

Private Equity Acquisitions in Health Care: Evidence to Date

Courts, Corrections, and Justice Committee
New Mexico

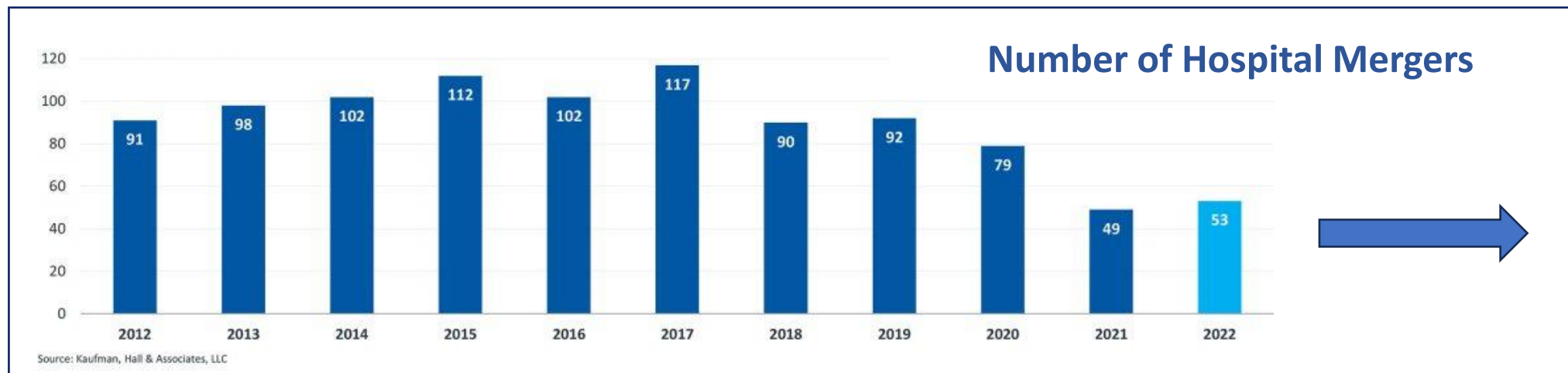
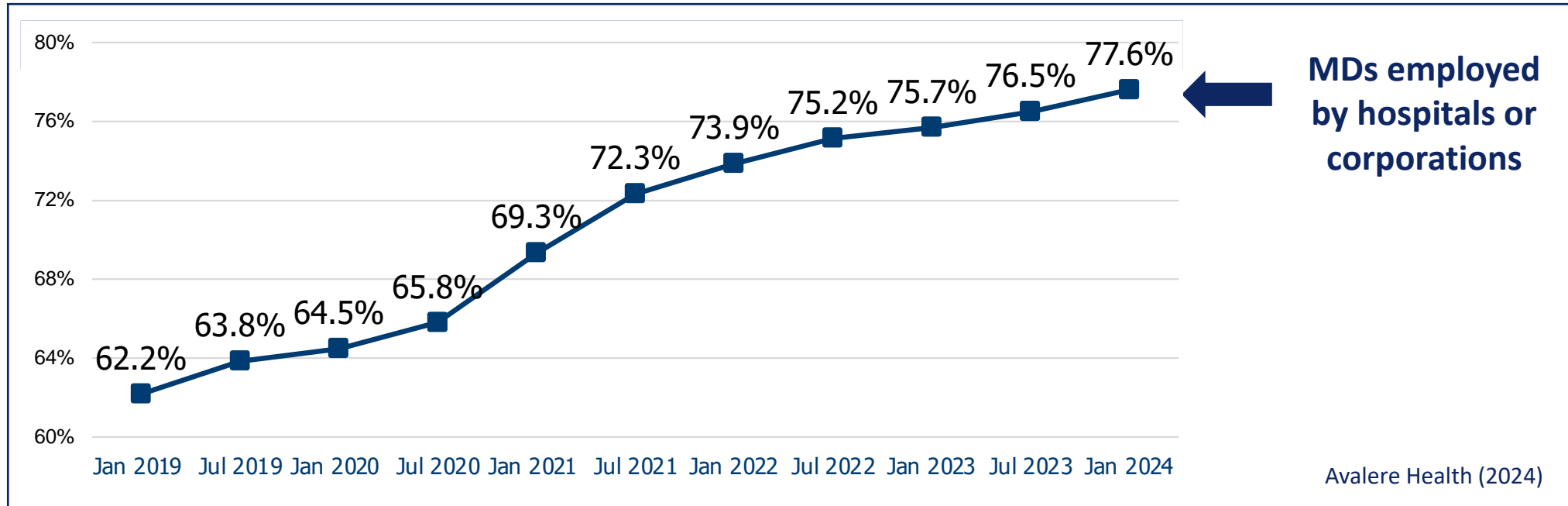
October 10, 2024



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

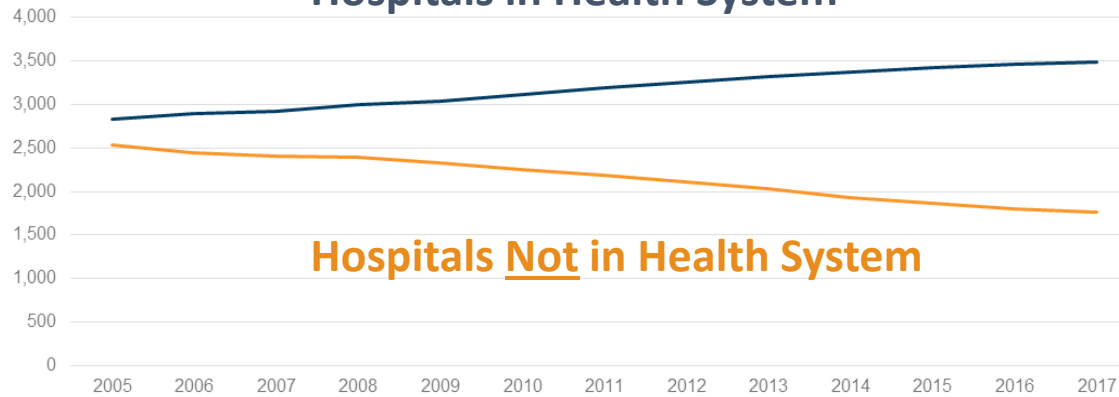


Current Era of Consolidation & Corporatization in Health Care



Current Era of Consolidation & Corporatization in Health Care

Hospitals in Health System



Hospitals Not in Health System

Examples of Cross-Market Mergers Announced Since June 2021 With Combined Operating Revenues of at Least \$5 Billion

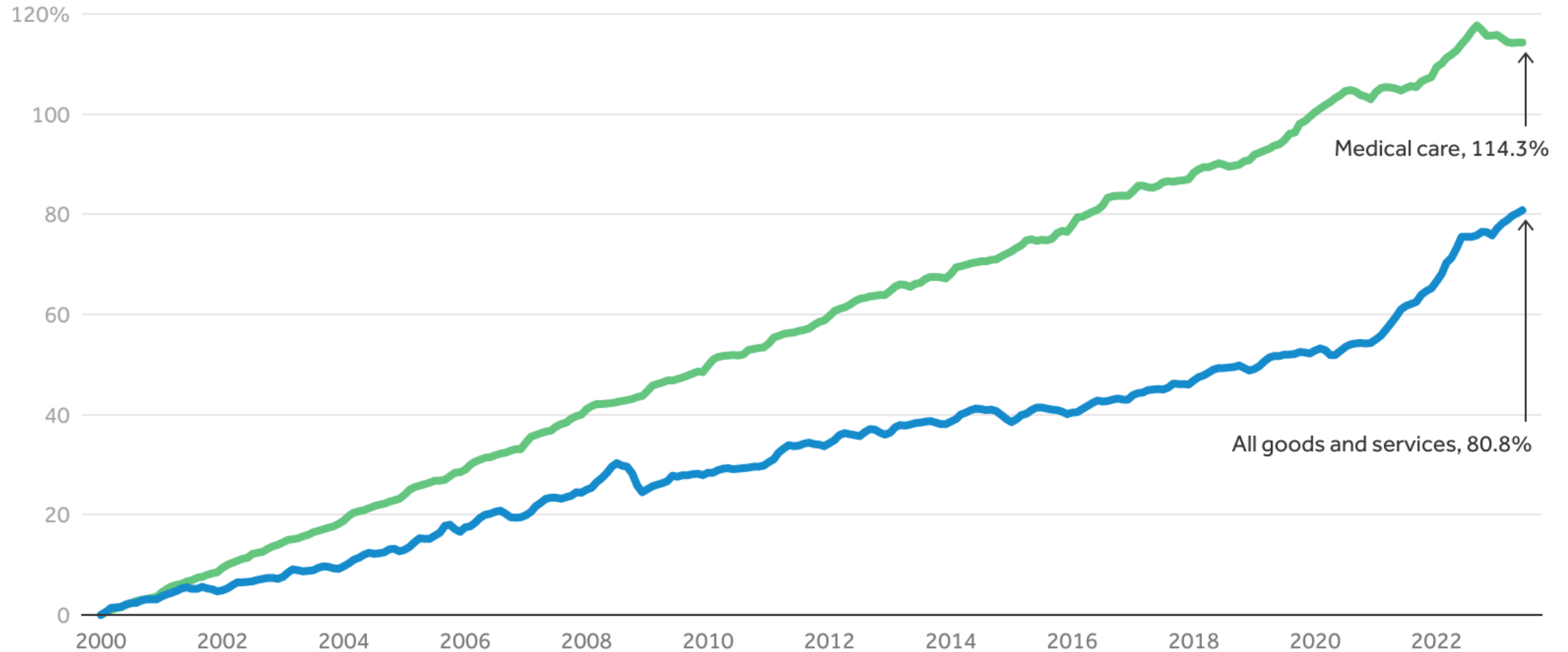
Year Announced	Larger system	Operating Revenues (\$B)	Smaller system	Operating Revenues (\$B)	Combined revenues (\$B)
2023	BJC Healthcare (MO)	\$6.3	St. Luke's Health System (MO)	\$2.4	\$8.7
2023	Kaiser Permanente (CA)*	\$95.4	Geisinger (PA)*	\$6.9	\$102.3
2023	Presbyterian Healthcare Services (NM)	\$5.5	UnityPoint Health (IA)	\$4.3	\$9.8
2022	University Of Michigan Health (MI)**	\$5.6	Sparrow Health System (MI)	\$1.5	\$7.1
2022	Marshfield Clinic Health System (MI)	\$2.8	Essentia Health (MN)	\$2.6	\$5.4
2022	Sanford Health (SD)***	\$7.1	Fairview Health Services (MN)***	\$6.4	\$13.5
2022	Advocate Aurora Health (IL)	\$14.1	Atrium Health (NC)	\$9.0	\$23.1
2021	Intermountain (UT)	\$7.7	SCL Health (CO)	\$2.9	\$10.6
2021	Spectrum Health (MI)	\$8.3	Beaumont Health (MI)	\$4.6	\$12.9

NOTE: Operating revenues come from audited financial statements covering the fiscal year prior to the merger announcement. State abbreviations reflect the corporate headquarters of a given health system. *Kaiser Permanente and Geisinger are both integrated health systems that include both insurance plans and health care providers. Revenues reflect all sources of operating income. **Reflects patient care revenues only. The University of Michigan does not separate out additional operating revenues related to its health system. ***Fairview Health Services and Sanford Health abandoned their plans to merge in July 2023.

SOURCE: KFF analysis of news releases and audited financial statements.

KFF

Prices of Medical Care vs. Prices of Everything Else – Last 23 Years



Note: Medical care includes medical services as well as commodities such as equipment and drugs.

Source: KFF analysis of Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) data

Peterson-KFF

Health System Tracker

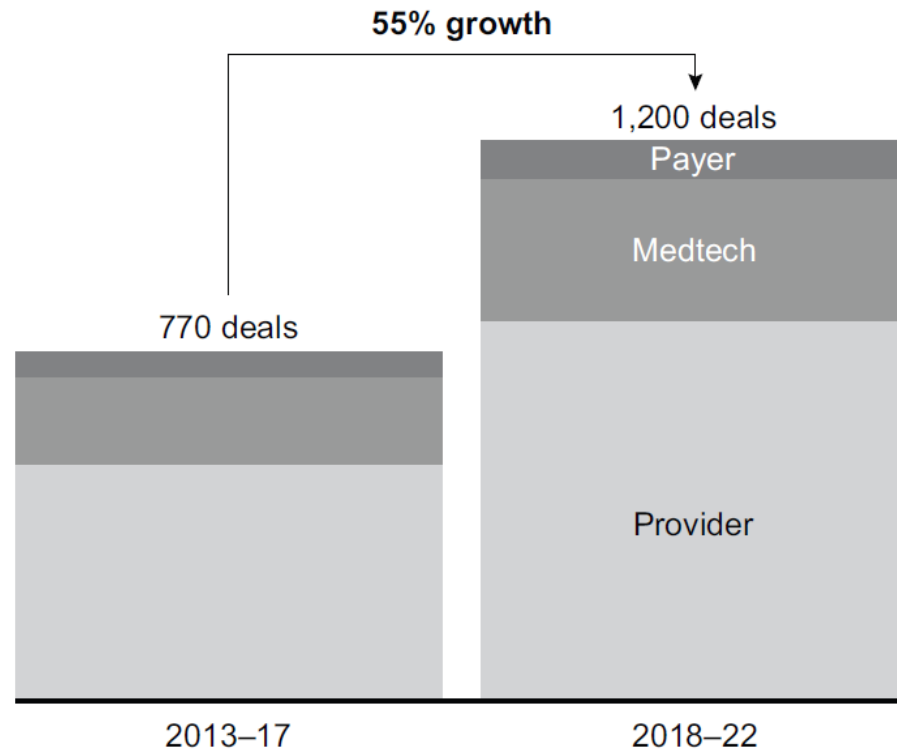
BREAKING NEWS

Steward Health Care, operator of 8 Massachusetts hospitals, files for bankruptcy

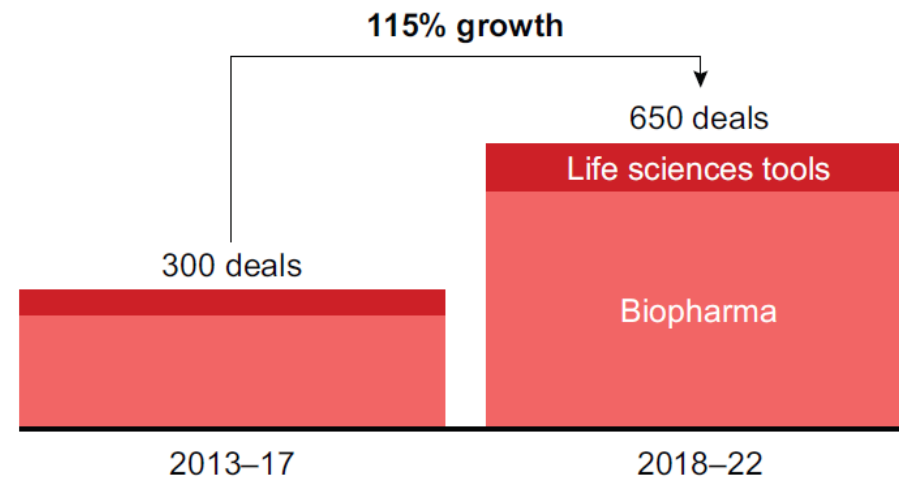


Global Private Equity Deals in Health Care

Global healthcare deal volume for provider, payer, and medtech sectors



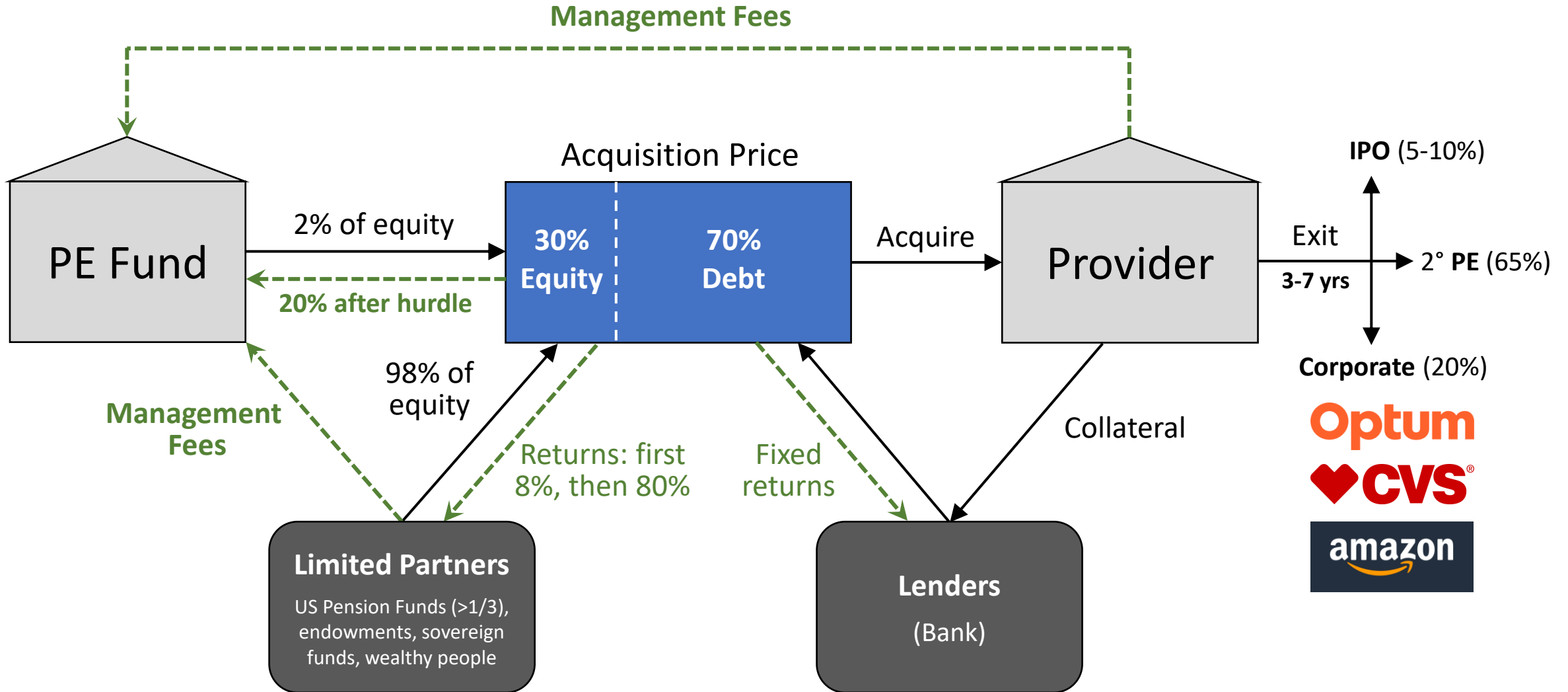
Global healthcare deal volume for biopharma and life sciences tools sectors



Notes: Excludes spin-offs, add-ons, loan-to-own transactions, special purpose acquisitions, and acquisitions of bankrupt assets; based on announcement date includes announced deals that are completed or pending, with data subject to change; deal value does not account for deals with undisclosed values; values updated based on Dealogic 2020 sponsor classifications; values include net debt where relevant; deal totals are rounded

Sources: Dealogic; AVCJ; Bain analysis

Classic Model of a Private Equity (PE) Acquisition



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

Song Z. In progress

Private Equity and Primary Care: Lessons from the Field

Umar Ikram, MD, PhD, Khin-Kyemon Aung, MD, MBA, Zirui Song, MD, PhD

Table 1. Comparison of Venture Capital, Growth Equity, and Traditional Private Equity

