (10.3)	55 (10.3)
Teaching hospital	55 (27.0)	139 (26.1)
Hospital size by total No. of beds, mean No.	212	200
Small (<150 beds), %	30.9	40.8
Medium (150-350 beds), %	56.4	45.1
Large (>350 beds), %	12.8	14.2

Figure. Total Charge to Cost Ratios Before and After Private Equity Acquisition



JAMA Internal Medicine | Original Investigation (2020)

Changes in Hospital Income, Use, and Quality Associated With Private Equity Acquisition

Joseph D. Bruch, BA; Suhas Gondi, BA; Zirui Song, MD, PhD

Relative to control, PE acquisitions increased:

Net income	27%
Charges per day	7%
Charge/cost ratio	7%
Charge/cost ratio (ED)	16%
Case mix	1.4%
Medicare %	-2.4%

Figure. Total Charge to Cost Ratios Before and After Private Equity Acquisition

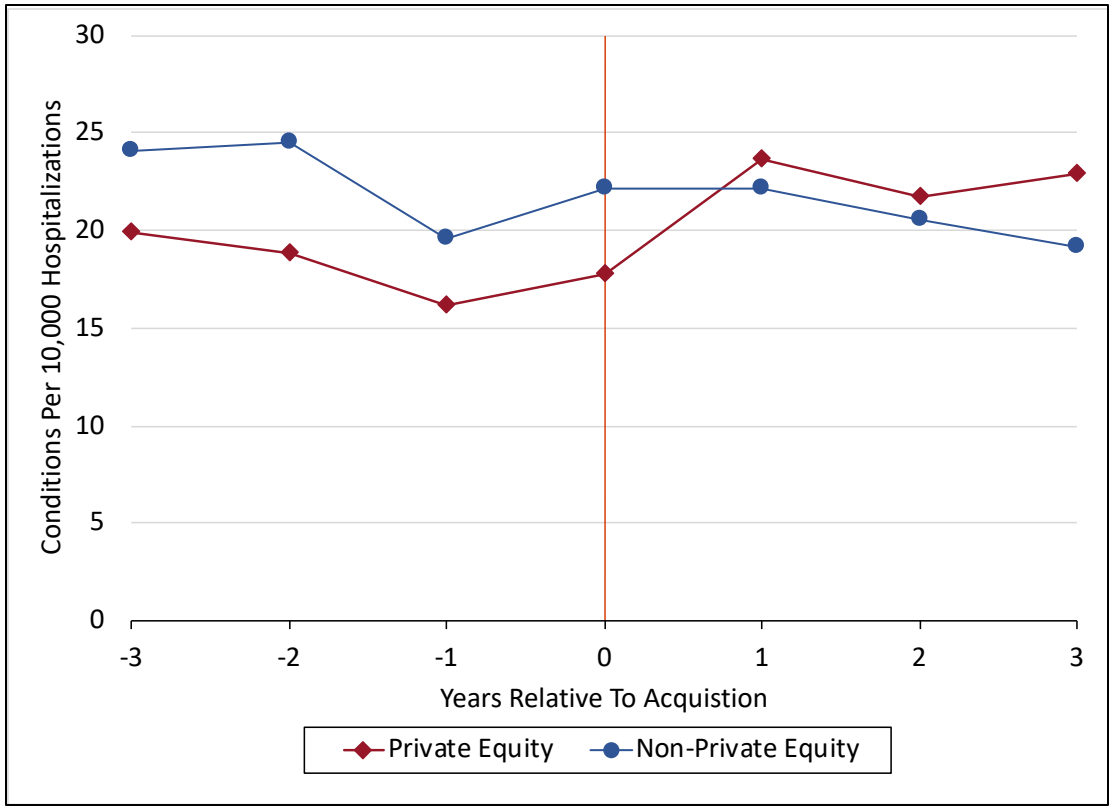


JAMA | Original Investigation (2023)

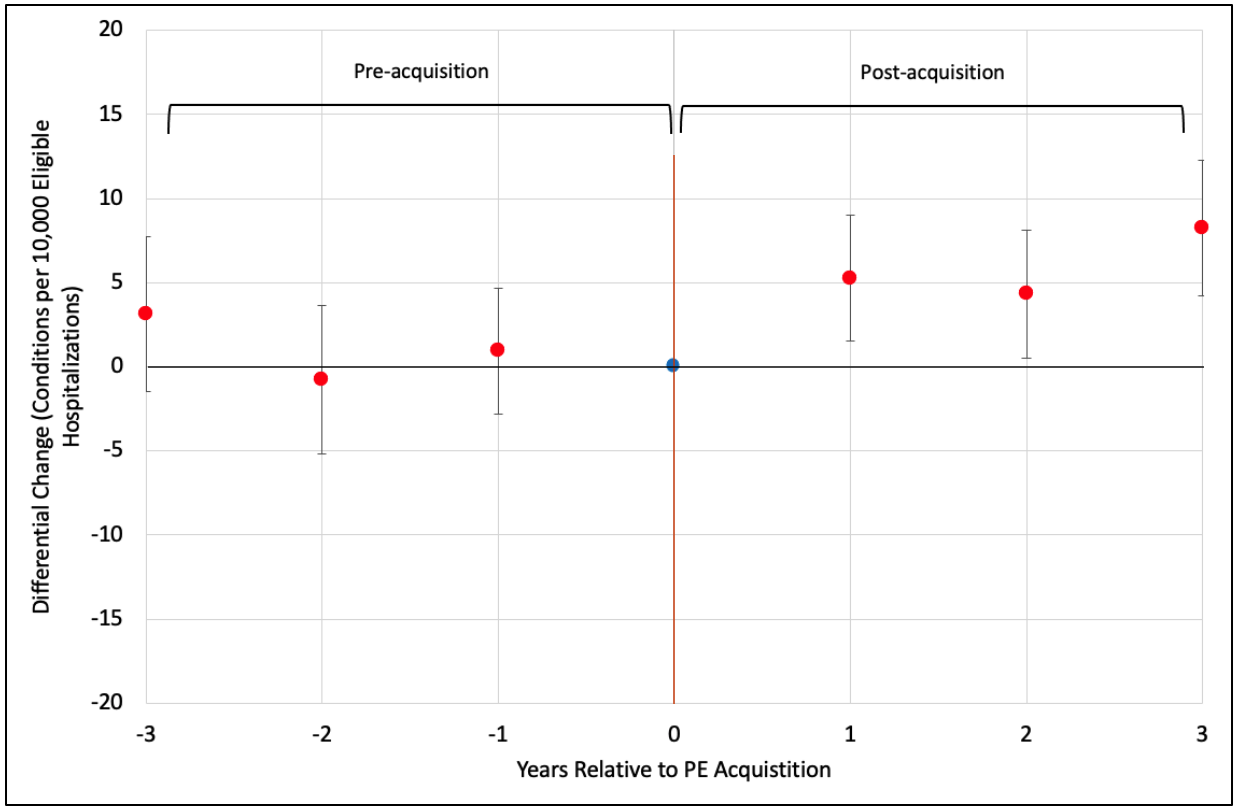
Changes in Hospital Adverse Events and Patient Outcomes Associated With Private Equity Acquisition

Sneha Kannan, MD; Joseph Dov Bruch, PhD; Zirui Song, MD, PhD

Composite Adverse Events (Unadjusted)



Change in PE Hospitals Relative to Control (Adjusted)



JAMA | Original Investigation (2023)

Changes in Hospital Adverse Events and Patient Outcomes Associated With Private Equity Acquisition

Sneha Kannan, MD; Joseph Dov Bruch, PhD; Zirui Song, MD, PhD

PE acquisition associated with:

Aggregate conditions	**25% ↑**
Falls	**27% ↑**
Central line infections	**38% ↑**

(Despite 16% fewer central lines done)

Table 2. Changes in Hospital-Acquired Conditions Associated With Private Equity Acquisition

	Rate per 10 000 eligible hospitalizations				Difference-in-differences estimates			*P* value[f]	
	At private equity hospitals (n = 662 095)[a]		At matched control hospitals (n = 4 160 720)[b]						
	Before acquisition	After acquisition	Before acquisition	After acquisition	Unadjusted (95% CI)[c]	Adjusted (95% CI)[d]	Percentage change from before acquisition in the private equity group[e]	Unadjusted	Adjusted[g]
Hospital-acquired conditions[h]	18.1	22.1	22.0	20.7	4.6 (2.2 to 7.0)	4.6 (2.0 to 7.2)	25.4	<.001	.004
Foreign body	0.3	0.4	0.4	0.3	0.2 (−0.1 to 0.5)	0.2 (−0.1 to 0.5)	60.5	.23	>.99
Pressure ulcers	1.5	2.0	1.6	1.9	0.2 (−0.5 to 0.9)	0.3 (−0.5 to 1.0)	18.0	.48	>.99
Falls and trauma	6.8	6.8	8.7	6.9	1.5 (0.1 to 2.9)	1.9 (0.3 to 3.4)	27.3	.002	.02
Catheter-associated urinary tract infection	1.8	3.2	3.6	4.7	0.2 (−0.8 to 1.3)	0.3 (−0.8 to 1.4)	18.1	.57	>.99
Central line-associated bloodstream infection	4.0	6.1	3.9	3.8	2.0 (1.0 to 3.1)	1.5 (0.4 to 2.6)	37.7	.005	.04
Manifestations of poor glycemic control[i]	0.8	1.1	0.8	0.8	0.3 (−0.1 to 0.8)	0.1 (−0.4 to 0.6)	14.9	.64	>.99
Surgical site infection[j]	10.8	21.6	17.5	12.6	15.1 (−1.6 to 31.8)	16.0 (−2.3 to 34.2)	147.8	.09	.69
Deep vein thrombosis or pulmonary embolism[k]	65.6	58.4	50.9	41.7	2.2 (−16.1 to 20.4)	2.2 (−17.2 to 21.6)	3.3	.83	>.99

Surgical site infections doubled at PE hospitals, while declining at controls.
(Despite 8% fewer surgeries performed)

All of this happened after a **12% ↑ in transfers** (of older and sicker patients) to other hospitals after acquisition, meaning the patients left were younger, lower-risk. **Contributes to in-hospital mortality ↓, but patient harm still ↑.**

JAMA | Original Investigation (2023)

Changes in Hospital Adverse Events and Patient Outcomes Associated With Private Equity Acquisition

Sneha Kannan, MD; Joseph Dov Bruch, PhD; Zirui Song, MD, PhD

For every 100 patients admitted with sepsis, 1 additional patient was transferred away first (36% ↑ from baseline).

eTable 10. Discharge Location by Admission Diagnosis

		Private Equity Group (N=662,095)		Matched Control Group (N=4,160,720)		Unadjusted Difference-in-Differences (DID)[a]	Adjusted Difference-in-Differences (DID)[b] (%) (95% CI)
		Pre-Acquisition (N=287,185)	Post-Acquisition (N=374,910)	Pre-Acquisition (N=1,776,090)	Post-Acquisition (N=2,384,630)		
Transfer to Acute Care Hospital (%)	All Hospitalizations	2.3	2.8	2.2	2.3	0.4	0.3 (12.2) [0.2 to 0.4]
	Sepsis	2.4	3.5	2.4	2.5	1.0	0.9 (36.2) [0.5 to 1.2]
	Heart Failure w/ Shock	2.4	2.9	2.6	2.7	0.4	0.3 (10.5) [-0.2 to 0.7]
	THA	0.2	0.4	0.5	0.5	0.0	0 (12.7) [-0.2 to 0.2]
	COPD/Pneumonia	1.2	1.5	1.2	1.1	0.4	0.2 (14.3) [-0.1 to 0.4]
	Other	2.4	2.9	2.4	2.4	0.4	0.2 (9.5) [0.1 to 0.3]

The Boston Globe

They died in hallways. In line. Alone. Their deaths are the human cost of Steward's financial neglect.

This story was reported by Liz Kowalczyk, Chris Serres, Jessica Bartlett, Elizabeth Koh, Mark Arsenault, and Yoohyun Jung. It was written by Arsenault and edited by Brendan McCarthy.

Published Sept. 6, 2024



Annals of Internal Medicine (2025) ORIGINAL RESEARCH

Hospital Staffing and Patient Outcomes After Private Equity Acquisition

Sneha Kannan, MD, MS; Joseph Dov Bruch, PhD; José R. Zubizarreta, PhD; Jennifer Stevens, MD, MS; and Zirui Song, MD, PhD

Background: After private equity acquisition, hospitals may experience changes in staffing with implications for patients.

Objective: To examine hospital staffing and patient outcomes in emergency departments (EDs) and intensive care units (ICUs) before and after hospitals were acquired by private equity.

Design: Matched difference-in-differences analysis.

Setting: 100% Medicare Part A and B claims and Cost Report data from 2009 to 2019.

Patients: 1 007 529 ED visits and 121 080 ICU hospitalizations across 49 private equity hospitals were compared with 6 179 854 ED visits and 760 377 ICU hospitalizations across 293 matched control hospitals.

Measurements: Hospital ED and ICU salary expenditures, patient mortality, length of stay, and transfers. Secondary outcomes included hospital-wide salary expenditures and full-time employees.

Results: After acquisition, private equity hospitals reduced ED salary expenditures by 18.2% (−$12.63 per inpatient bed day; 95% CI, −$22.74 to −$2.52; $P = 0.015$) and ICU salary expenditures by 15.9% (−$8.46 per inpatient bed day, CI, −$13.21 to −$3.72; $P < 0.001$) relative to control. This occurred alongside average hospital-wide reductions in full-time employees by 11.6% and salary expenditures by 16.6%, relative to control. Beneficiaries in EDs of private equity hospitals experienced 7.0 additional deaths per 10 000 visits after acquisition relative to control (13.4% increase from a raw baseline of 52.4 deaths per 10 000; $P = 0.009$). No differential change in ICU mortality was observed. However, patients in private equity EDs and ICUs experienced a 4.2% and 10.6% increase in transfers, respectively, to other acute care hospitals after acquisition relative to control. On average, ICU length of stay shortened by 0.2 days. Sensitivity analyses produced qualitatively similar findings.