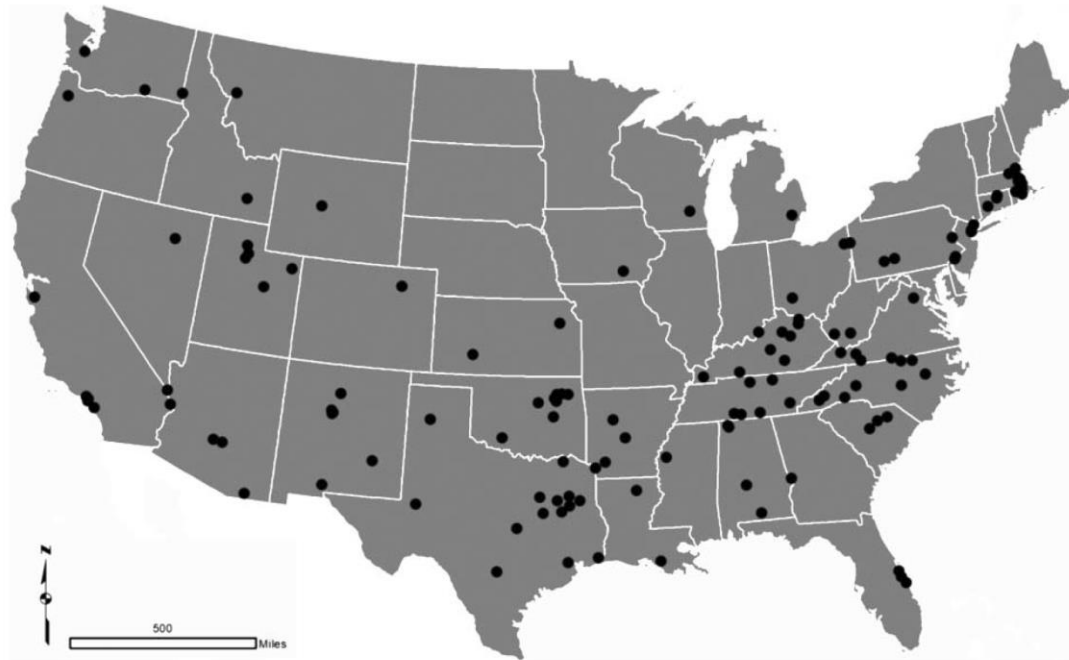
	Venture Capital	Growth Equity	Traditional Private Equity (Leveraged Buyout)
Stage of investment	Early stage	Later stage	Mature
Types of companies targeted	Start-ups or early-stage ventures with less of a proven business model, but with high growth potential	Organizations with stronger revenues and operating with proven business models, but in need of financing to pursue further growth	Established businesses that are undervalued or underperforming with inefficiencies that could be addressed through changes in operations, financial engineering, or governance
Amount of investment	Minority stake, <50% ownership	Usually minority stake, <50% ownership	Majority stake, >50% ownership
Exit time frame (on average)	5–10 years	3–7 years	3–7 years
U.S. deal value total in 2019*	\$136.5 billion	\$92.8 billion†	\$627.3 billion
Number of U.S. deals in 2019*	10,777	1,678†	5,133
Estimated average investment size	\$12.7 million	\$55.3 million	\$122.2 million
Expectations for returns	At least 10x; ideally, 50–100x returns for the most successful companies	At least 3–6x returns per deal	At least 2–4x returns per deal
Examples of firms	Venrock, Accel, Benchmark, Sequoia Capital, Madrona Venture Group	TPG Growth, Blackstone Growth, Summit Partners, General Atlantic, Insight Partners	The Carlyle Group, The Blackstone Group, KKR, TPG Capital, Warburg Pincus

*Data from Pitchbook. †Numbers reflect North America and Europe, not U.S. alone. Source: The authors

Geographic Distribution and Penetration

Hospital Acquisitions

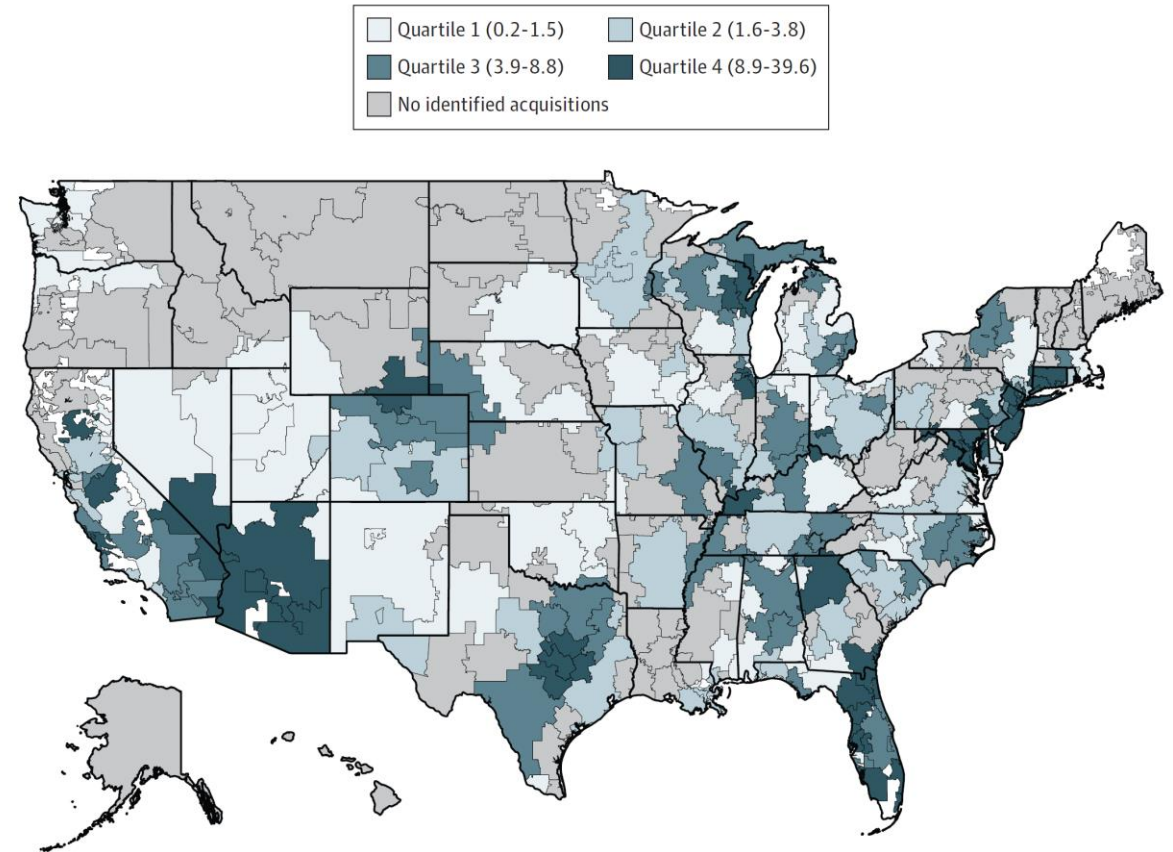
Figure. Locations of private equity-owned hospitals in 2018.



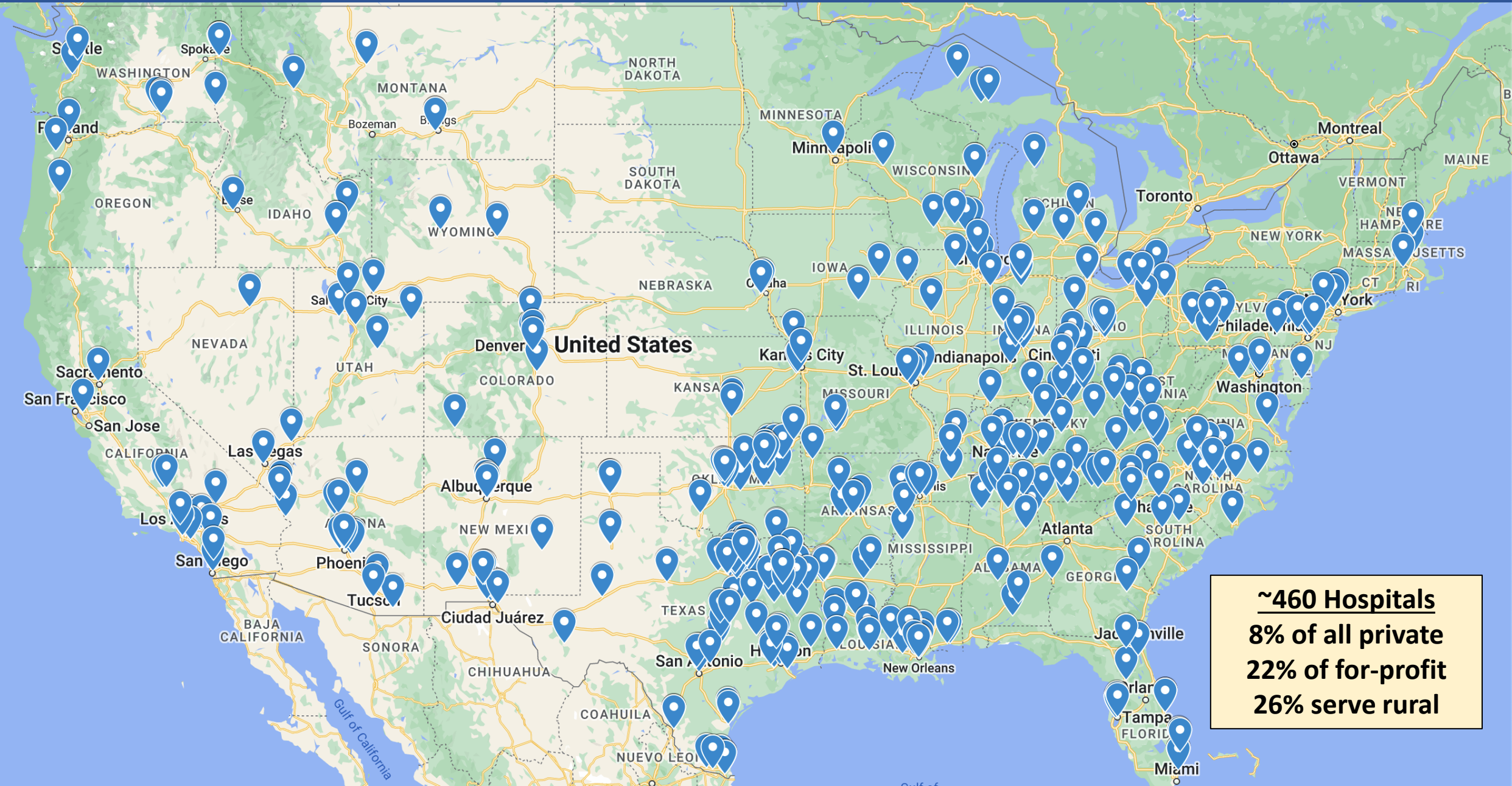
Using Medicare cost reports, the addresses for the 130 private equity-owned hospitals in 2018 were identified. There were no such hospitals located in Hawaii or Alaska.

Physician Practice Acquisitions

Figure 1. Private Equity (PE) Penetration Across 6 Office-Based Specialties by Hospital Referral Region (HRR)



Private Equity Hospitals in 2024



~460 Hospitals
8% of all private
22% of for-profit
26% serve rural

Private Equity Physician Practices

Figure 1. Private Equity (PE) Penetration Across 6 Office-Based Specialties by Hospital Referral Region (HRR)

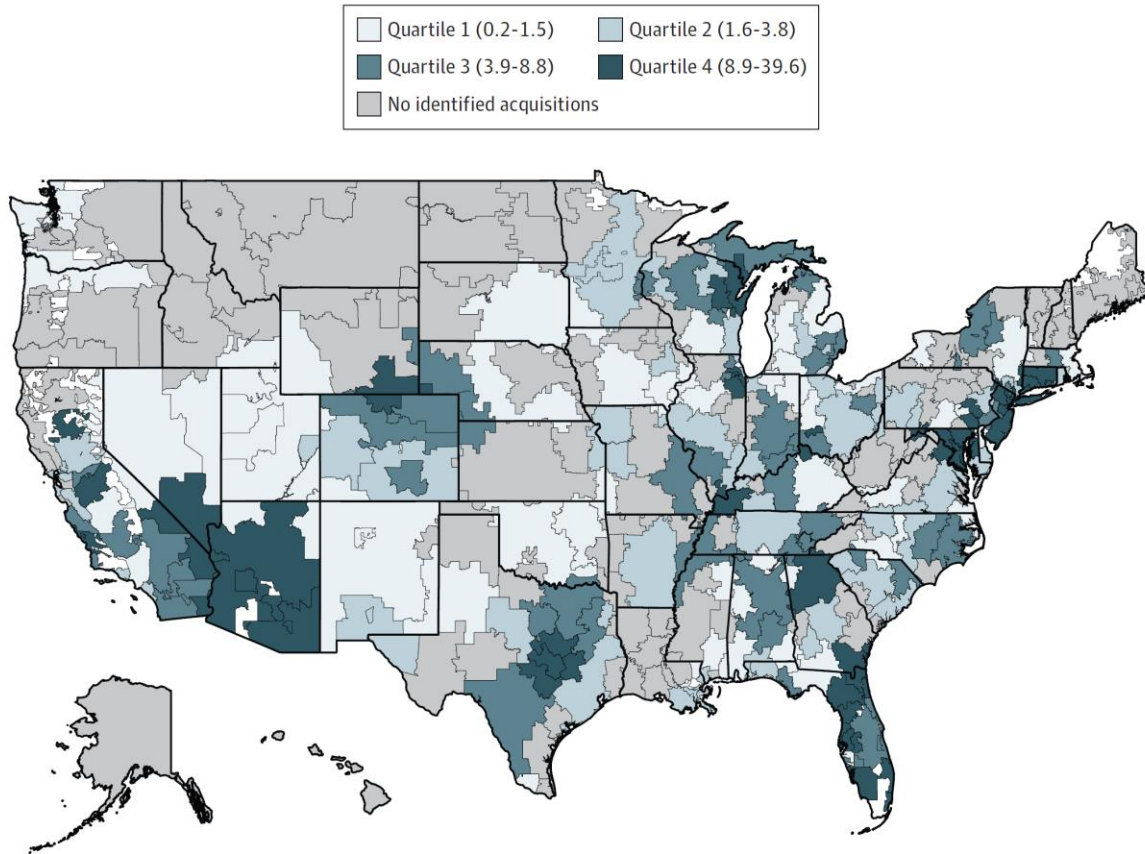
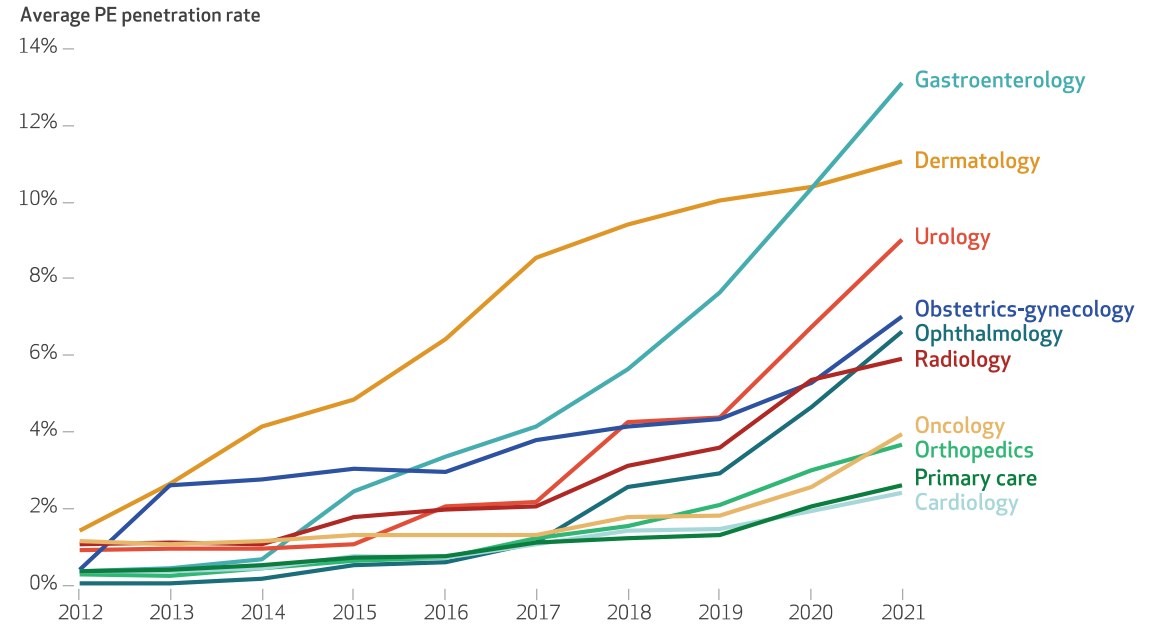


EXHIBIT 2

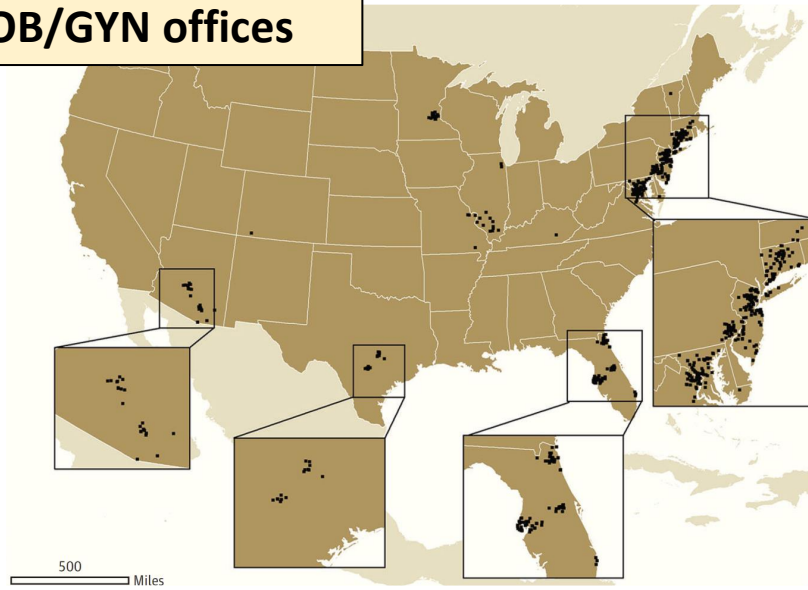
Trends in private equity (PE) penetration at the physician level in the US among 10 physician specialties, 2012-21



SOURCE Authors' analysis of data from the Irving Levin Associates Healthcare M&A Database, PitchBook private equity and merger and acquisition database, and OneKey Database provided by IQVIA (2020-21) and SK&A Office Based Physicians Database provided by IMS Health (now IQVIA) (2012-19). The PitchBook data presented here have not been reviewed by PitchBook analysts. The PitchBook database is dynamic; data for this figure are as of June 15, 2022. **NOTE** Average PE penetration rates at the physician level in each year by specialty were calculated by weighting each Metropolitan Statistical Area (MSA)-level market share by the number of full-time-equivalent physicians in that MSA by specialty, equivalent to the US penetration rate.

**From 816 practices in 2012 to 5,779 practices in 2021 across 307 Metropolitan Statistical Areas (MSAs)
1/3 of MSAs: single PE firm has >30% market share**

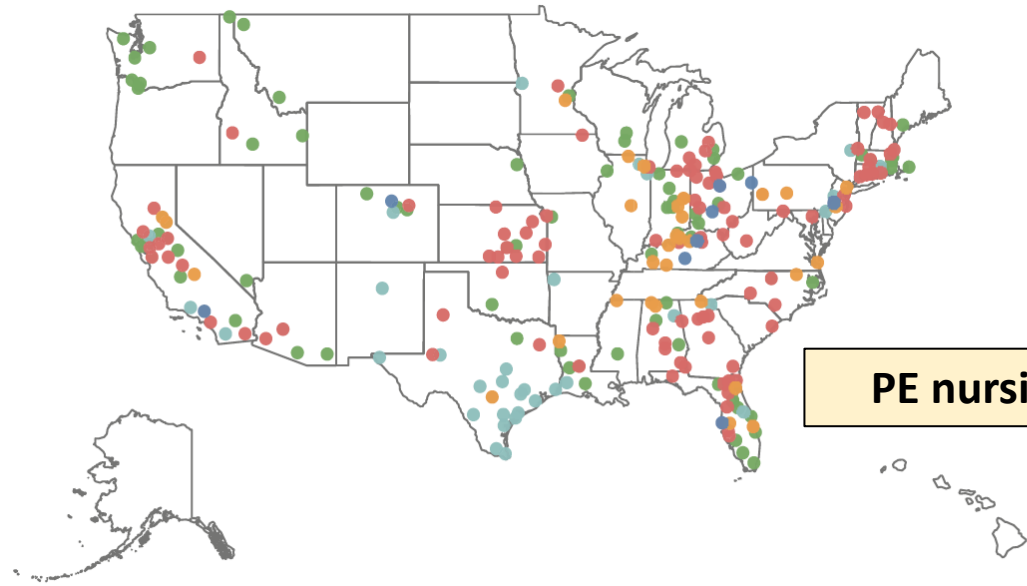
PE OB/GYN offices



Bruch JD, Borsa A, Song Z, Richardson SS. JAMA Intern Med (2020)