Limitation: Potential unmeasured confounding; lack of generalizability to other acquisitions or patient populations.

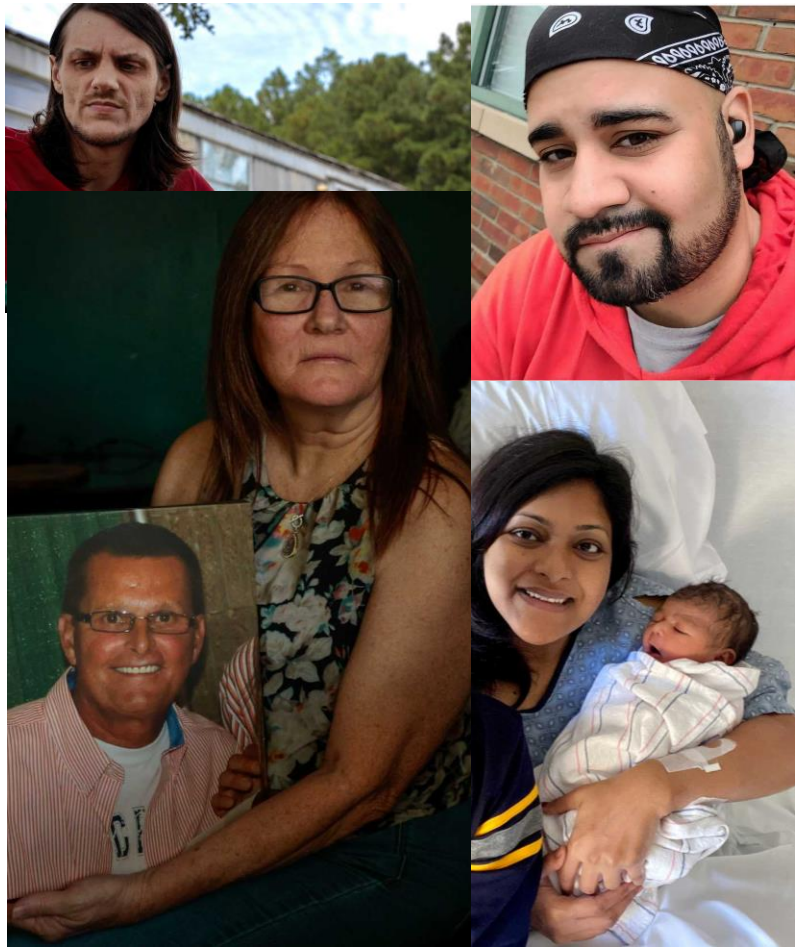
Conclusion: After private equity acquisition, hospitals on average reduced salaries and staffing relative to nonacquired hospitals, notably in the EDs and ICUs, which are higher-acuity and staffing-sensitive areas. This decreased capacity to deliver care may explain the increased patient transfers to other hospitals, shortened ICU lengths of stay, and increased ED mortality.

Primary Funding Source: National Institutes of Health and Agency for Healthcare Research and Quality.

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For author, article, and disclosure information, see end of text.
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The Boston Globe

They died in hallways. In line. Alone.

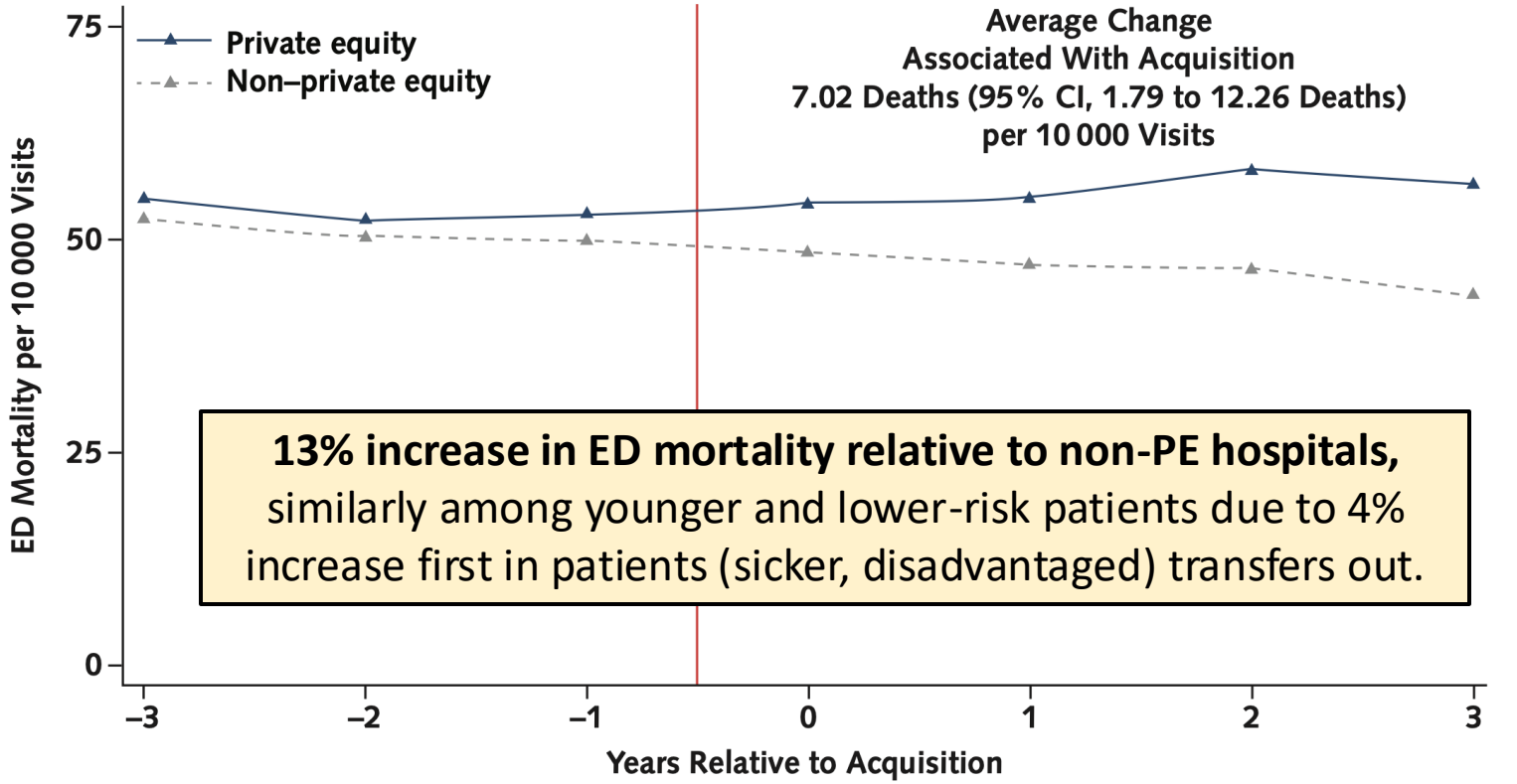


Annals of Internal Medicine (2025) ORIGINAL RESEARCH

Hospital Staffing and Patient Outcomes After Private Equity Acquisition

Sneha Kannan, MD, MS; Joseph Dov Bruch, PhD; José R. Zubizarreta, PhD; Jennifer Stevens, MD, MS; and Zirui Song, MD, PhD

Figure 3. Emergency department mortality at private equity and control hospitals.



13% increase in ED mortality relative to non-PE hospitals, similarly among younger and lower-risk patients due to 4% increase first in patients (sicker, disadvantaged) transfers out.

Annals of Internal Medicine (2025)

ORIGINAL RESEARCH

Hospital Staffing and Patient Outcomes After Private Equity Acquisition

Sneha Kannan, MD, MS; Joseph Dov Bruch, PhD; José R. Zubizarreta, PhD; Jennifer Stevens, MD, MS; and Zirui Song, MD, PhD

Staffing cuts could improve efficiency, but hospital care remains a hands-on human endeavor at the bedside.

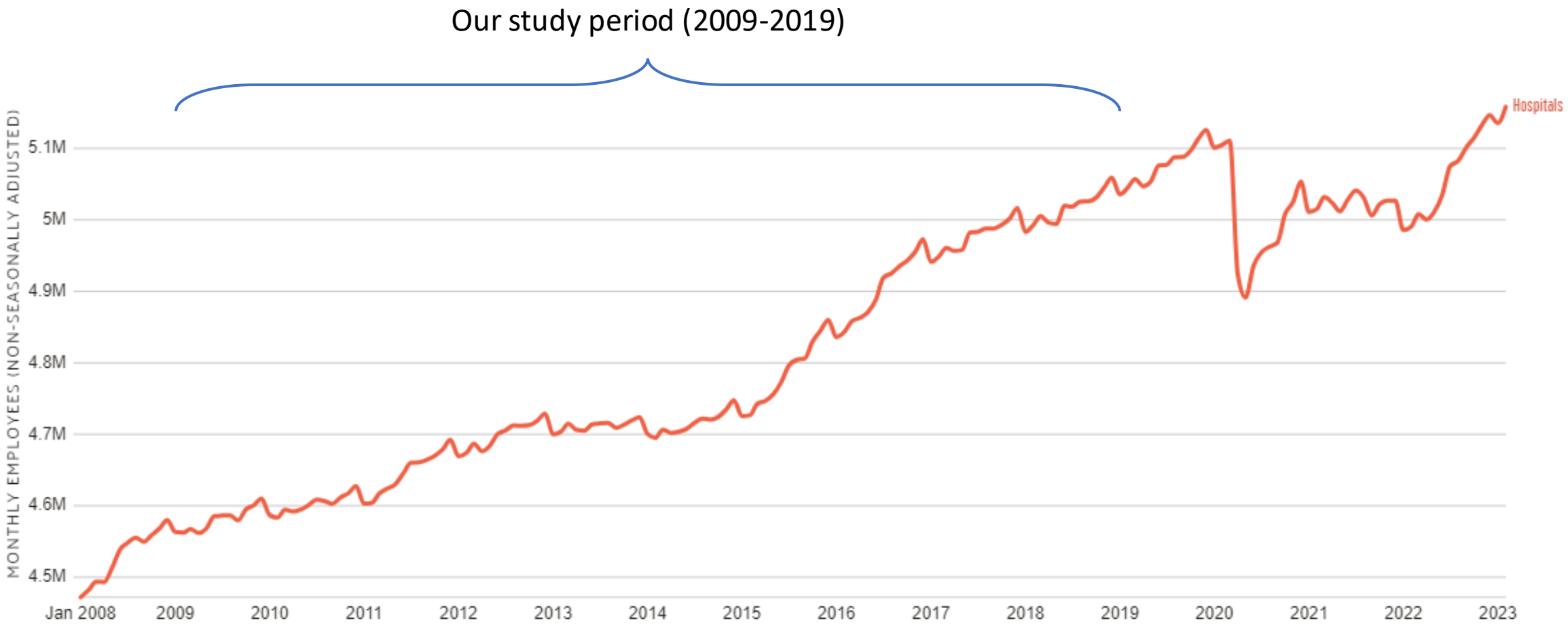
Table 2. Changes in Patient Outcomes in Private Equity and Control Hospitals*

Outcome	Private Equity		Control		Unadjusted Between-Group Difference†	Adjusted Between-Group Difference‡ (Percentage) [95% CI]	*P* Value
	Preacquisition	Postacquisition	Preacquisition	Postacquisition			
	(*n* = 49)		(*n* = 293)				
Hospital salary expenditures					-	-	-
ED salary expenditures per inpatient bed day, $	69.37	65.96	81.59	89.03	−10.84	−12.63 (−18.2) [−22.74 to −2.52]	0.015
ICU salary expenditures per inpatient bed day, $	53.25	48.90	57.53	60.39	−7.20	−8.46 (−15.9) [−13.21 to −3.72]	<0.001
	(*n* = 1 007 529)		(*n* = 6 197 854)				
ED visits					-	-	-
In-hospital mortality per 10 000	52.35	57.10	49.37	44.61	9.50	7.02 (13.4) [1.79 to 12.26]	0.009
Transfer to acute care hospital, %	2.65	3.65	2.82	2.89	0.94	0.11 (4.2) [0.04 to 0.18]	0.002
	(*n* = 121 080)		(*n* = 760 377)				
ICU hospitalizations					-	-	-
ICU length of stay, *d*	4.12	3.76	3.79	3.68	−0.24	−0.20 (−4.8) [−0.26 to −0.13]	0.006
In-hospital mortality, %	11.25	11.07	11.02	10.61	0.23	−0.13 (−1.1) [−0.54 to 0.29]	0.55
Transfer to acute care hospital, %	4.41	5.10	4.11	4.09	0.66	0.47 (10.6) [0.18 to 0.74]	0.024

Likely Mechanism:
18% ↓ in ED salary expenditures (with 12% ↓ in FTEs total)