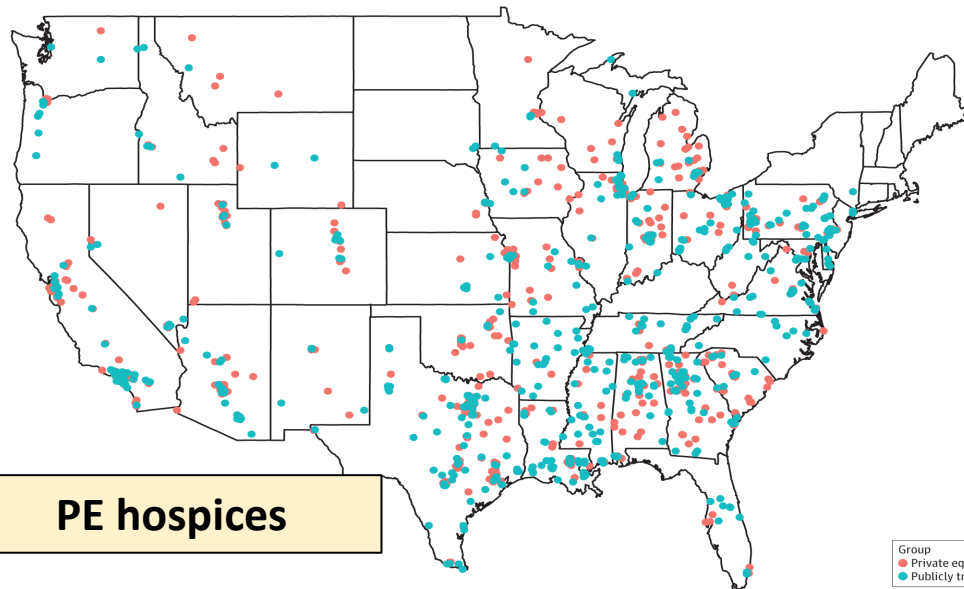
Acquisition year

- 2013
- 2014
- 2015
- 2016
- 2017



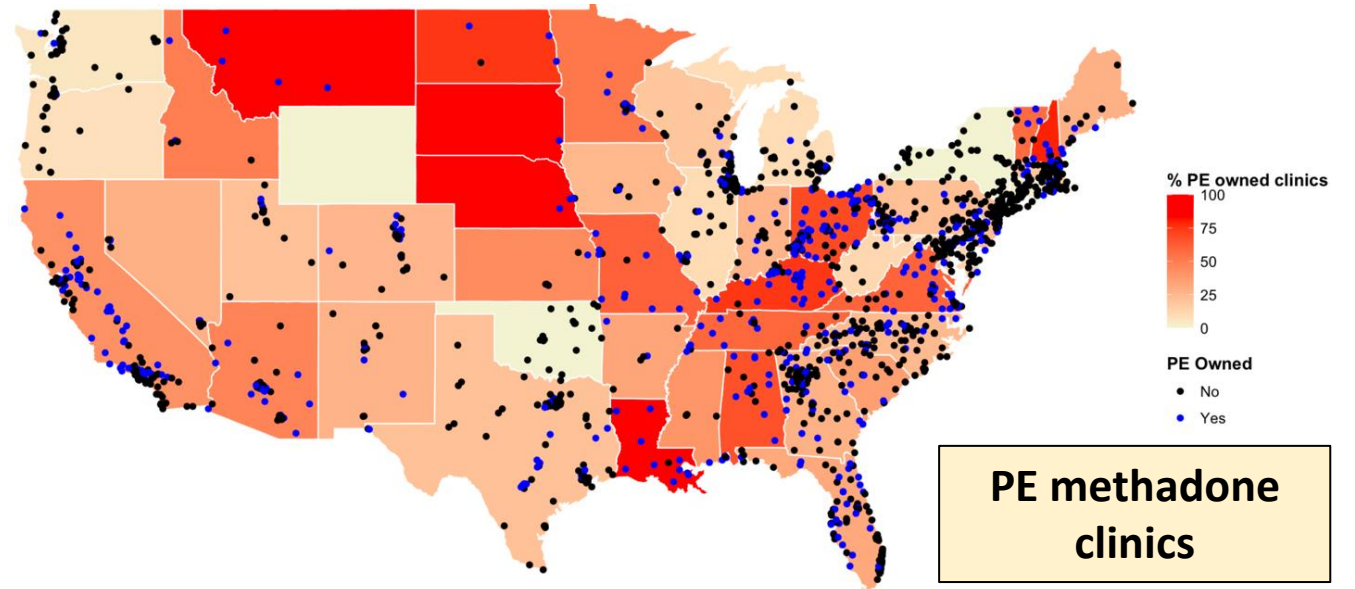
PE nursing homes

Braun R, Jung HY, Casalino L, Myslinksi L, Unruh M. JAMA Health Forum (2021)



PE hospices

Braun RT, Unruh MA, Stevenson DG, et al. JAMA Network Open (2023)



PE methadone clinics

Zhu DT, Song Z, Kannan S, Cai C, Bajaj SS, Gondi S. Under Review. (2024)

Acquisitions of Hospitals → ↑ Income, Charges, Case Mix, Commercial %

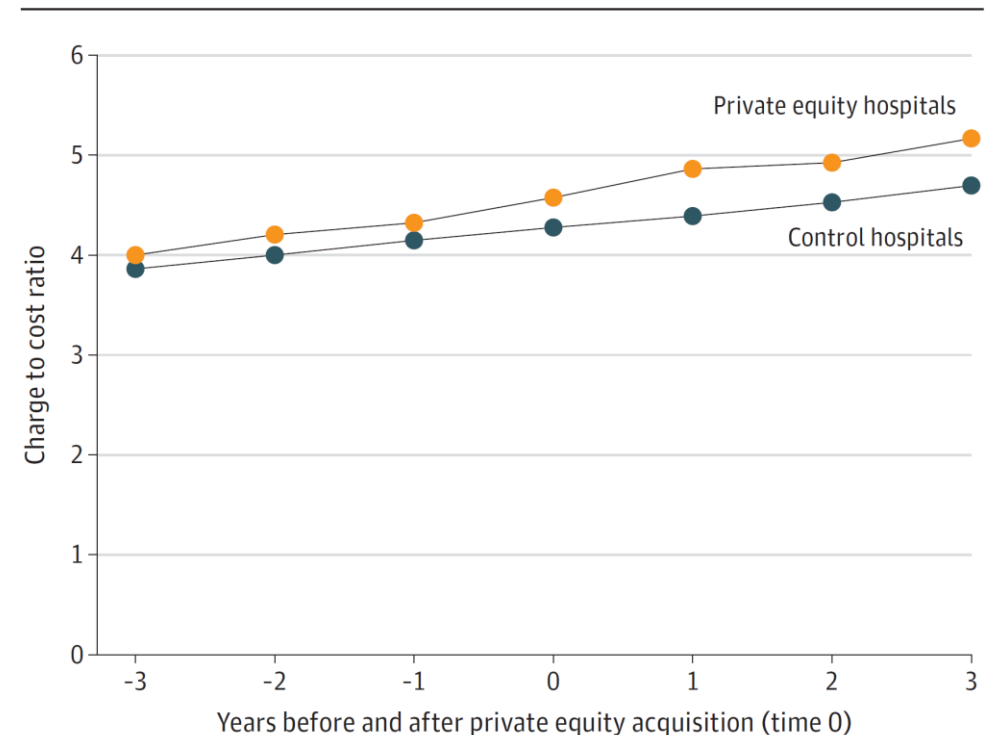
JAMA Internal Medicine | [Original Investigation](#)

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

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



Acquisitions of Hospitals → ↑ Income, Charges, Case Mix, Commercial %

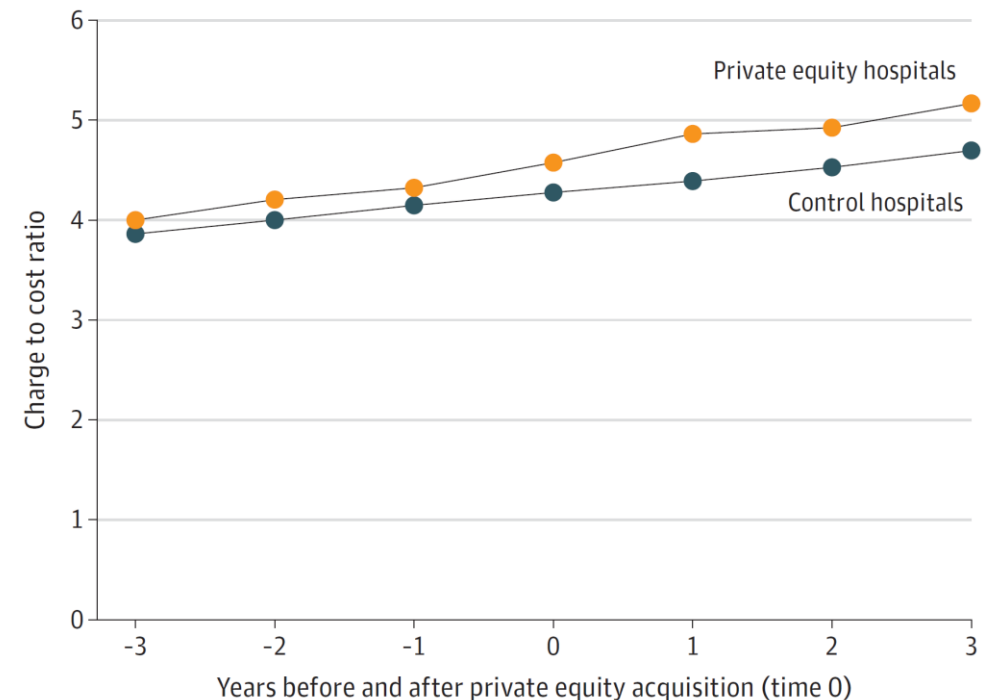
JAMA Internal Medicine | [Original Investigation](#)

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

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



Hospital-Acquired Conditions (Adverse Events)

Hospital Acquired Condition	Eligible Hospitalizations
Foreign body retained after surgery	All
Air Embolism	All
Blood Incompatibility	All
Pressure ulcers	All
Falls	All
Catheter-associated urinary tract infection (CAUTI)	All
Central line-assoc. bloodstream infection (CLABSI)	All
Surgical site infection (SSI) for CABG, Orthopedic Surgeries, and Bariatric Surgeries	Hospitalizations with performed CABG, Orthopedic Surgeries, or Bariatric Surgeries
Poor glycemic control	All
Deep vein thrombosis/pulmonary embolism (DVT/PE)	Hospitalizations with performed Hip/Knee Replacements

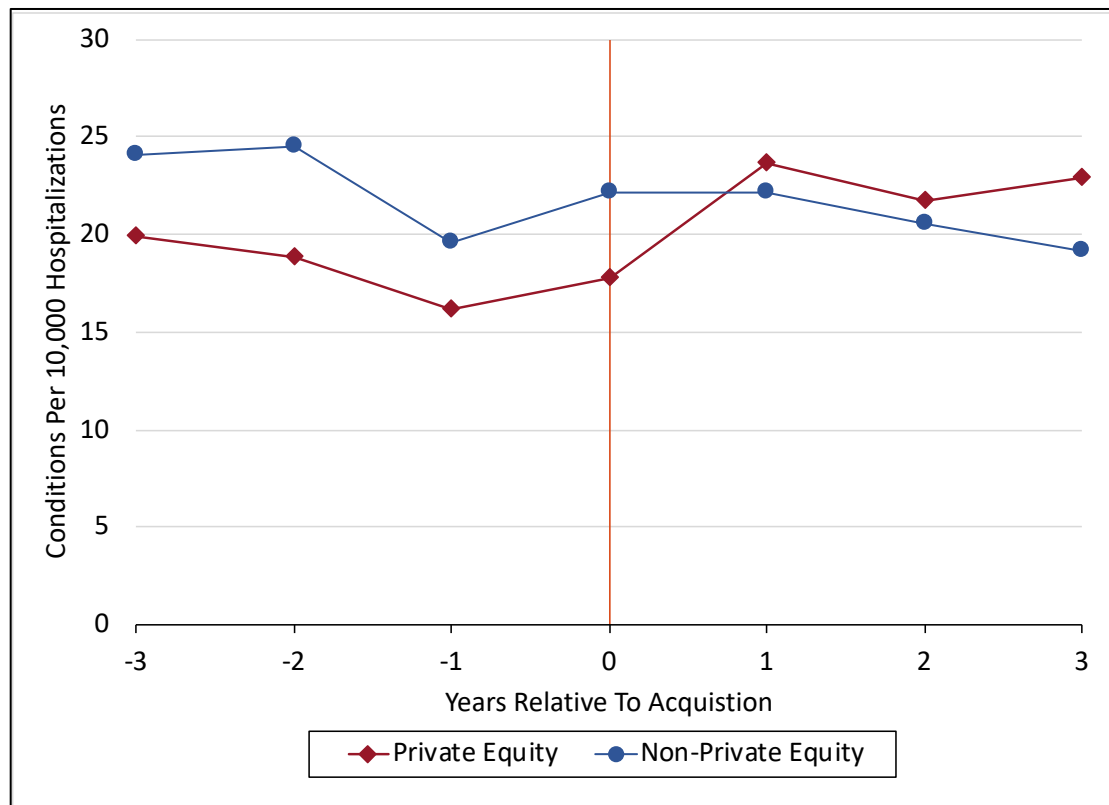
Acquisitions of Hospitals → ↑ Hospital-Acquired Complications

JAMA | Original Investigation

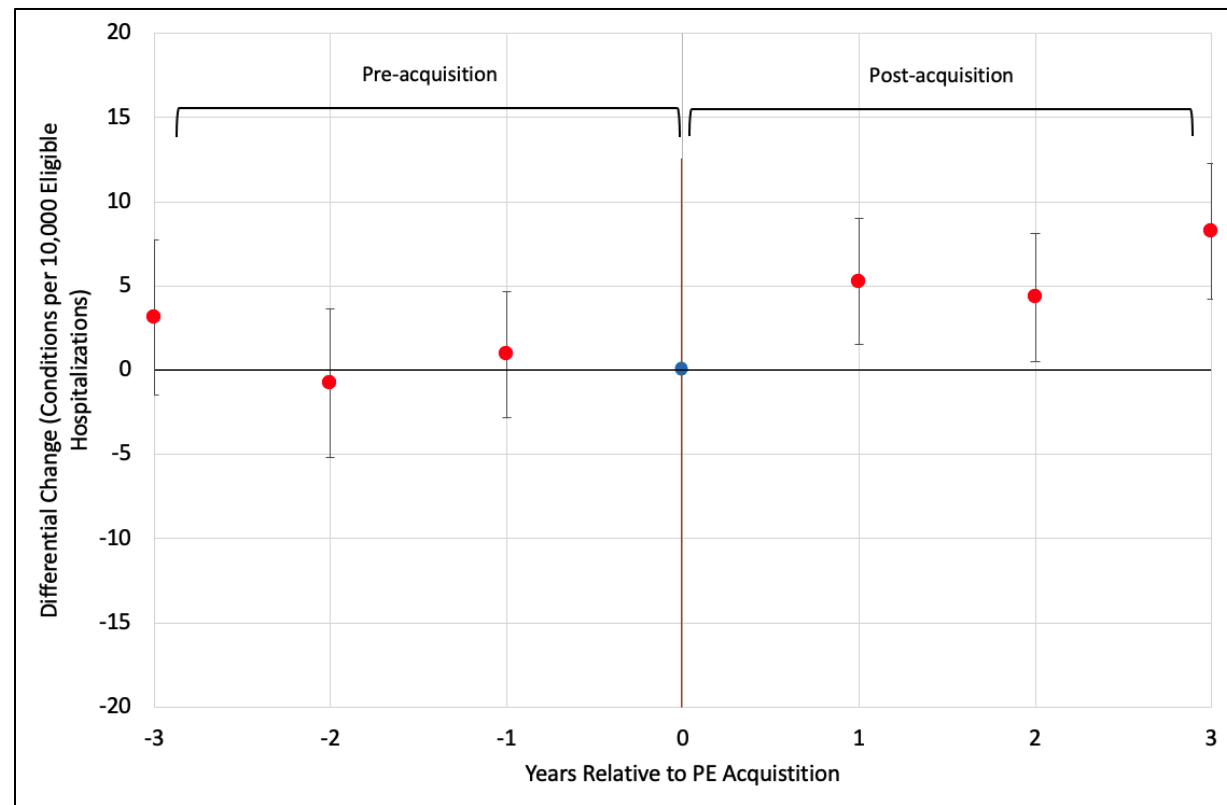
Changes in Hospital Adverse Events and Patient Outcomes Associated With Private Equity Acquisition

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

Unadjusted Levels

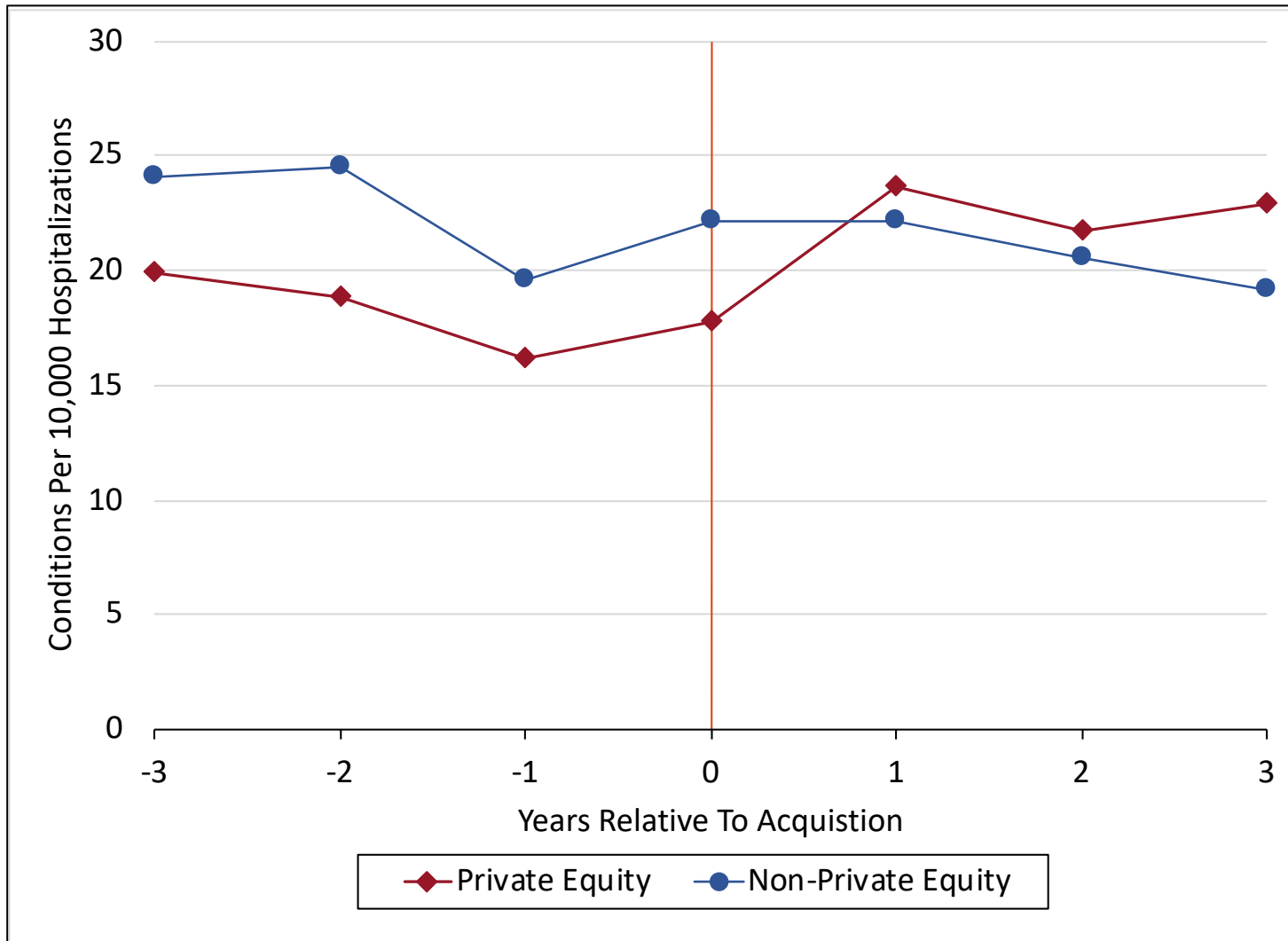


Adjusted Estimates (Differential Change)



Acquisitions of Hospitals → ↑ Hospital-Acquired Complications

CMS Hospital-Acquired Conditions (HACs) – Composite

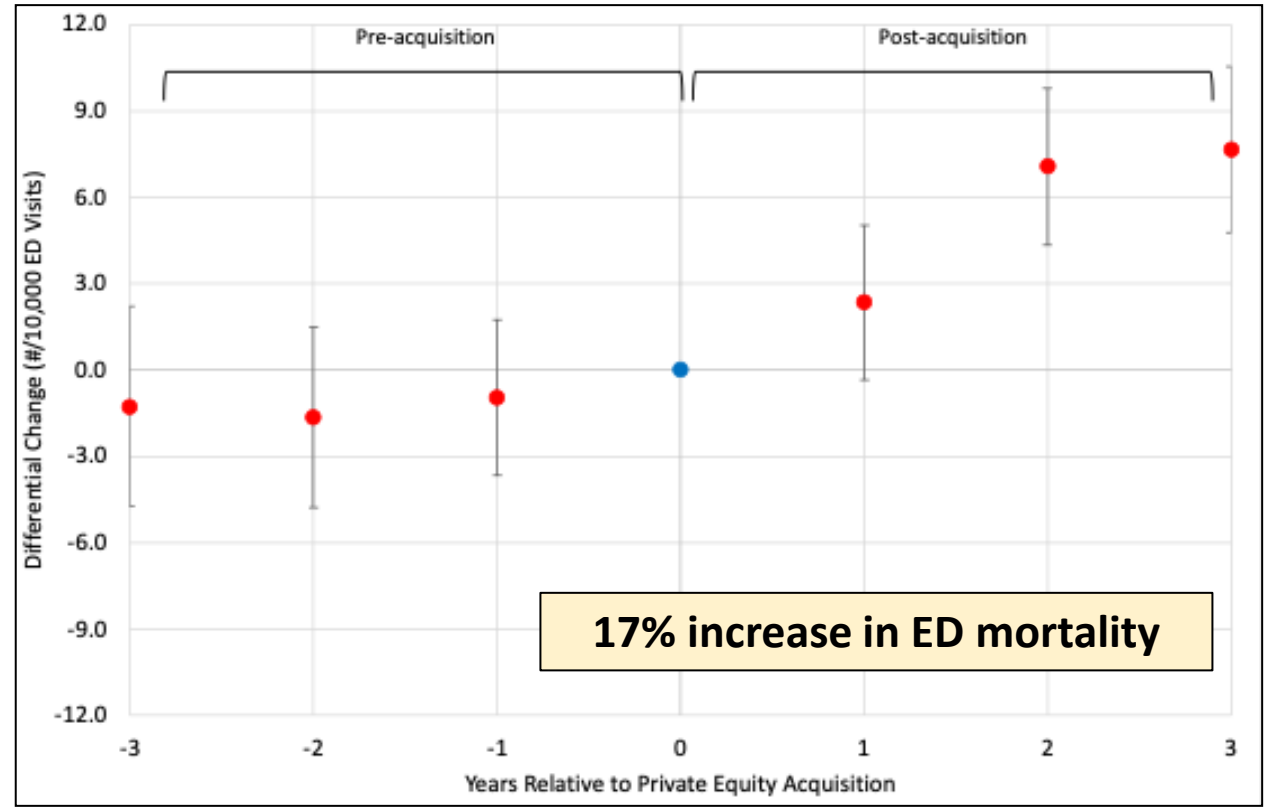
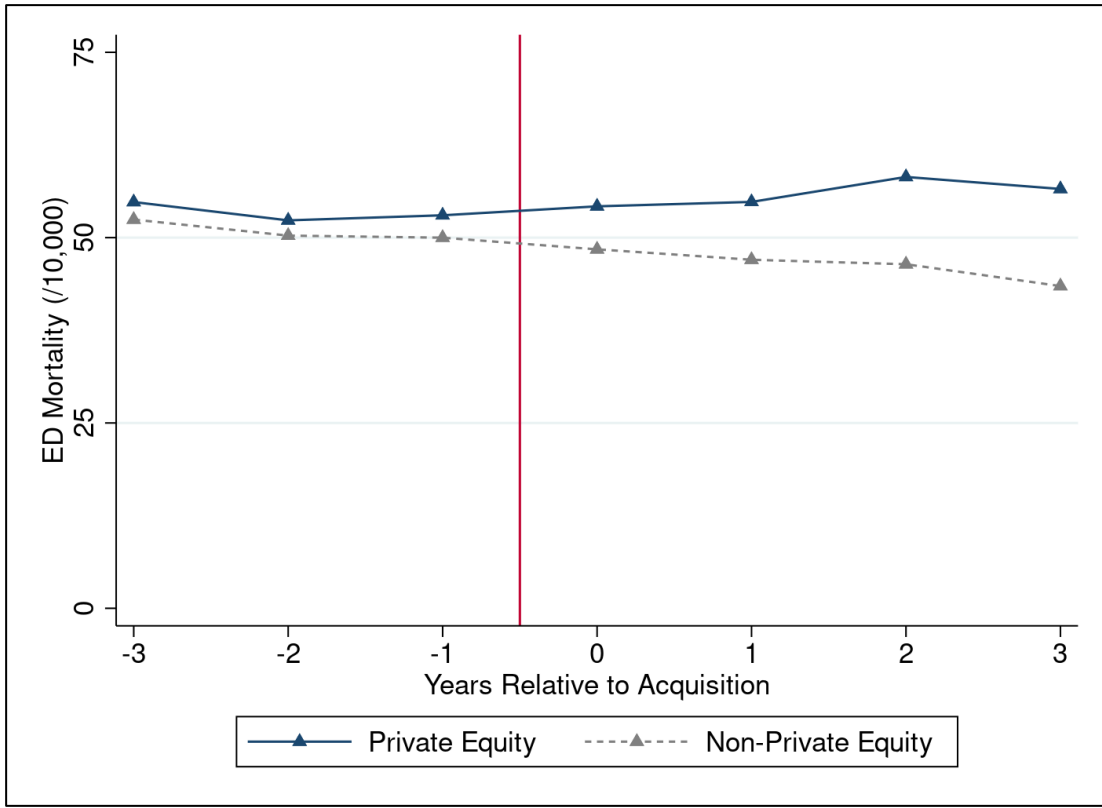


Relative to control, PE acquisitions increased:

Composite HACs	25%
Falls	27%
Central line infections	38%
(Despite 16% fewer central lines)	

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

Digging Deeper → EDs of Private Equity Hospitals

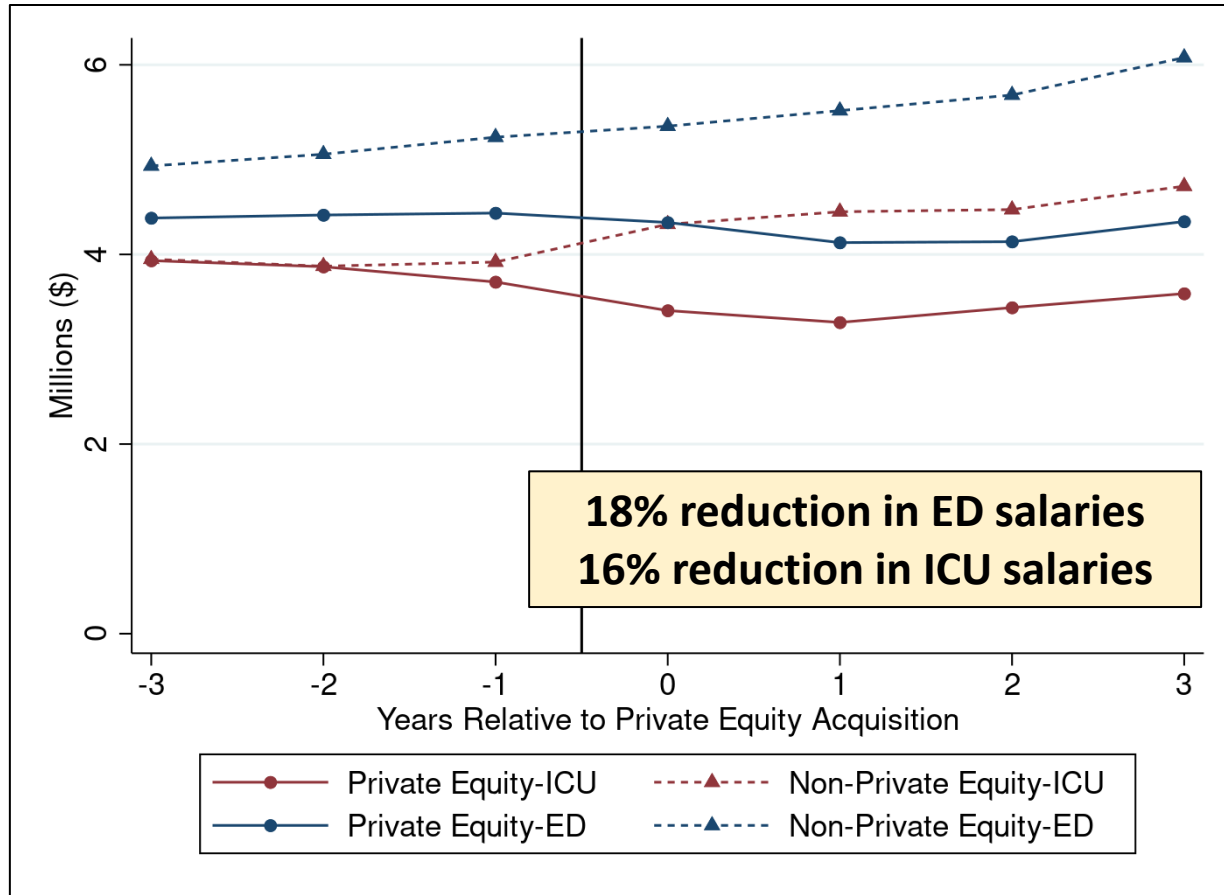


17% increase in ED mortality

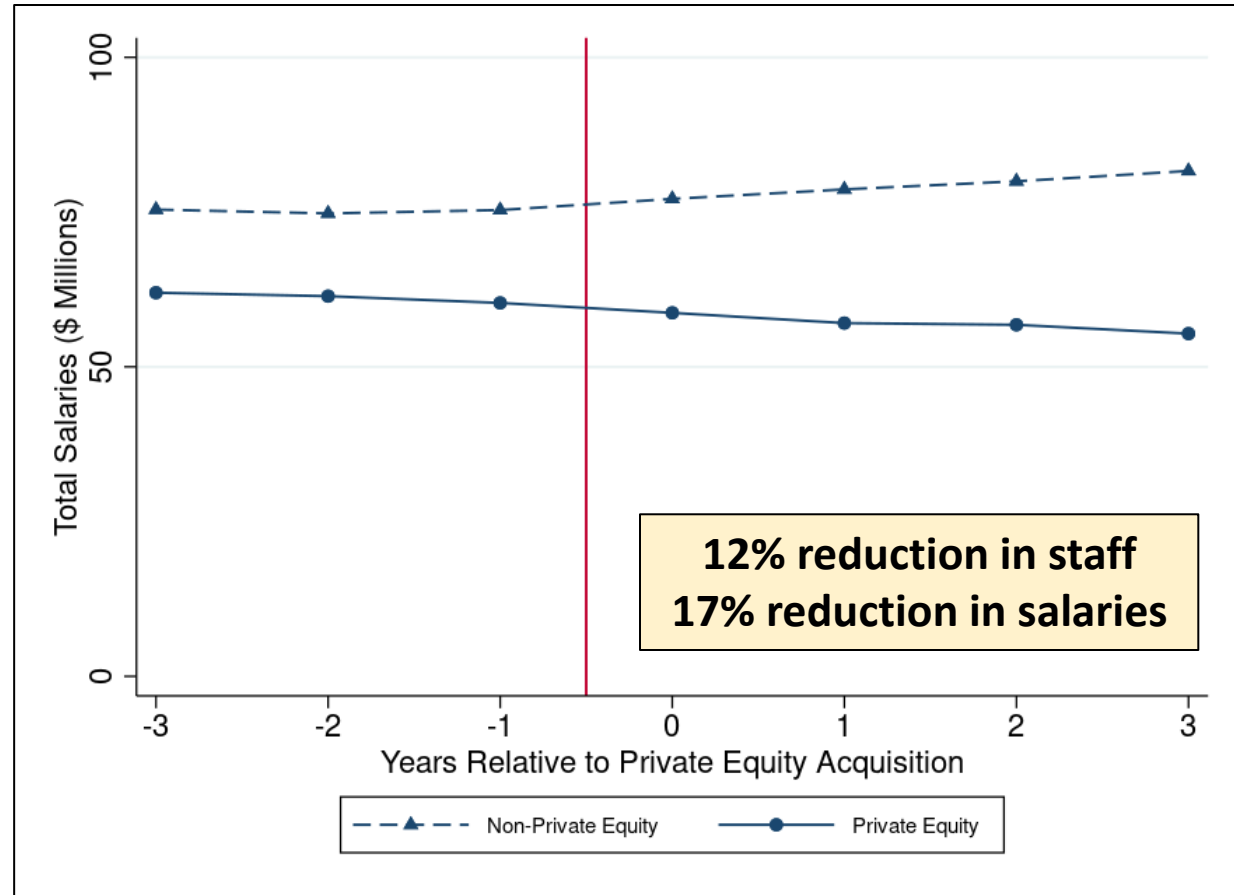
20% increase in transfers

Acquisitions of Hospitals → Changes in Hospital Expenses

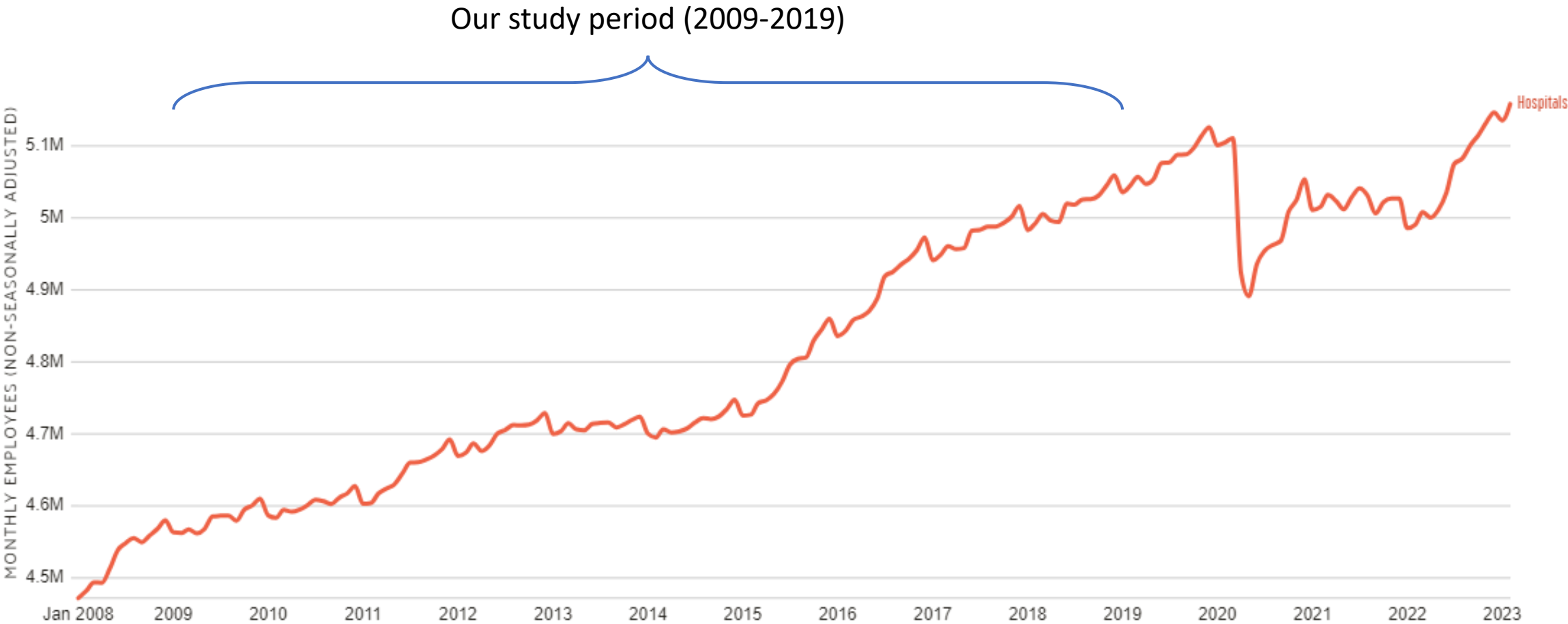
ED and ICU Expenses



Total Hospital Salary Expenses



National Trends in Hospital Employees

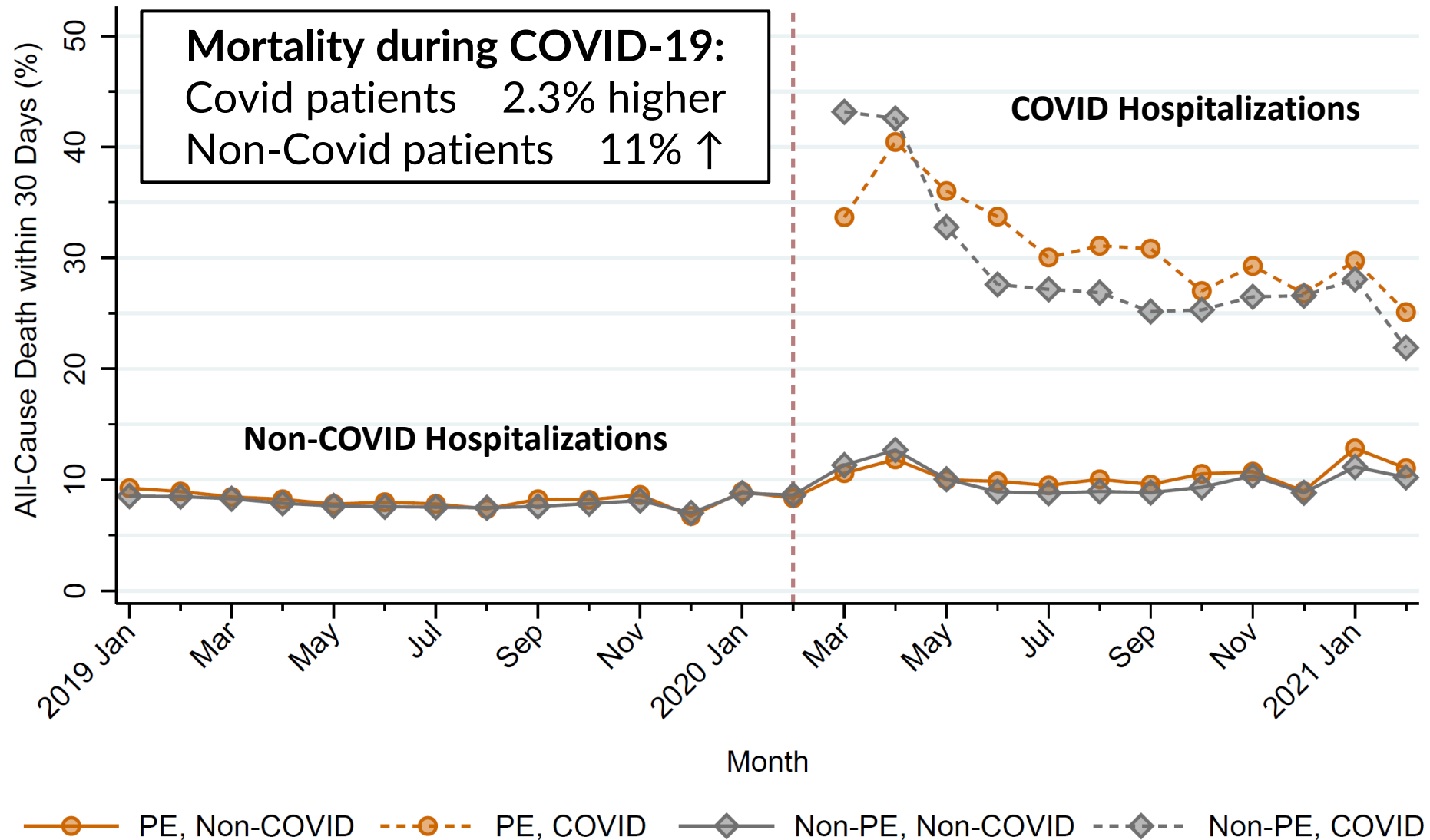


What About During COVID?