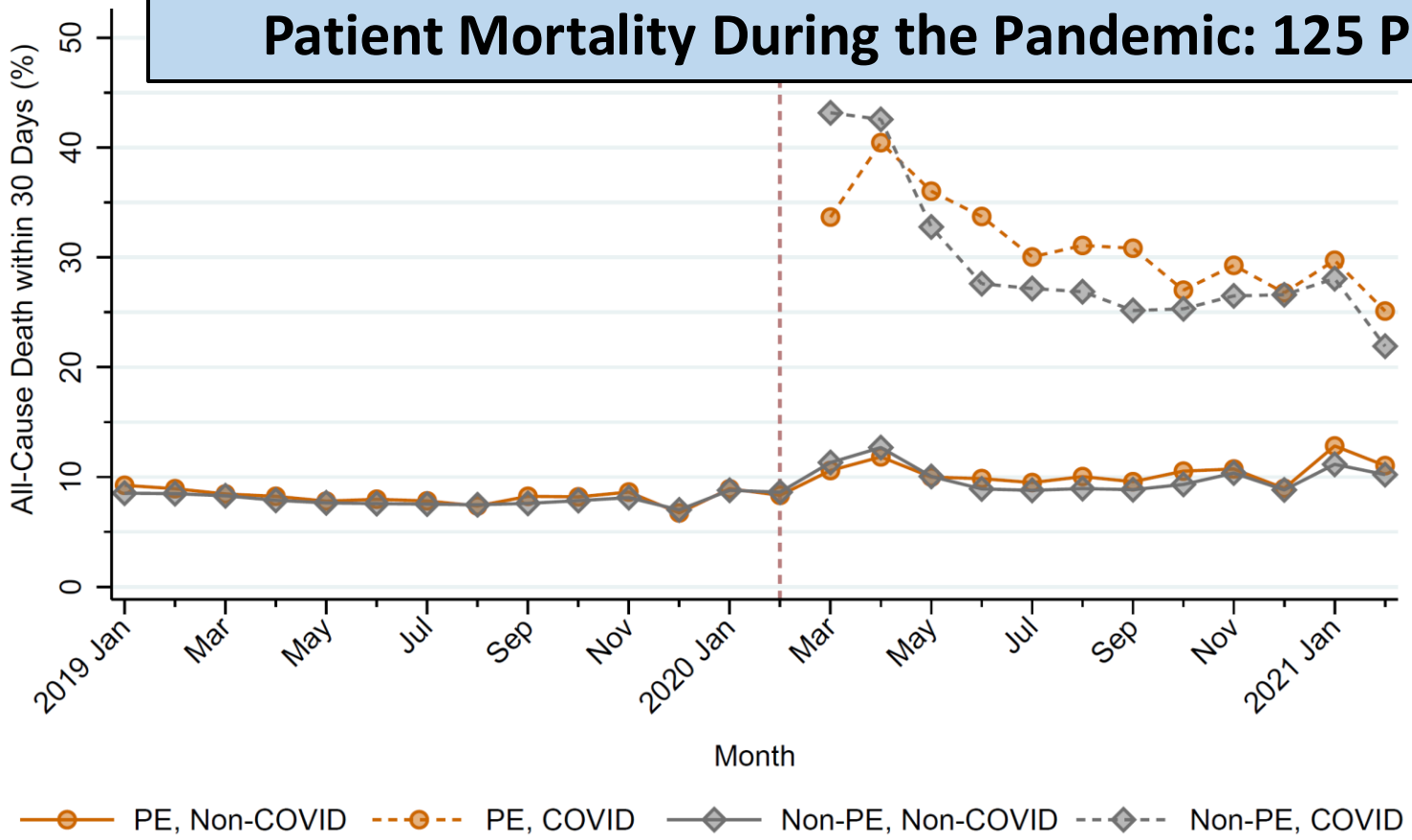
ED mortality: 13% ↑

National Trends in Hospital Employees



U.S. Bureau of Labor Statistics (2023)

Patient Mortality During the Pandemic: 125 PE vs. 3,087 Non-PE Hospitals



(Work in progress)

Mortality during COVID-19:
Non-Covid patients: **9-14% ↑**

	125 PE Hospitals (N=731,861 admissions)		3,087 Non-PE Hospitals (N=32,645,257 admissions)				
	Pre-March 2020	Post-March 2020	Pre-March 2020	Post-March 2020	Unadjusted Diff-in-Diff	Adjusted Diff-in-Diff (%) [95% CI]	P Value
Non-COVID In-Hospital Mortality (%)	2.9	3.7	3.2	3.7	0.4	0.41 (14.4) [0.24 to 0.59]	<0.001
Non-COVID 30-Day Mortality (%)	10.1	12.2	9.8	11.3	0.7	0.94 (9.3) [0.61 to 1.27]	<0.001

Policy Question 1: Does Private Equity Buy Distressed Hospitals?