Colleagues at MGH

30-day Mortality for COVID and Non-COVID Hospitalizations



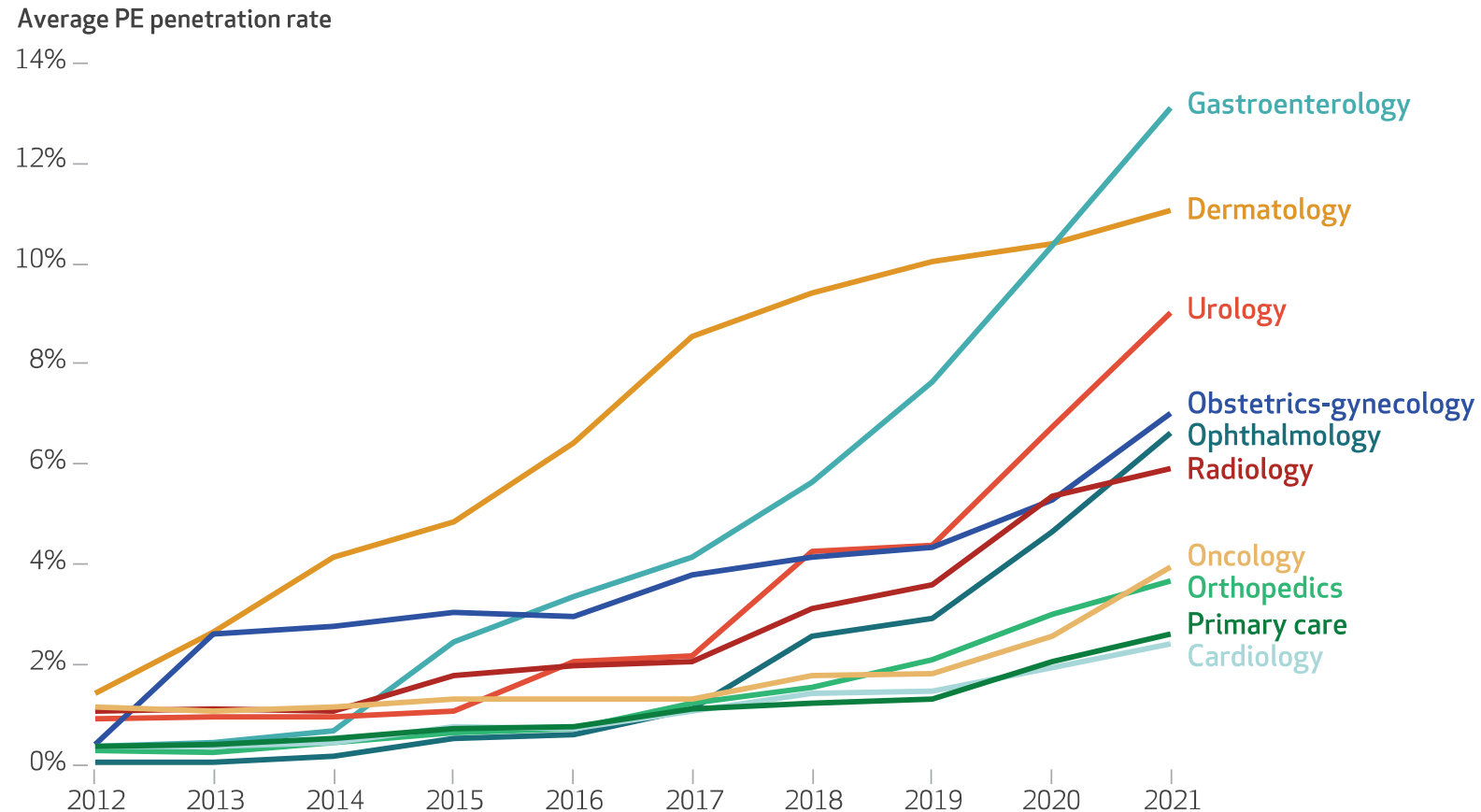
Private Equity Acquisitions of Physicians

Geographic Variation in Private Equity Penetration Across Select Office-Based Physician Specialties in the US

Yashaswini Singh, MPA; Jane M. Zhu, MD, MPP, MSHP; Daniel Polsky, PhD, MPP; Zirui Song, MD, PhD

JAMA
Health Forum (2022)

Specialty	Count of physicians identified in PE-acquired practices	Count of physicians in office-based settings	Estimated PE penetration (%)
Gastroenterology	845	6,147	13.7
Urology	492	4,758	10.3
Dermatology	851	8,565	9.9
Women's Health	1,352	15,360	8.8
Ophthalmology	741	11,398	6.5
Orthopedics	460	15,588	3.0
Total	4,738	61,752	7.7

EXHIBIT 2**Trends in private equity (PE) penetration at the physician level in the US among 10 physician specialties, 2012-21**

SOURCE Authors' analysis of data from the Irving Levin Associates Healthcare M&A Database, PitchBook private equity and merger and acquisition database, and OneKey Database provided by IQVIA (2020-21) and SK&A Office Based Physicians Database provided by IMS Health (now IQVIA) (2012-19). The PitchBook data presented here have not been reviewed by PitchBook analysts. The PitchBook database is dynamic; data for this figure are as of June 15, 2022. **NOTE** Average PE penetration rates at the physician level in each year by specialty were calculated by weighting each Metropolitan Statistical Area (MSA)-level market share by the number of full-time-equivalent physicians in that MSA by specialty, equivalent to the US penetration rate.

Acquisitions of MD Practices → ↑ Spending, Charges, Prices, Volume

Original Investigation

Association of Private Equity Acquisition of Physician Practices With Changes in Health Care Spending and Utilization

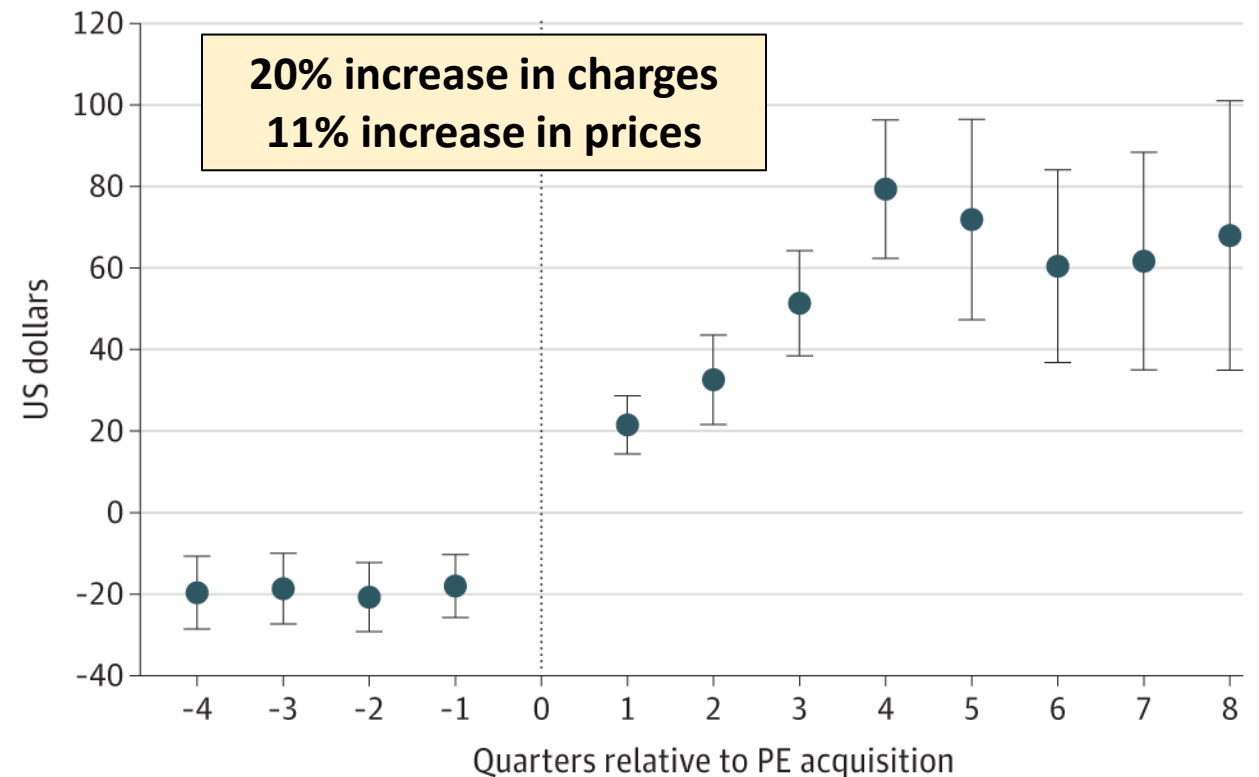
JAMA
Health Forum

(2022)

Yashaswini Singh, MPA; Zirui Song, MD, PhD; Daniel Polsky, PhD, MPP; Joseph D. Bruch, PhD; Jane M. Zhu, MD, MPP, MSHP

Table 1. Characteristics of PE- and Non-PE-Acquired Physician Practices at Baseline, 2015

Characteristic	Mean (SD)	
	PE-acquired	Non-PE-acquired ^a
Physician practices, No.	578	2874
Charge/claim, mean \$	322 (258)	332 (326)
Allowed amount/claim, mean \$	187 (136)	178 (136)
Total No.		
Unique patients	94 (182)	88 (172)
New patients	72 (136)	67 (132)
Encounters	124 (237)	118 (224)
E&M visits	75 (188)	72 (180)
Share of E&M visits >30 min		
New patients	0.26 (0.15)	0.26 (0.21)
Established patients	0.19 (0.17)	0.18 (0.22)
Patient HCC score, median	1.21 (1.05)	1.28 (1.10)



Relative to control, PE acquisitions led to:

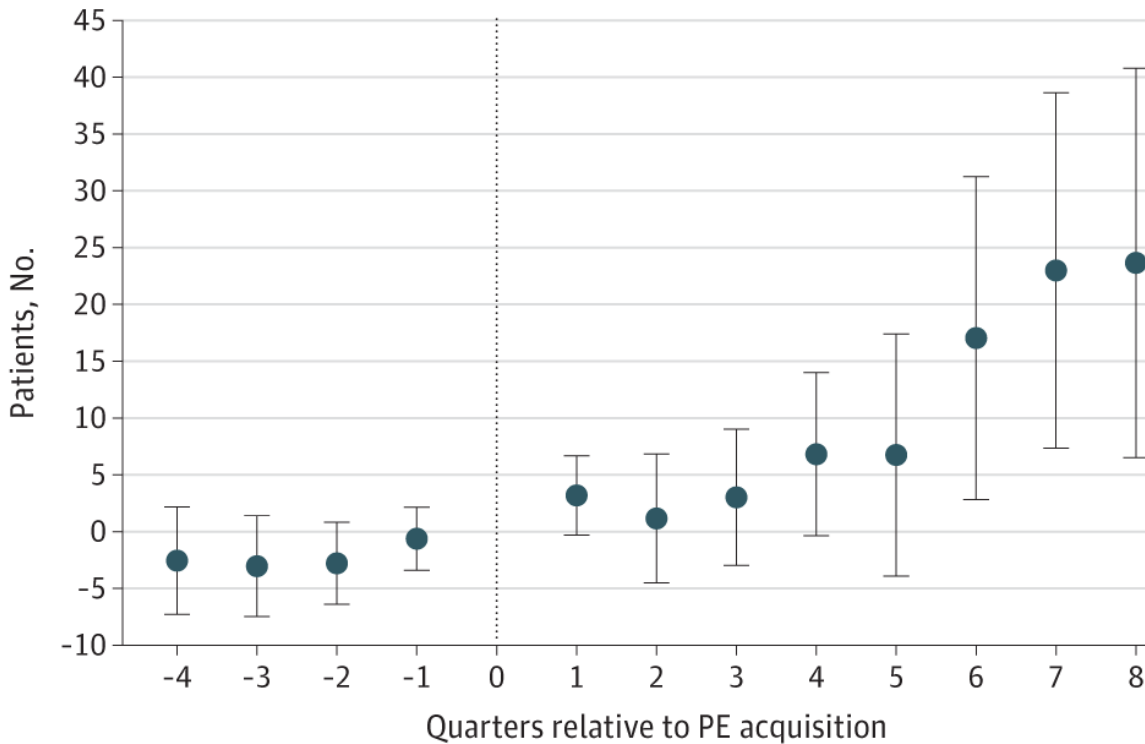
16% increase in aggregate volume

26% increase in unique patients

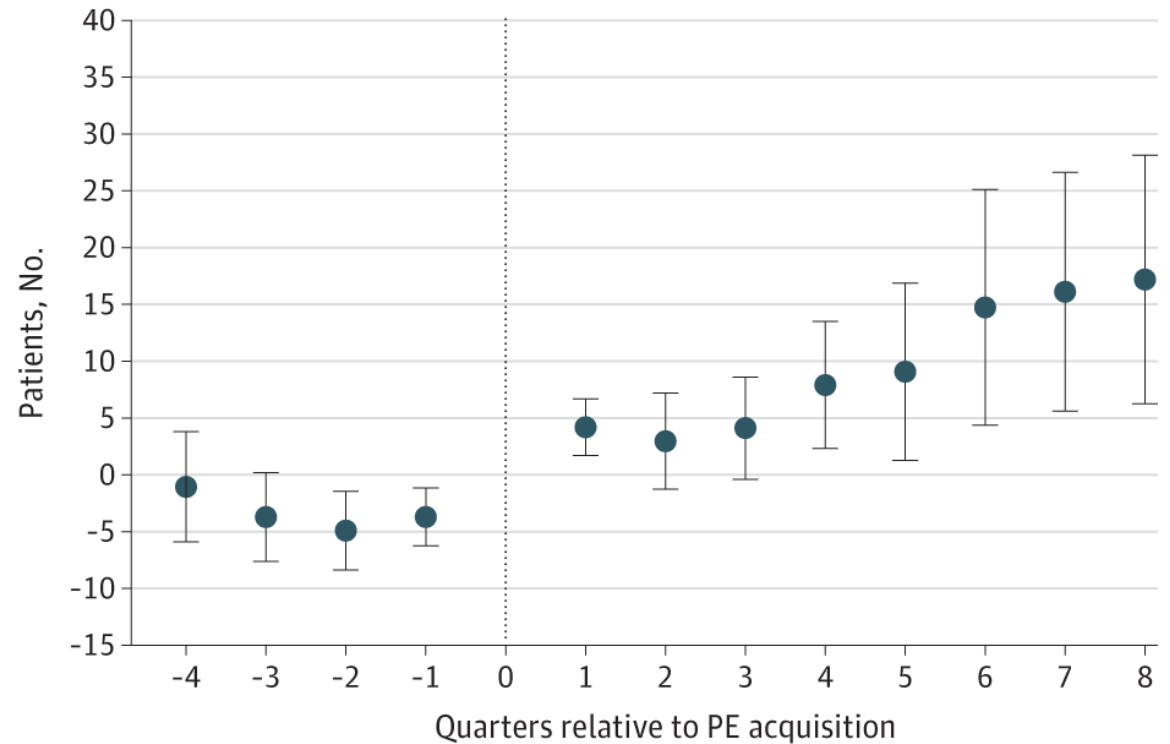
38% increase in new patient visits

9% increase in long (>30 min) visits

A Unique patients per practice

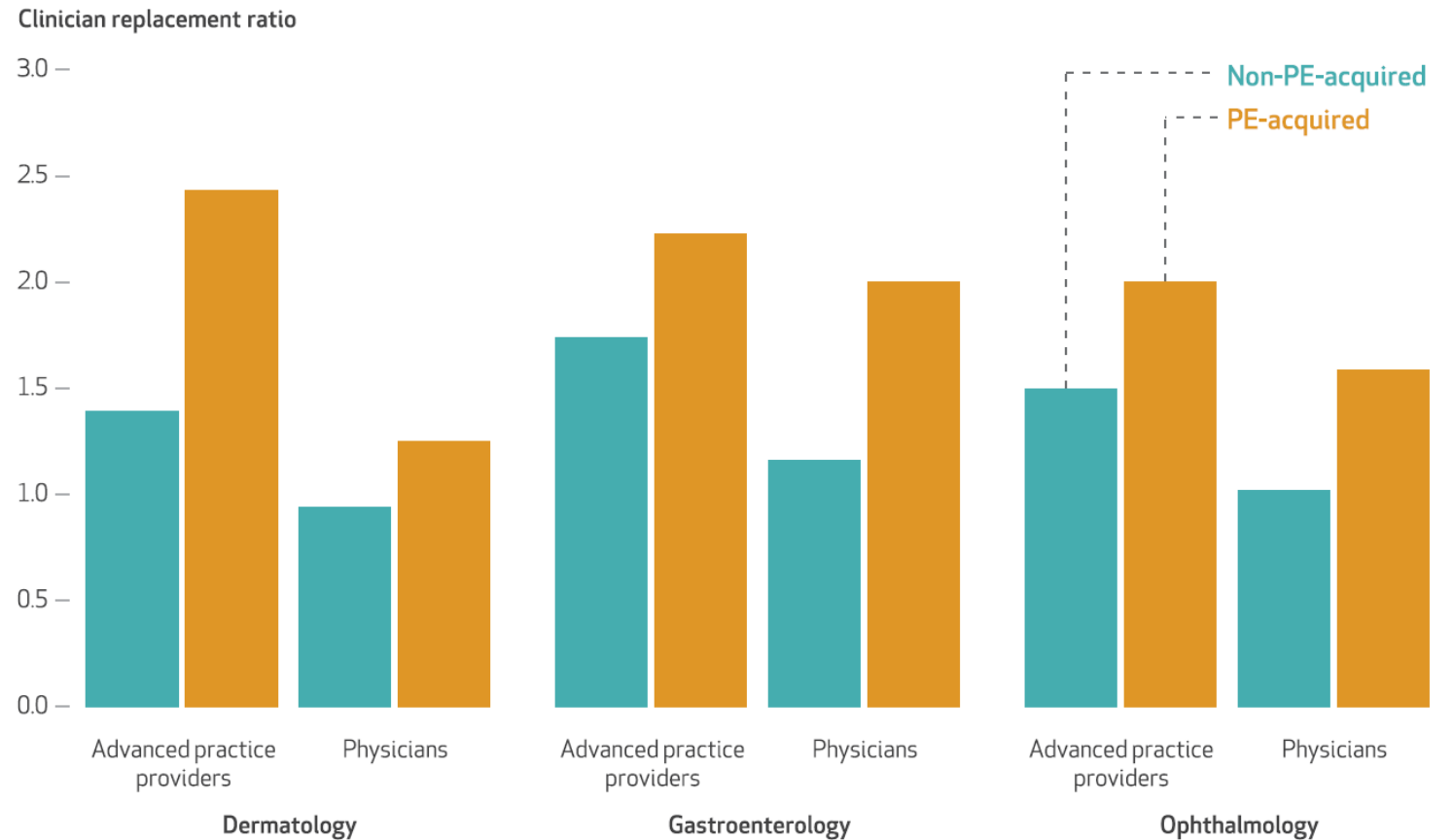


B New patients per practice



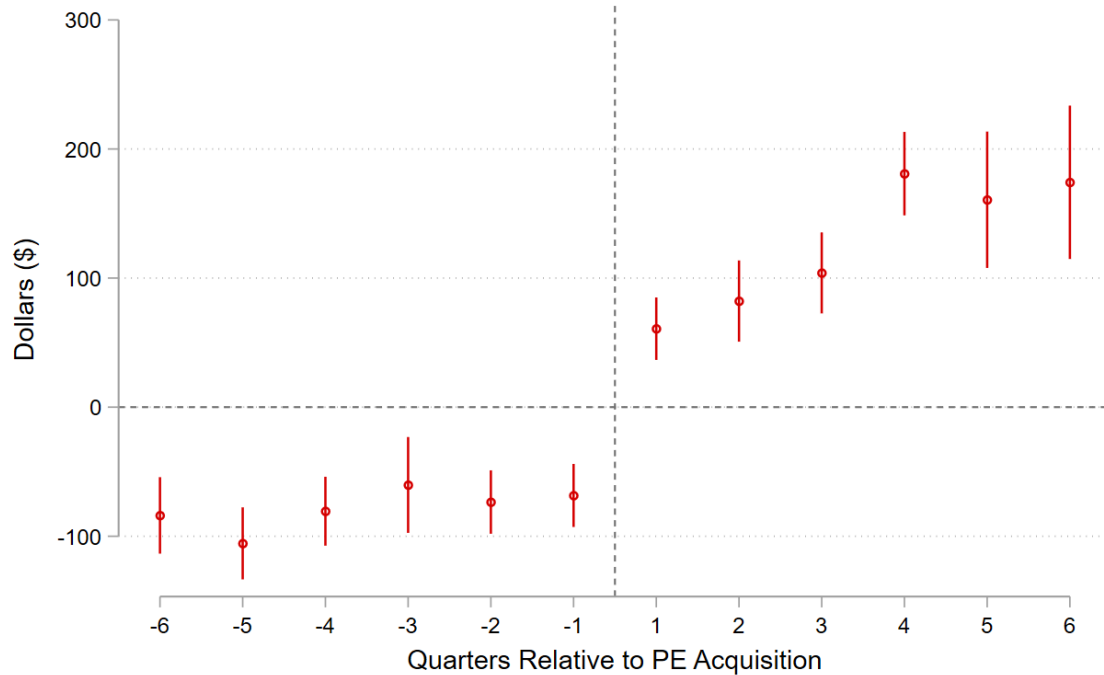
Workforce Composition In Private Equity-Acquired Versus Non-Private Equity-Acquired Physician Practices

Clinician replacement ratios for advanced practice providers and physicians in private equity (PE)-acquired and non-PE-acquired practices in the US, by specialty, 2014-19



Additional Evidence on Acquisitions of Physician Practices

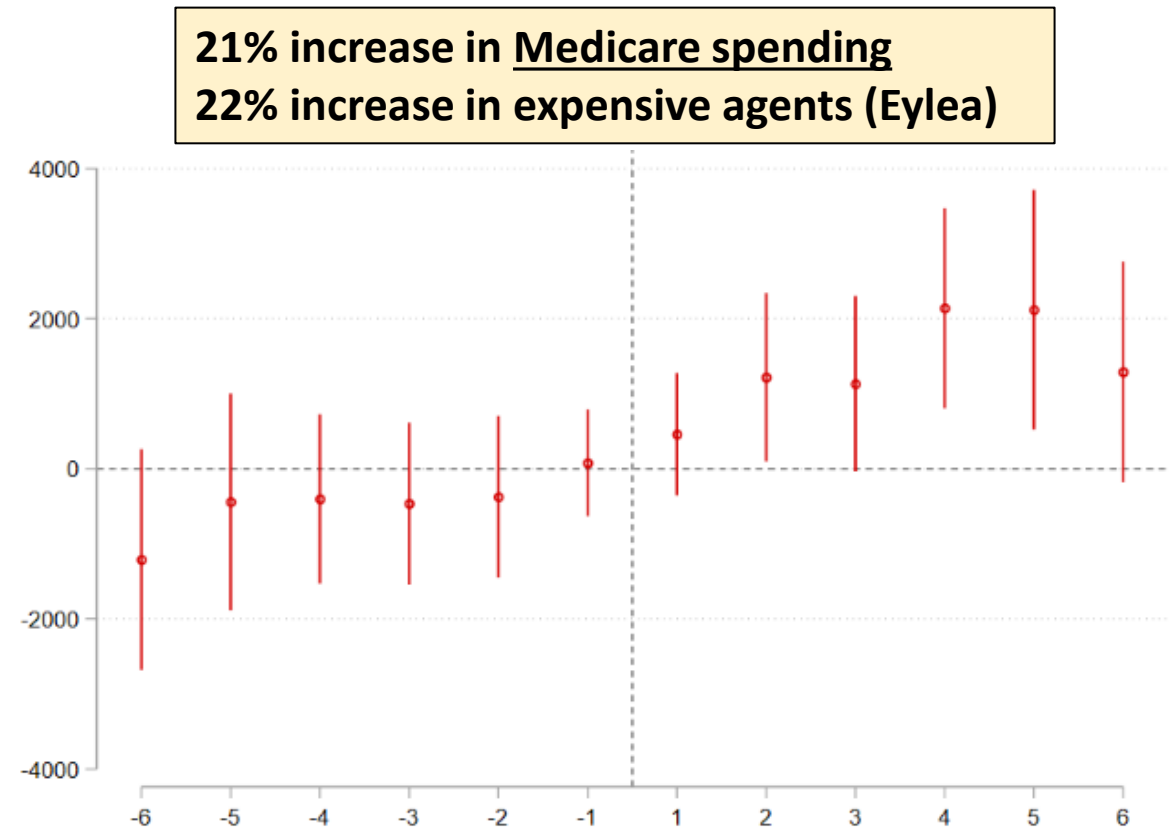
Private Equity GI vs. Health System GI



28% increase in prices
78% increase in professional fees
23% increase in patient volume

Singh Y, Song Z, Polsky D, Zhu JM. Under Revision

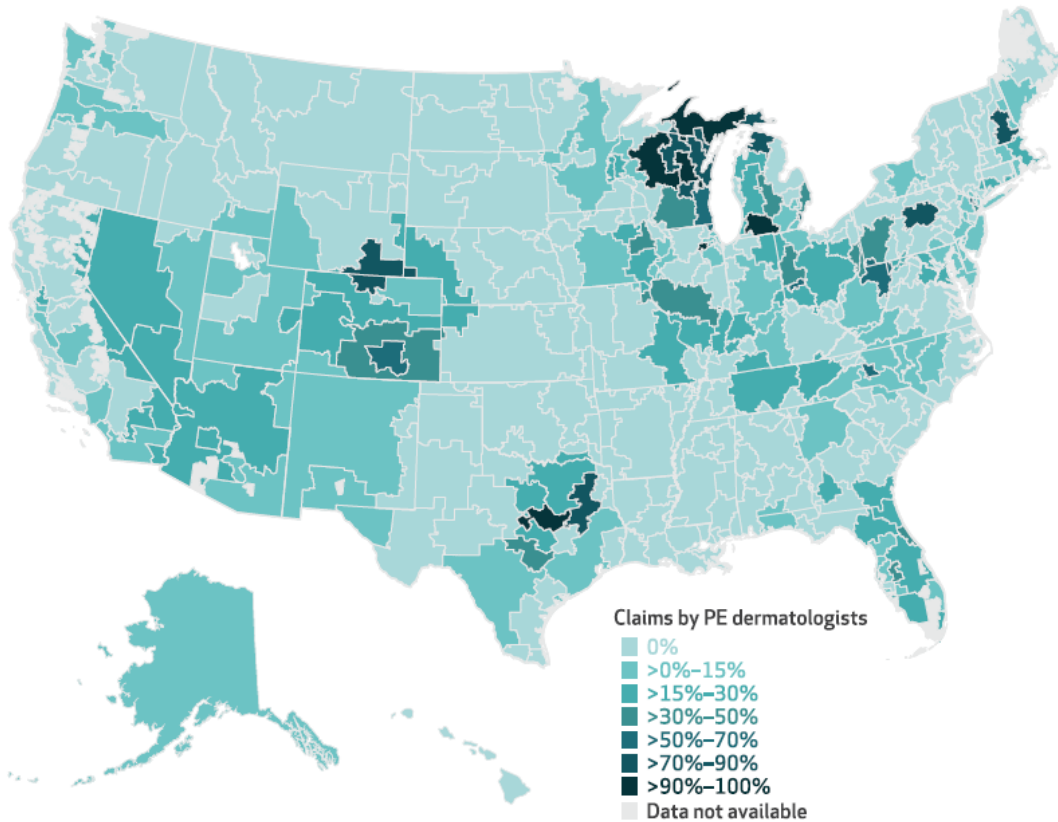
Private Equity Retina Practices vs. Control



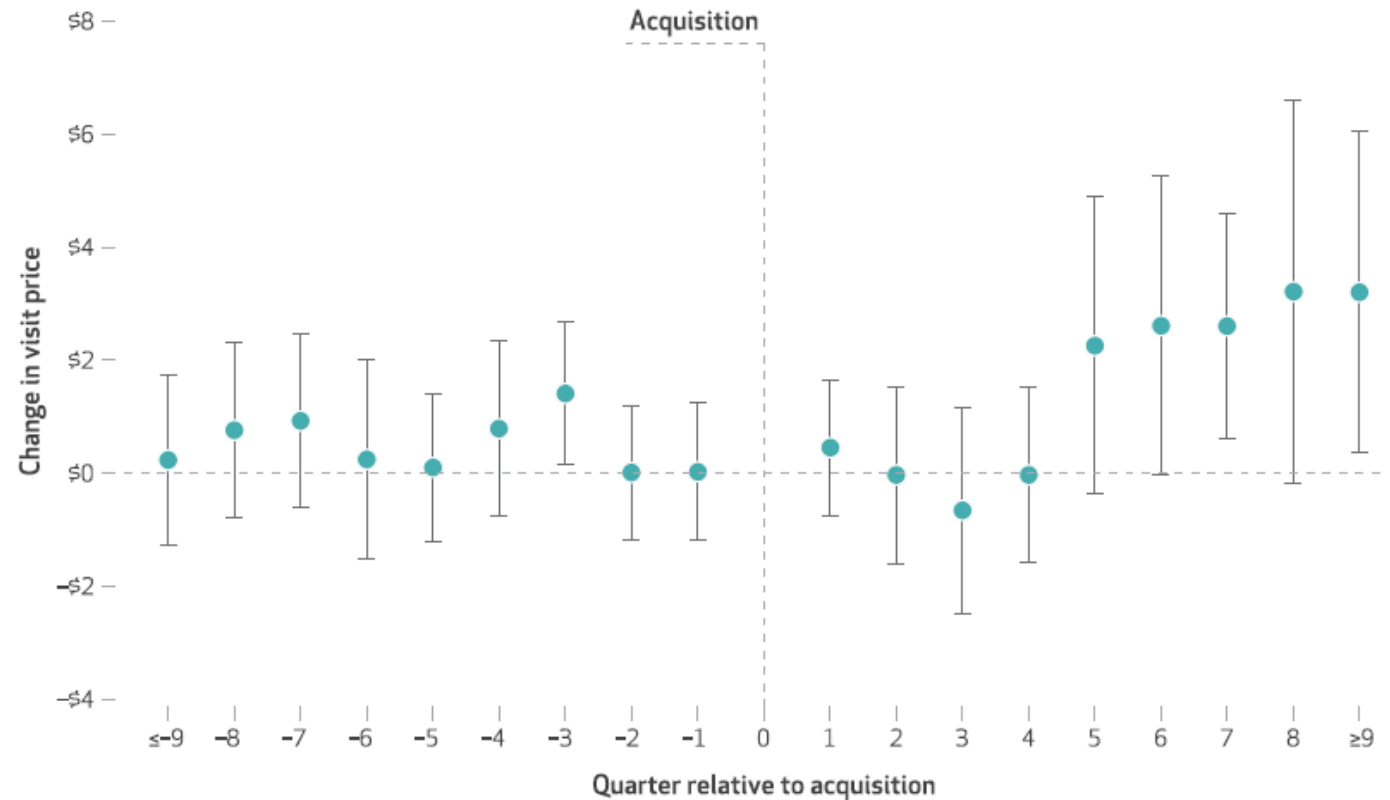
Singh Y, Aderman CM, Song Z, Polsky D, Zhu JM. Ophthalmology (2024)

Additional Evidence on Acquisitions of Physician Practices

Percent of dermatologist claims made by private equity (PE) dermatologists, by hospital referral region, 2017



Effect of private equity acquisition on the price of a routine dermatology office visit, by quarter, 2012–17



“At 1.5 years after acquisition, prices paid to private equity dermatologists for routine medical visits were 3-5 percent higher than those paid to non-private equity dermatologists. There was no significant consistent impact on dermatology spending or use of biopsies, lesion destruction, or Mohs surgery.”

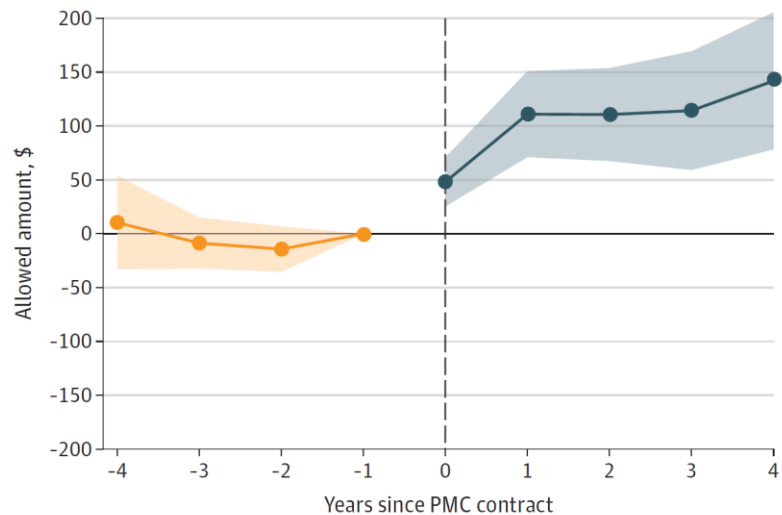
Additional Evidence on Acquisitions of Physician Practices

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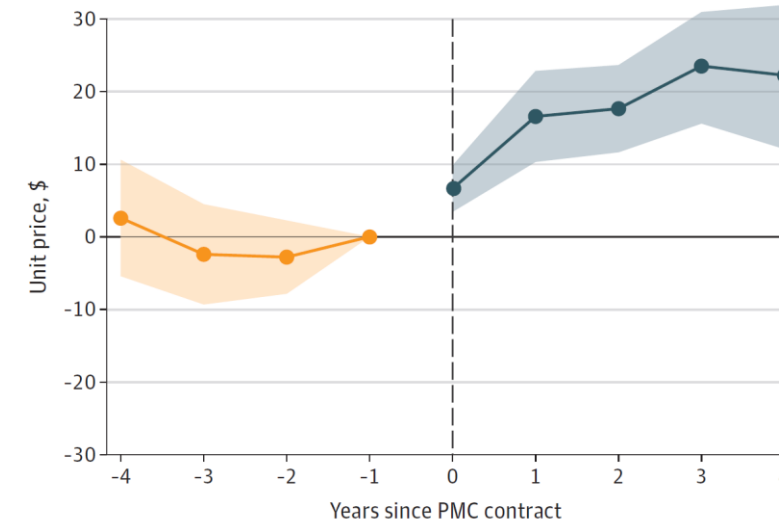
Association of Physician Management Companies and Private Equity Investment With Commercial Health Care Prices Paid to Anesthesia Practitioners

Ambar La Forgia, PhD; Amelia M. Bond, PhD; Robert Tyler Braun, PhD; Leah Z. Yao, BS; Klaus Kjaer, MD, MBA; Manyao Zhang, MA; Lawrence P. Casalino, MD, PhD

A Allowed amount



B Unit price



C Probability that practitioner is OON

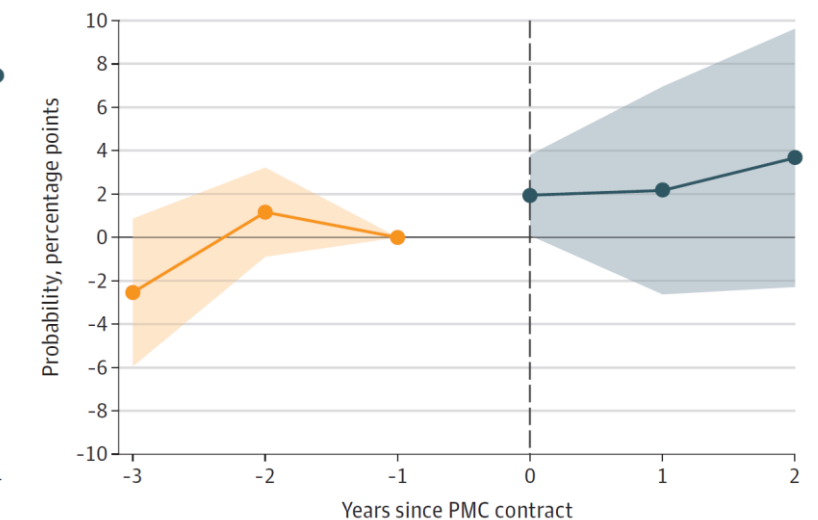
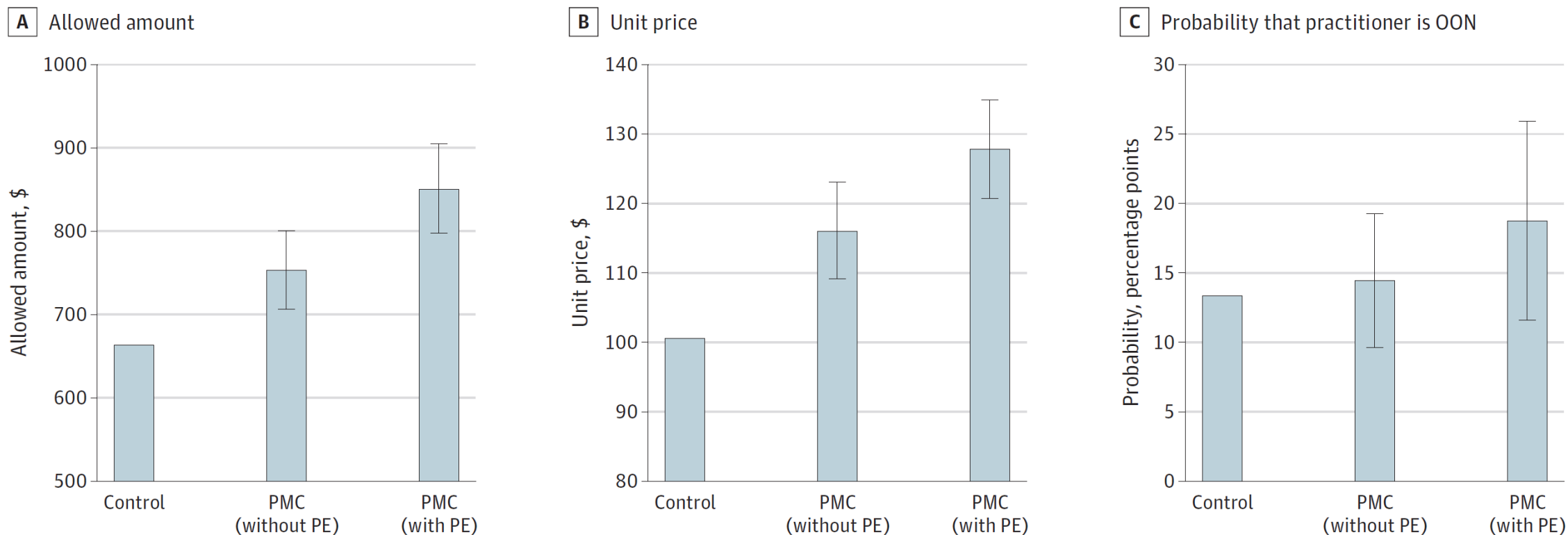


Figure 2. Adjusted Differential Changes in Outcomes Associated With Physician Management Company (PMC) Contract With and Without Private Equity (PE) Investment

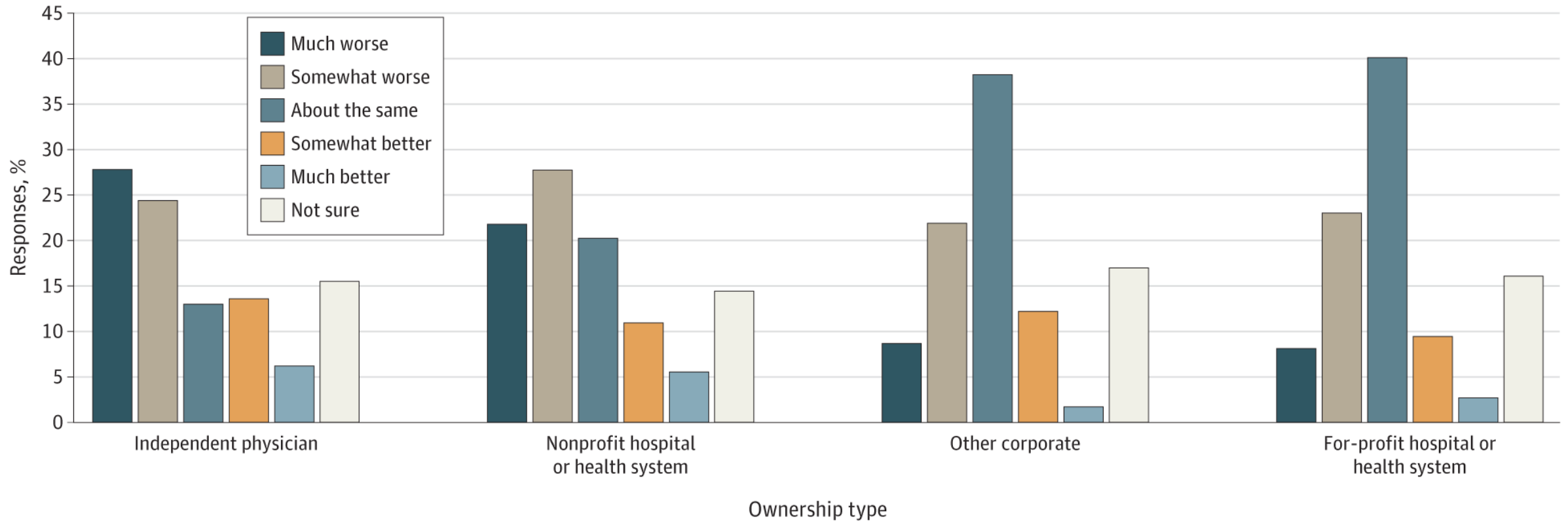


Adjusted difference-in-differences estimates from the specification interacting the post-PMC contract indicator with an indicator for whether the PMC received PE investment, relative to the regression-adjusted mean value of the control facilities, are shown. Therefore, the difference between the height of the PMC bars and the control bar represents the differential change in each outcome relative to control facilities, with the corresponding 95% CIs (error bars). The

regression-adjusted difference (95% CI) between PMCs with PE relative to without PE is as follows: +\$97.18 (\$35.38 to \$158.97) for allowed amounts, +\$11.71 (\$4.46 to \$18.95) for unit prices, and +4.34 percentage points (-2.11 to 10.79) for the probability that a practitioner is out-of-network (OON). See eTable 9 in the Supplement for the regression output.