242 PE Hospitals vs. 870 Matched Control Hospitals

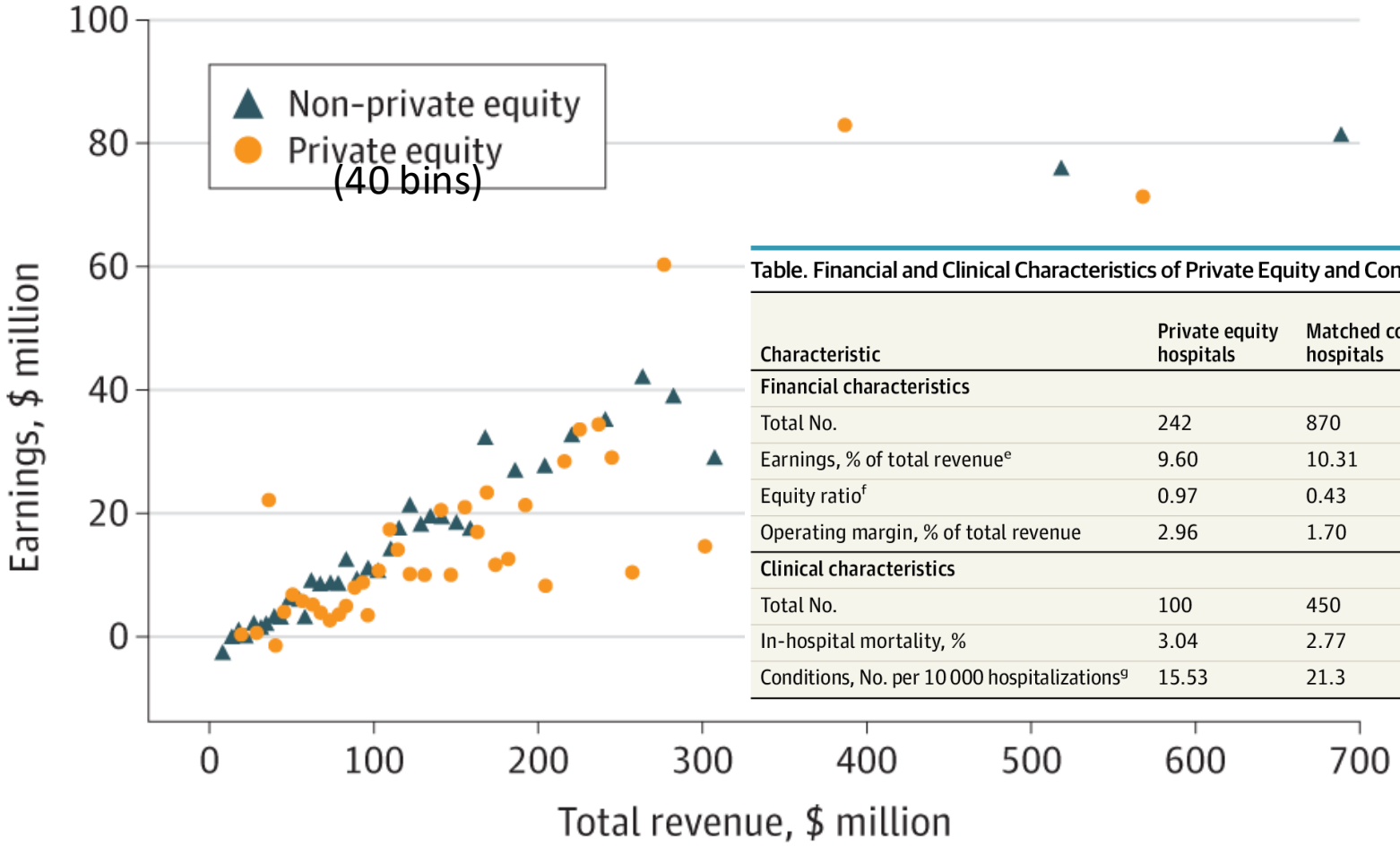


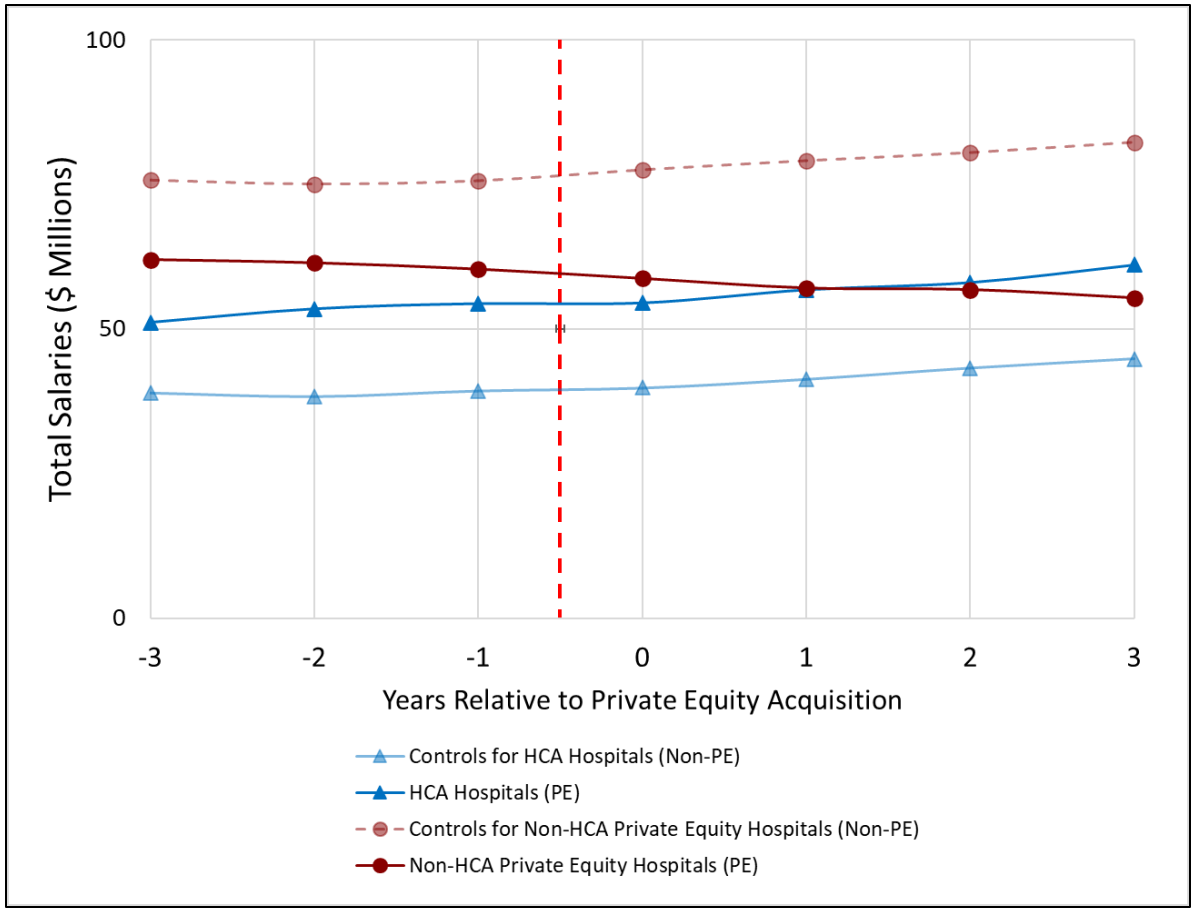
Table. Financial and Clinical Characteristics of Private Equity and Control Hospitals in the Year Before Acquisition[a]