Physician Perceptions of Private Equity

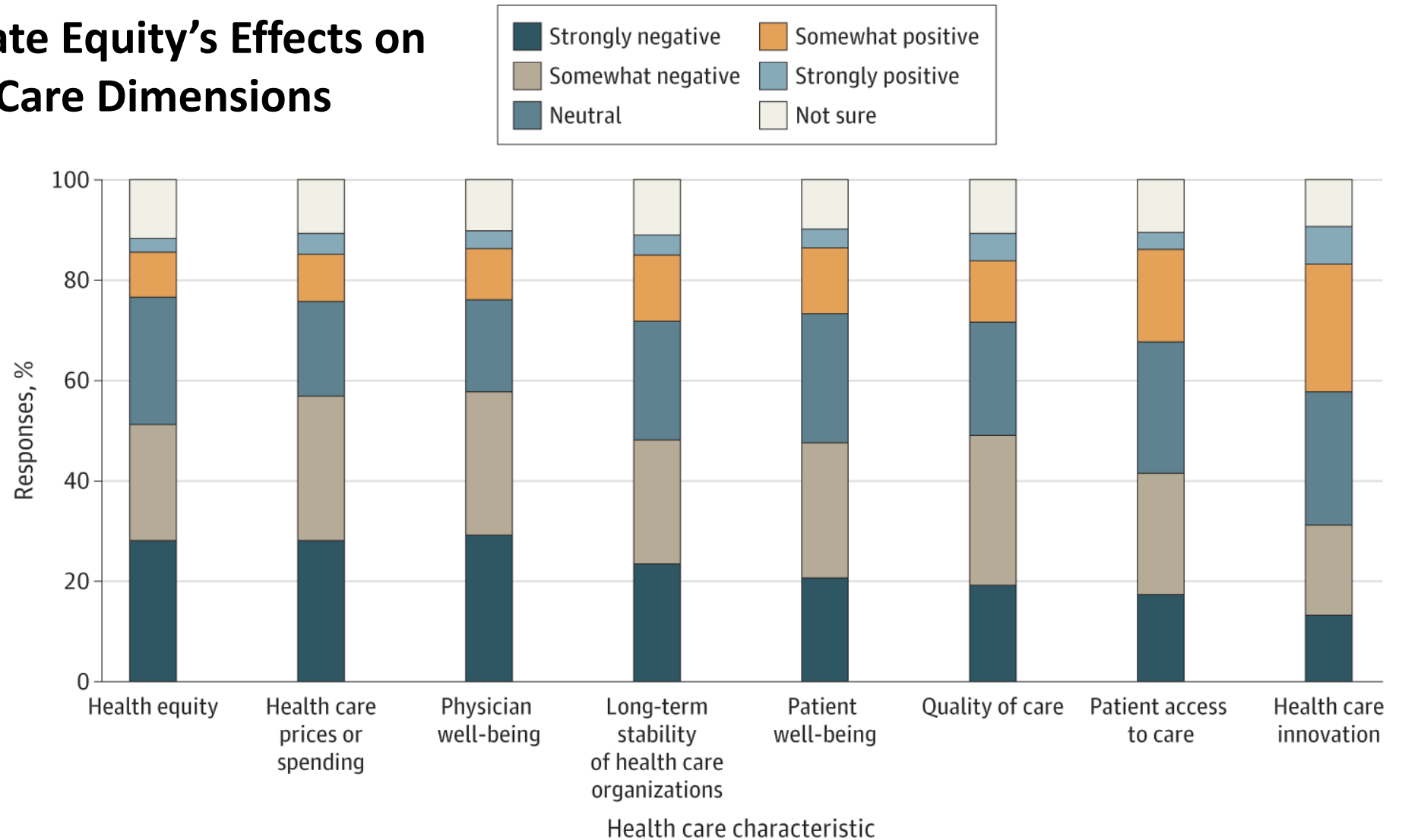
Favorability of Private Equity Ownership Compared With Other Types of Ownership



N=1397 MDs

Physician Perceptions of Private Equity

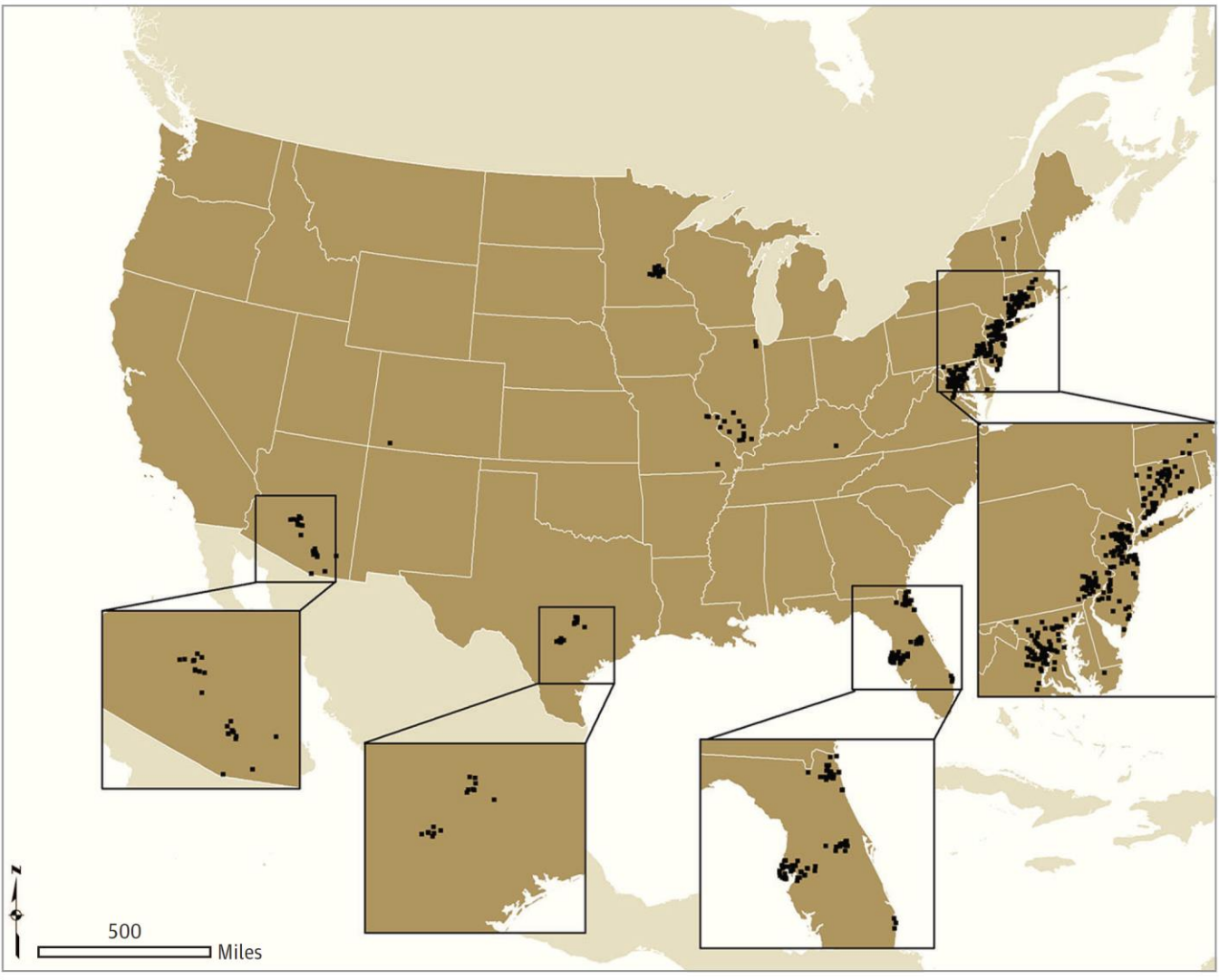
Perspectives of Private Equity's Effects on Various Health Care Dimensions



N=1397 MDs

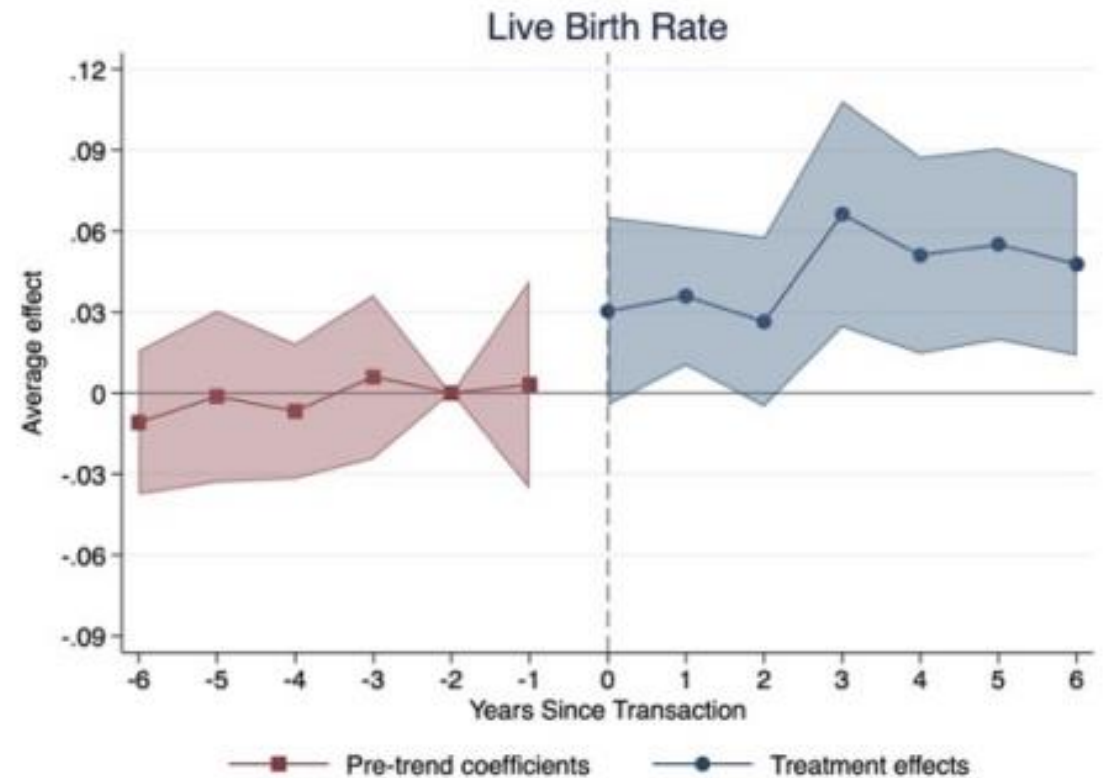
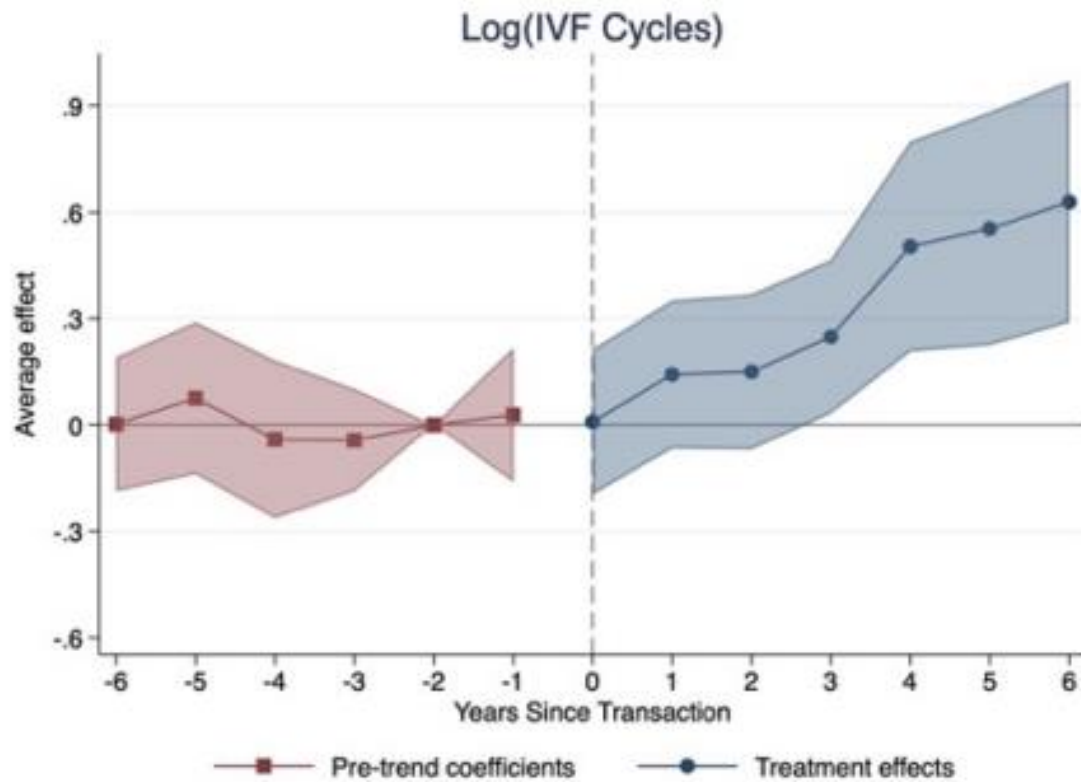
From the Beginning of Life – Women’s Health

Figure. Private Equity–Affiliated Obstetrics/Gynecology (OB/GYN) Offices in 2020



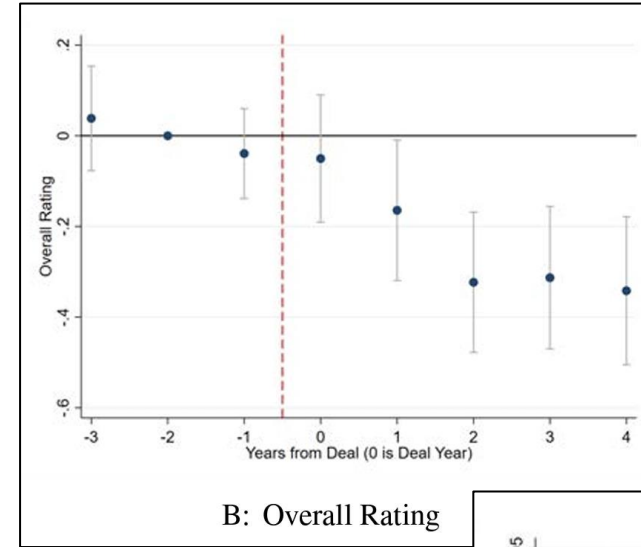
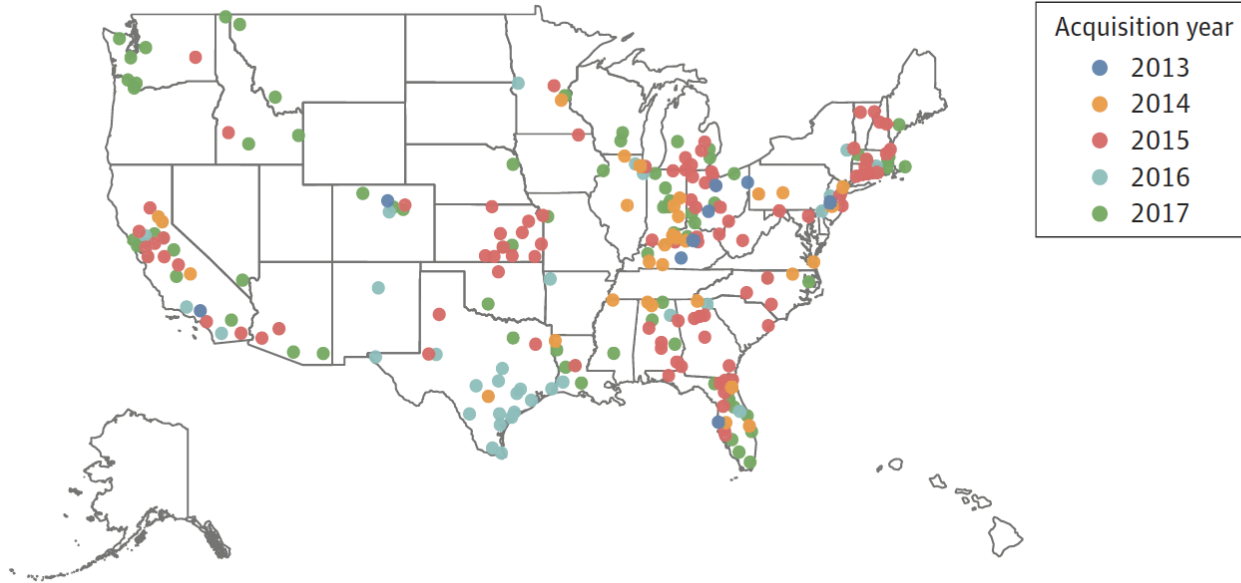
We mapped 533 OB/GYN offices in 2020, excluding the 180 hospitals contracted with Ob Hospitalist Group and 439 offices without identifiable locations. No mapped offices were located in Alaska or Hawaii.

From the Beginning of Life – Fertility Clinics

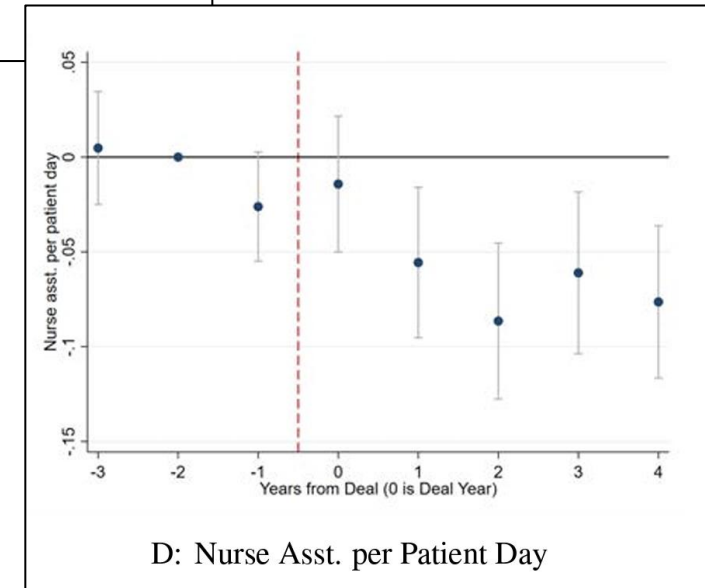


Private equity invests in 8 of 11 fertility chains. Total IVF price = \$40-60K.
Acquisition → 28% ↑ in volume, 14% ↑ in IVF success rate.
No evidence of patient selection.

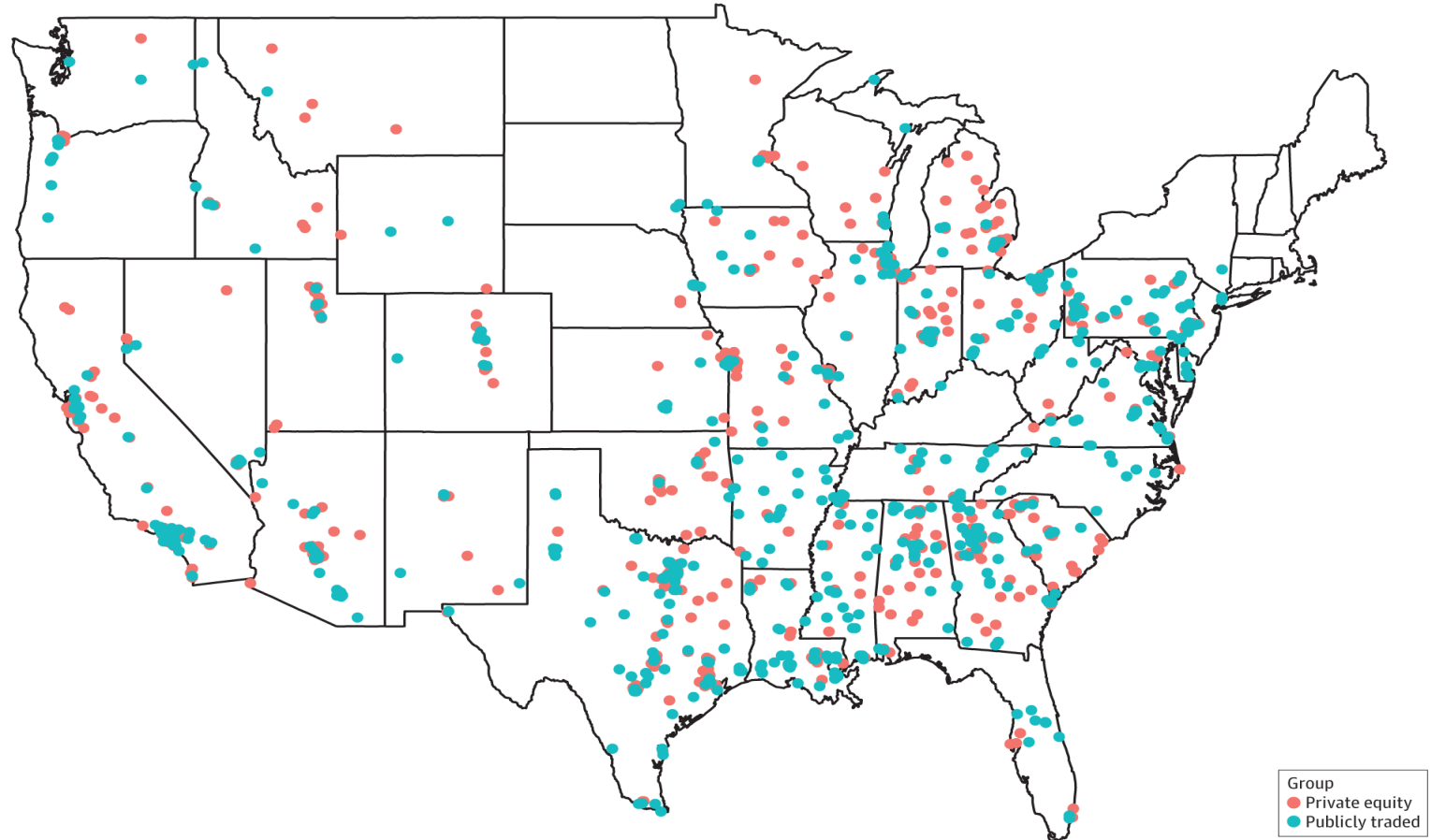
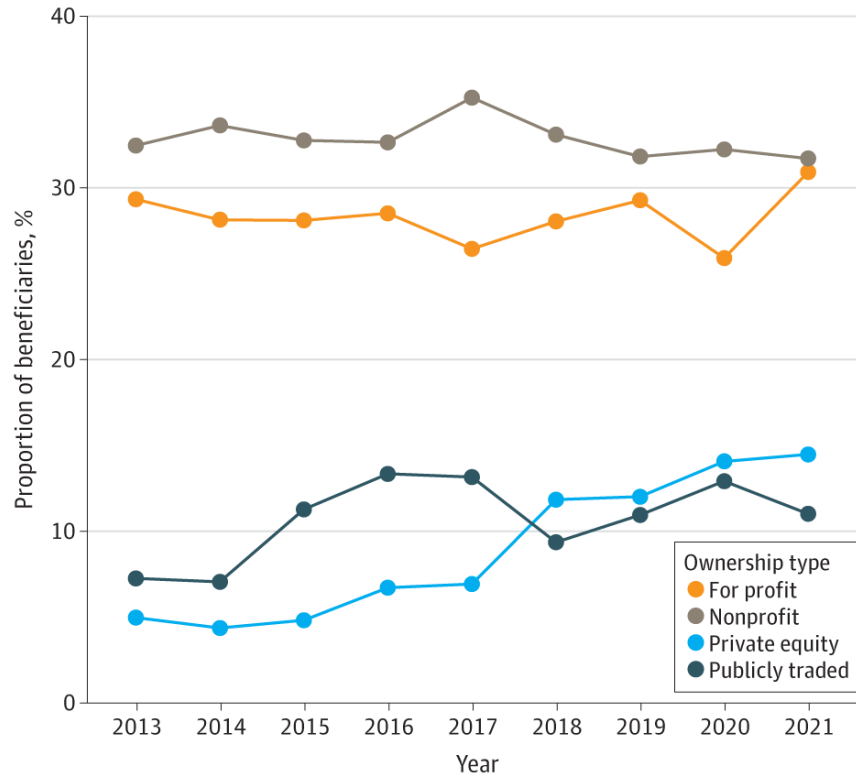
To Older Age – Nursing Homes