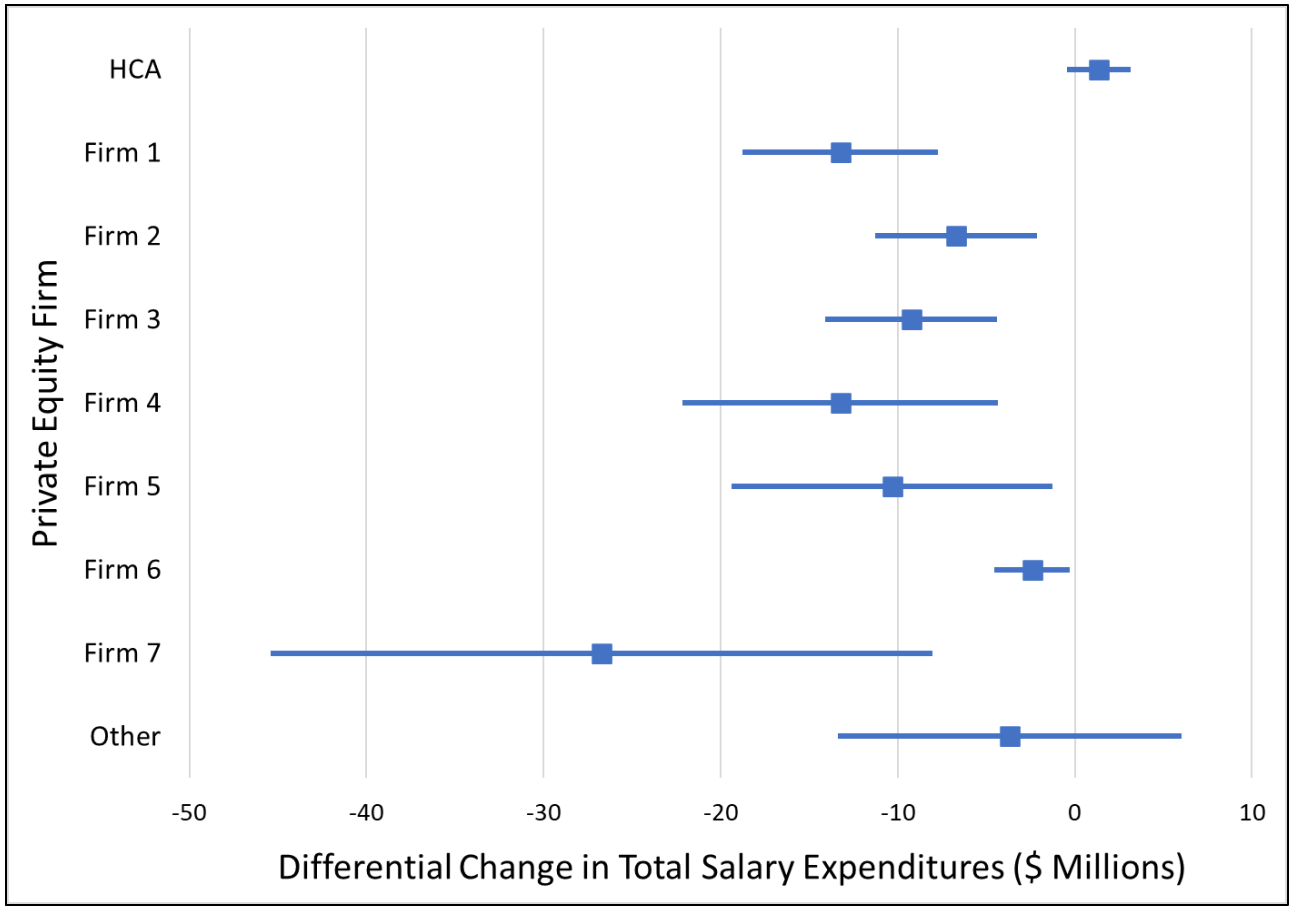
Characteristic	Private equity hospitals	Matched control hospitals	Unadjusted difference, %[b]	Adjusted difference, % (95% CI)[c]	*P* value	
					Unadjusted	Bonferroni adjusted[d]
Financial characteristics						
Total No.	242	870	NA	NA	NA	NA
Earnings, % of total revenue[e]	9.60	10.31	−0.22	−0.37 (−2.65 to 1.92)	.75	>.99
Equity ratio[f]	0.97	0.43	0.50	0.47 (0.33 to 0.61)	<.001	<.001
Operating margin, % of total revenue	2.96	1.70	1.12	0.87 (−1.12 to 2.87)	.39	>.99
Clinical characteristics						
Total No.	100	450	NA	NA	NA	NA
In-hospital mortality, %	3.04	2.77	0.42	−0.02 (−0.24 to 0.19)	.84	>.99
Conditions, No. per 10 000 hospitalizations[g]	15.53	21.3	−4.09	−0.80 (−11.66 to 10.05)	.88	>.99

Kannan S, Song Z. JAMA Internal Medicine (2024)

Policy Question 2: Do Private Equity Firms Differ in Strategy?

Changes in Total Salary Expenditures

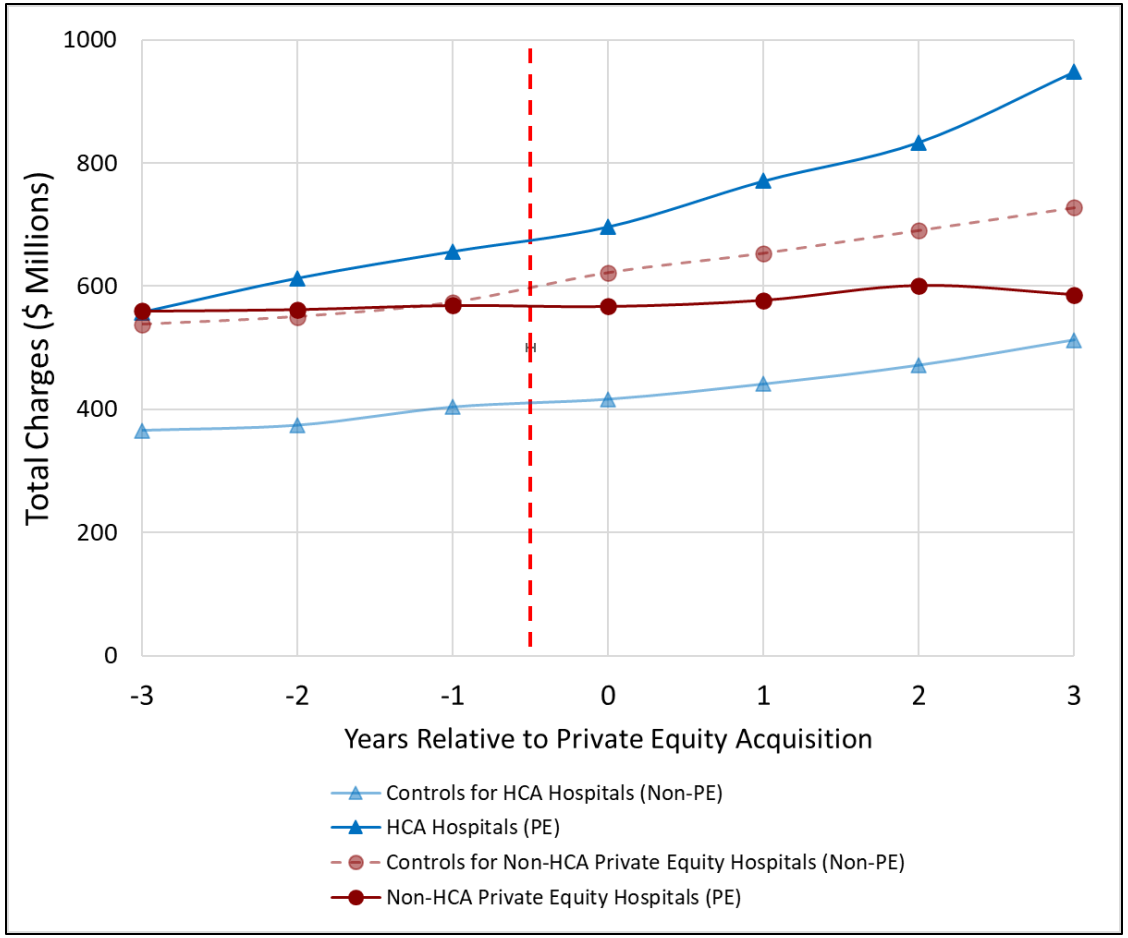


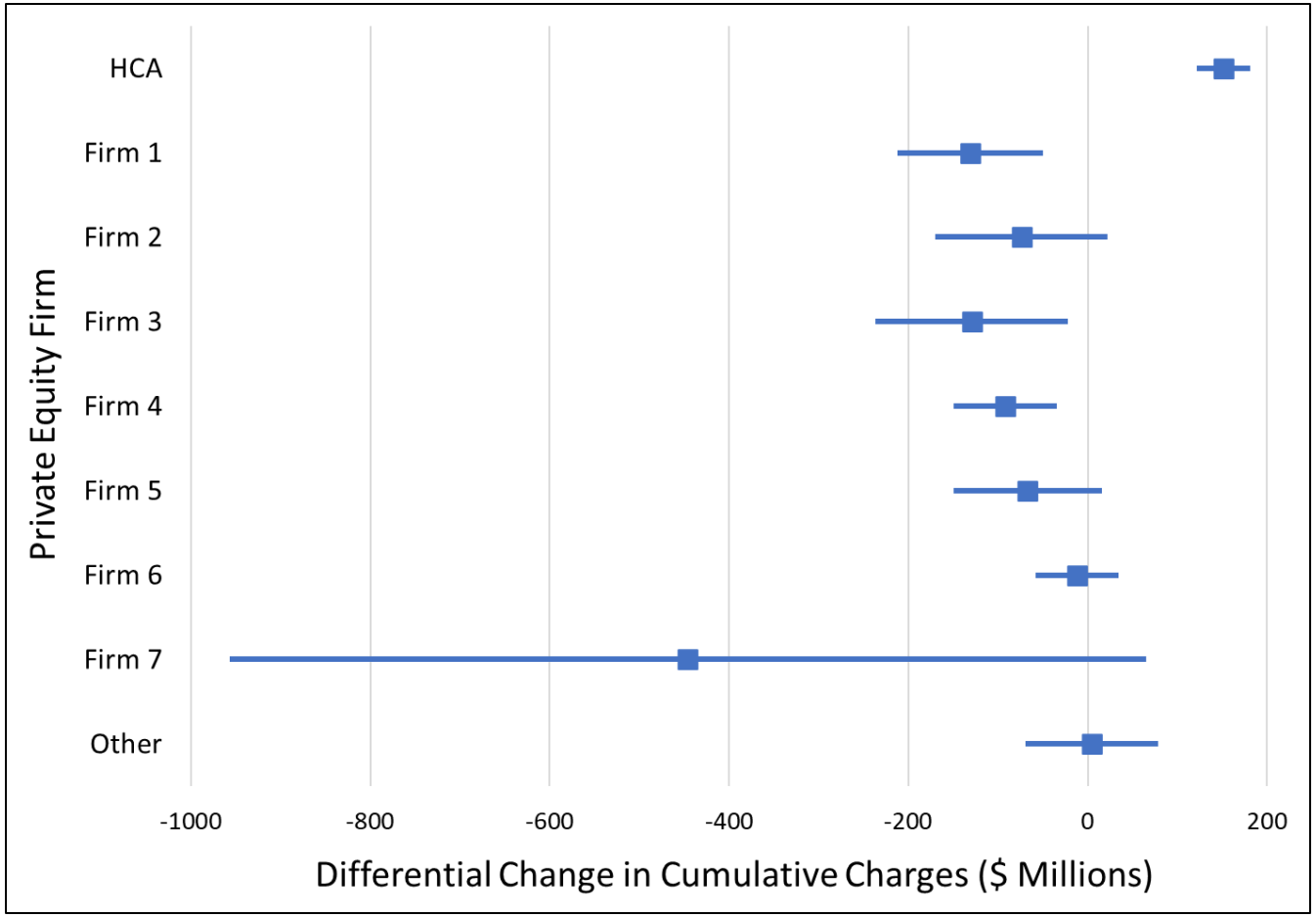


Kannan S, Song Z. Health Affairs (2025)

Policy Question 2: Do Private Equity Firms Differ in Strategy?

Changes in Cumulative Charges Billed (Reflects: Charges per service * Volume of services)





Kannan S, Song Z. Health Affairs (2025)

VIEWPOINT

A Policy Framework for the Growing Influence of Private Equity in Health Care Delivery

JAMA

F	Fraud & abuse	Enforcement of federal statutes: e.g. Anti-Kickback, Stark Laws
A	Antitrust	A) Federal: staffing and oversight at the Federal Trade Commission B) States: Attorneys General, “Corporate Practice of Medicine" laws
M	Moral hazard	A) Strengthen the accountability of PE firms to their acquired entities B) Address the % debt placed on the acquired entity (financial risk) C) Address the 20% tax rate for profits (“carried interest”)
P	Patients & prices	A) Protect patients from out-of-network (surprise) balance bills B) Address high prices to protect employers, states, and taxpayers
T	Transparency	A) Consider the threshold ($134 million) for reporting of acquisitions B) Public reporting of owners and investors (some states to date)

Cai C, Song Z. JAMA (2023)

JAMA Forum

The New Role of Private Investment in Health Care Delivery

David M. Cutler, PhD; Zirui Song, MD, PhD (2024)

Disruptive innovation as a business philosophy has brought benefits to many parts of the economy. But in health care delivery, evidence increasingly suggests that not all disruption creates value for patients. A central issue for policy is how to encourage truly value-adding innovation for patients and payers without hurting patients or bankrupting society.

VIEWPOINT

A Policy Framework for the Growing Influence of Private Equity in Health Care Delivery

1	Fraud & Abuse	Enforcement of federal statutes: e.g. Anti-Kickback, Stark Laws
2	Antitrust	A) Federal: staffing and oversight at the Federal Trade Commission B) States: Attorneys General, "corporate practice of medicine" laws
3	Moral Hazard	A) Strengthen the accountability of PE firms to their acquired entities B) Address the % debt placed on the acquired entity (financial risk) C) Address the 20% tax rate for profits (carried interest “loophole”)
4	Patients & Prices	A) Protect patients from out-of-network (surprise) balance bills B) Address high prices to protect employers, states, and taxpayers
5	Transparency	A) Consider the threshold ($134 million) for reporting of acquisitions B) Public reporting of owners and investors (some states to date)

Cai C, Song Z. JAMA (2023)

OWNERSHIP

By Christopher Cai and Zirui Song (2024)

POLICY INSIGHT

Protecting Patients And Society In An Era Of Private Equity Provider Ownership: Challenges And Opportunities For Policy

ABSTRACT **Private equity (PE) acquisitions in health care delivery nearly tripled from 2010 to 2020. Despite concerns around clinical and economic implications, policy responses have remained limited. We discuss the US policy landscape around PE ownership, using policies in the European Union for comparison. We present four domains in which policy can be strengthened. First, to improve oversight of acquisitions, policy makers should lower reporting thresholds, review sequential acquisitions that together affect market power, automate reviews with potential denials based on market concentration effects, consider new regulatory mechanisms such as attorney general veto, and increase funding for this work. Second, policy makers should increase the longer-run transparency of PE ownership, including the health care prices garnered by acquired entities. Third, policy makers should protect patients and providers by establishing minimum staffing ratios, spending floors for direct patient care, and limits on layoffs and the sale of real estate after acquisition (forms of “asset stripping”). Finally, policy makers should mitigate risky financial behavior by limiting the amount or proportion of debt used to finance PE acquisitions in health care.**