PE acquisitions increased:	
ED visits	11%
Hospitalizations	9%
Medicare spending	4%
Mortality	10%

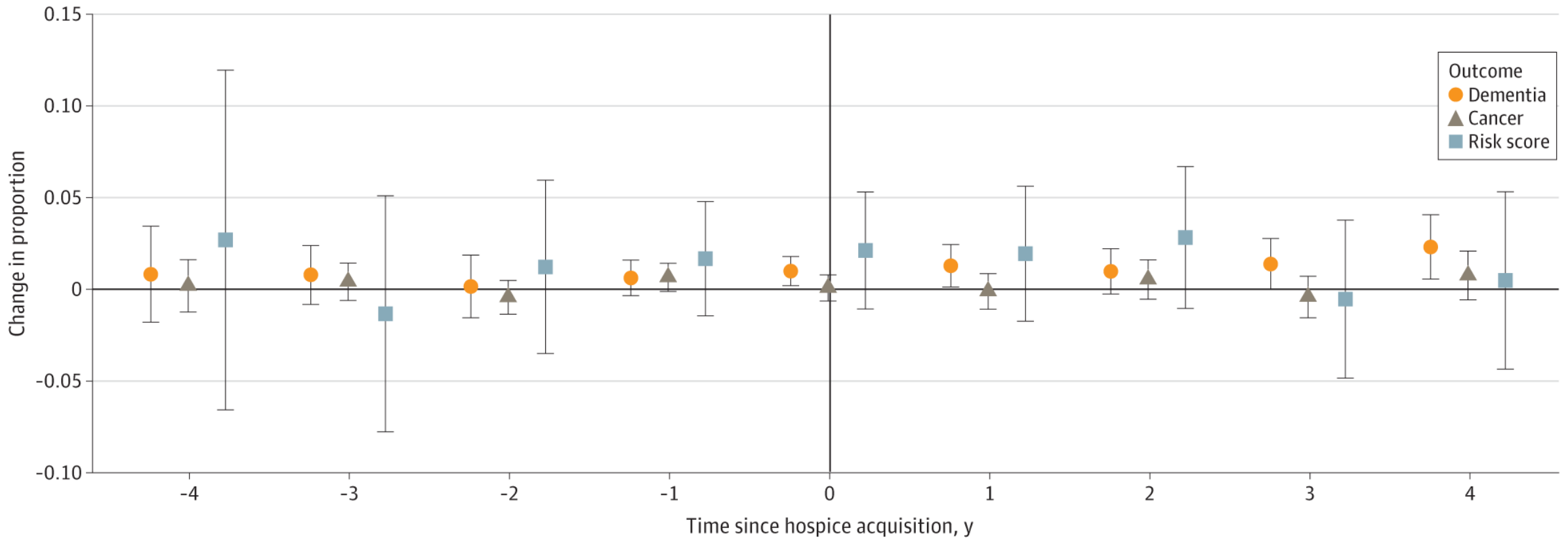


To the End of Life – Hospice



To the End of Life – Hospice

A Private equity



6% ↑ in patients with dementia in PE hospices relative to control

Policy Framework for Private Equity

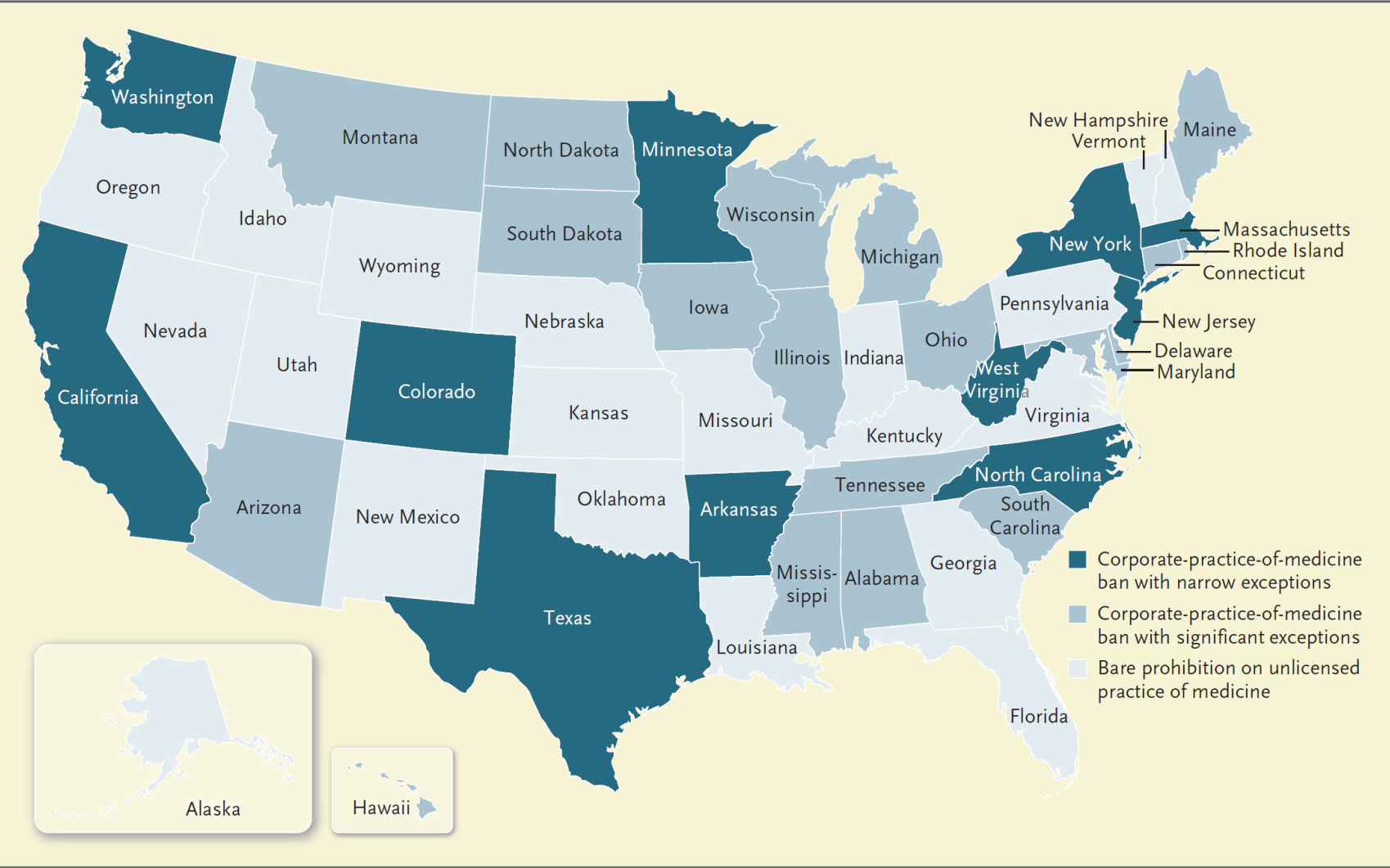
VIEWPOINT

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

JAMA

F	Fraud & abuse	Enforce federal statutes including Anti-Kickback, Stark Laws
A	Antitrust	A) Federal: improve staffing and bandwidth for oversight at FTC B) State: state AGs, "corporate practice of medicine" laws
M	Moral hazard	A) Affiliation rule that ties acquired entities to the parent PE firm B) Limit the % debt used to make an acquisition C) Closure of the 20% carried interest "loophole"
P	Patients & prices	A) No Surprises Act prohibiting surprise billing in certain situations B) Price regulation to mitigate arbitrage incentive of consolidation
T	Transparency	Lower the threshold (\$111.4 million) for mandatory reporting of PE acquisitions and the % debt used in the acquisition.

Corporate Practice of Medicine Laws at the State Level



Scope of State Corporate-Practice-of-Medicine Laws in the United States.

Information is based on the authors' analysis of primary documents and summaries of legal texts as of April 2023.

POLICY INSIGHT

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

DOI: 10.1377/
hlthaff.2023.00942
HEALTH AFFAIRS 43,
NO. 5 (2024): -
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The People-to-People Health
Foundation, Inc.



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.

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“The Body Was Not Even Cold”



To

Subject

Dear Dr. [REDACTED]

Our sincere condolences for the loss of your patient.

The Clinical Documentation Integrity (CDI) team reviews the charts of all deceased patients to make sure that the documentation captures the full complexity of the case. Having performed this review, we would appreciate your thoughtful attention to the Clinical Documentation query below.

There are 3 CDI queries for you in Epic. Access the drop down options by using F2 when completing the query. If needed, further instructions are at the bottom of this email.

Appendix Slides



\$3.9 Billion
→



\$10.6 Billion
→

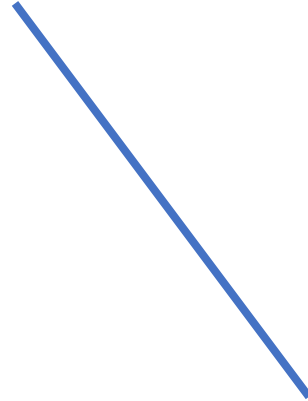


10-year deal
↔



 **PillPack**
by  pharmacy

\$1 Billion
(2018)



\$3.9 Billion
(2022)



 **one medical**

800,000 patients
188 clinics

\$2.1 Billion
(2021)



iorahealth



\$69 Billion
(2018)

Medicare
Advantage



10,000 pharmacies

\$10.6 Billion
(2023)



600 PCPs
169 clinics

\$8 Billion
(2022)



10,000 clinicians in
home health; supports
24 of top 50 MA plans



UnitedHealth Group[®]

10-year deal
(2022)

Many physician
acquisitions

Optum

70,000 Physicians & 2,200 clinics

Example:

Walmart 

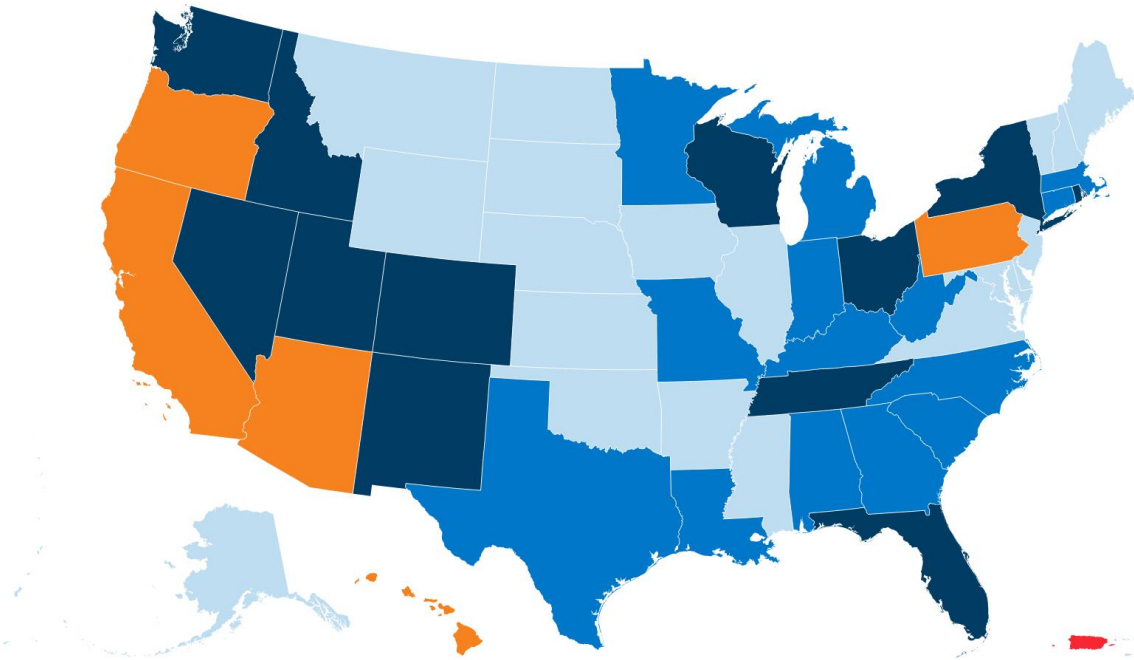
5,000 pharmacies

 Atrius Health

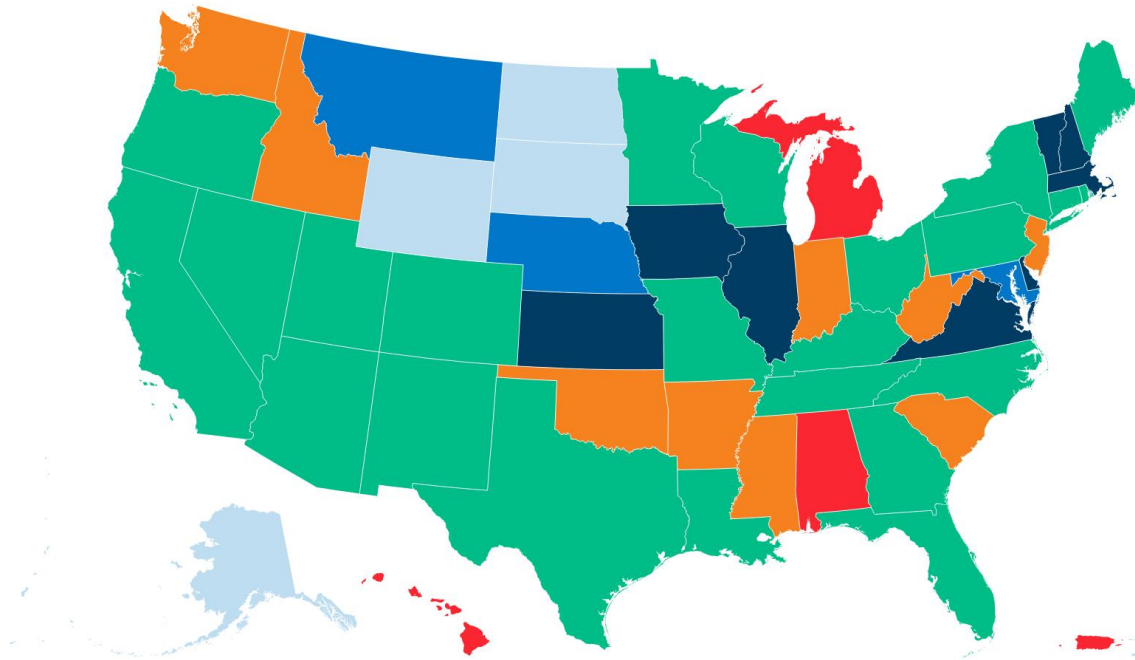
Medicare Advantage in 10 Short Years



■ < 20%
 ■ 20%–30%
 ■ 30%–40%
 ■ 40%–50%
 ■ 50%–60%
 ■ ≥ 60%



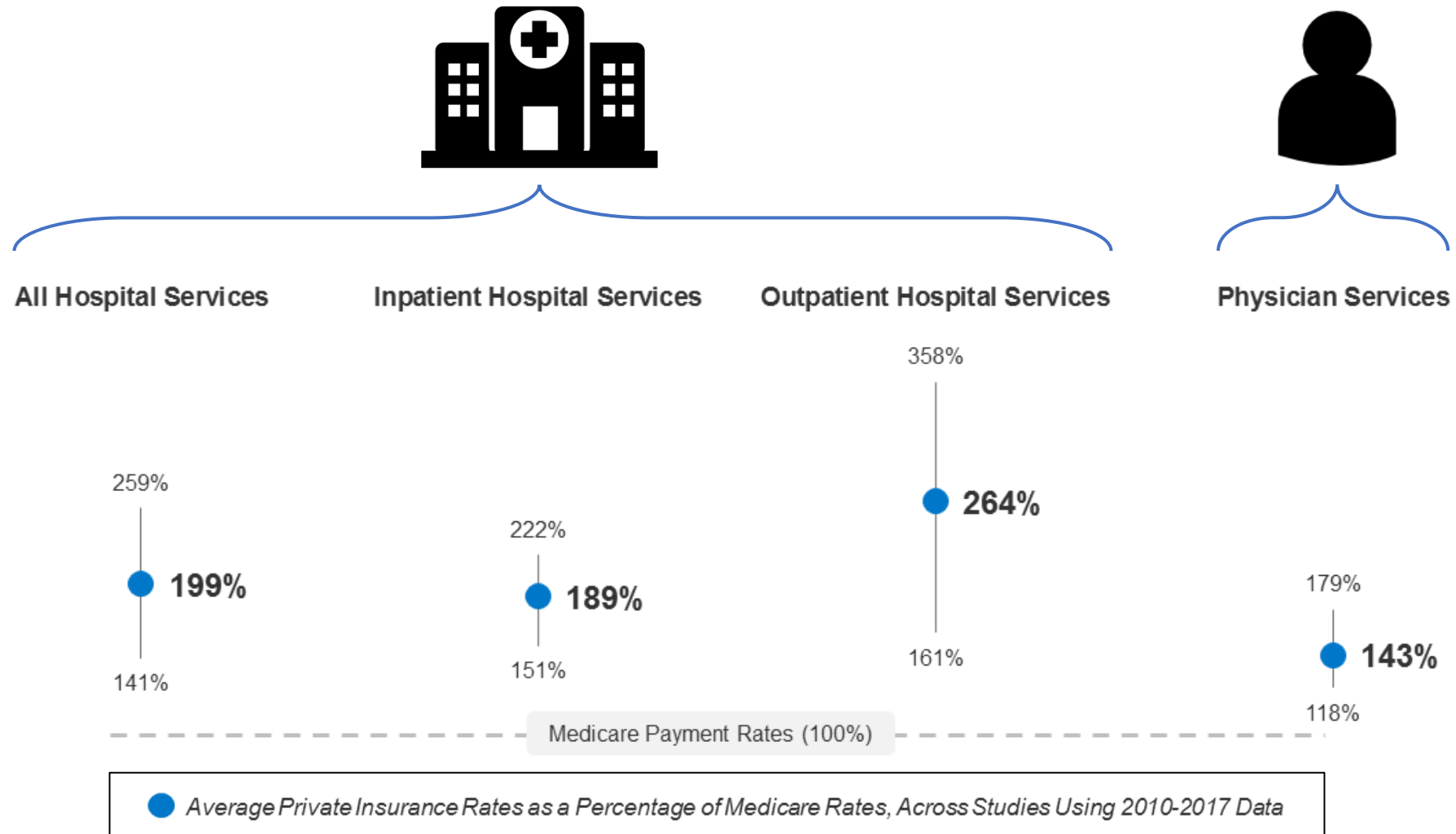
NOTE: Includes only Medicare beneficiaries with Part A and B coverage.
 SOURCE: KFF analysis of CMS Medicare Advantage Enrollment Files and March Medicare Enrollment Dashboard, 2013 and 2023.



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 SOURCE: KFF analysis of CMS Medicare Advantage Enrollment Files and March Medicare Enrollment Dashboard, 2013 and 2023.



Consolidation → Higher Commercial Insurer Prices than Medicare



SOURCE: KFF analysis of 19 published studies comparing private insurance and Medicare payments to providers. Because some studies analyze payments to providers in multiple service categories, the number of studies across all categories is greater than 19.

Two Wrinkles to Commercial Prices: (1) Out-of-Network is Higher

	Medicare Price	Commercial Insurer Price			
		In-Network		Out-of-Network	
		Price	Ratio	Price	Ratio
Office Visit	\$73	\$80	1.1	\$100	1.4
Hernia Repair	\$540	\$771	1.4	\$1523	2.8
ECG	\$9	\$17	1.9	\$28	3.3

No differences
in vs. out of network



(2) Geography Matters – Rural Commercial Prices Are Higher

Selected Commercial Prices as a Percentage of Traditional Medicare Fee-for-Service Prices, 2015.*					
Service Code	Metropolitan Statistical Areas in the United States by Quartile of Population Size (Average Population in 2015)				Medicare Fee-for-Service Price
	Smallest Quartile (112,452)	Second Quartile (188,239)	Third Quartile (408,414)	Largest Quartile (2,022,512)	
	Rural	<i>percent</i>		Urban	\$
Hospitalizations (DRG code)					
Major hip replacement (470)	228	180	159	132	21,977
Sepsis (871)	218	210	213	157	19,515
Digestive disorder (392)	242	183	154	140	8,297

