

MONETIZING MEDICINE: PRIVATE EQUITY AND COMPETITION IN PHYSICIAN PRACTICE MARKETS



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TABLE OF CONTENTS

Summary of Major Conclusions	4
I. Executive Summary	6
II. Introduction: Background and Overview of Our Approach	7
A. Why Look at Private Equity and Healthcare?	8
B. Private Equity Acquisitions of Physician Practices	11
C. Why Look at Private Equity and Competition?	13
D. Situating Our Work in the Existing Literature	15
III. Private Equity’s Market Share in Many Local Physician Practice Markets is High and Increasing	17
IV. The Impact of Private Equity on Prices in Physician Markets Suggests Anticompetitive Effects	24
A. Research Questions	24
B. Data and Methods	25
C. Results	26
D. Implications	30
V. Immediate Policy Steps and More Study Are Both Needed	31
VI. Conclusion	36
VII. Bibliography	37
Appendix A: Illustrative Examples of Private Equity Firms in Select Markets and Specialties	44
Illustrative Example #1: Omers Private Equity Ownership of Gastro Health	44
Illustrative Example #2: Waud Capital Partners	46
Illustrative Example #3: Tyler, TX (MSA)	52
Illustrative Example #4: Spotlight on KKR	54
Appendix B: State-Level Policy Interventions	56
Corporate Practice of Medicine (CPOM)	56
Employment Laws	57
Notice and Approval	57
Transparency and Disclosure	58
Appendix C: Supplemental Price Effect Event Study Results	61
Appendix D: Names of MSAs in Which a Single Private Equity Firm Possesses More Than 30% or 50% Market Share of One or More Physician Specialties, 2021	64
Addenda	69

SUMMARY OF MAJOR CONCLUSIONS

- **PE acquisitions of physician practices are increasing.** We find that private equity (PE) firms have been increasingly acquiring physician practices across a number of physician specialties since 2012, increasing from 75 deals in 2012 to 484 deals in 2021, or more than six-fold increase in only 10 years.
- **PE firms are amassing high market shares in local physician practice markets.** At the local level, we find that individual PE firms are acquiring competitively significant shares of physician practice markets. In particular, in 28% of metropolitan statistical areas (MSAs), a single PE firm has more than 30% market share by full-time-equivalent physicians, and in 13% of MSAs, the single PE firm market share exceeds 50%.
- **PE acquisitions are associated with price and expenditure increases.** In 8 of the 10 physician practice specialties we study, we find statistically significant price increases associated with PE's acquisition of a practice. These price increases range from 16% in oncology to 4% in primary care and dermatology. PE acquisitions are also associated with per-patient expenditure increases for 6 of 10 specialties, ranging from 4% to 16% depending on the specialty.
- **Price increases associated with PE acquisitions are exceptionally high where a PE firm controls a competitively significant share of the local market.** When we focus our analysis on markets where a single PE firm controls more than 30% of the market, we find further elevated prices associated with PE acquisitions in each of the 3 specialties with statistically significant results, for gastroenterology (18%), obstetrics and gynecology (16%), and dermatology (13%).
- **Increased attention to the competition impacts of PE in physician markets is urgently needed.** The vast majority of the PE acquisitions studied in this report took place without federal antitrust scrutiny and with limited state antitrust scrutiny. The market share and price results reported here indicate that more scrutiny is warranted on PE's impact on competition. The pace at which PE is entering these markets and monetizing medicine makes a quick response imperative.
- **Changes to Hart-Scott-Rodino (HSR) requirements, reimbursement policies, and tax policies are needed.** At a minimum, federal antitrust reporting requirements must be adapted to modern business models, including PE, to ensure regulators have the information they need to evaluate the competition impacts of these deals. The FTC has recently begun that process, which we applaud. HSR changes alone, however, are not enough, and we also recommend changes to Medicare reimbursement policy and tax policies that are driving consolidation and PE opportunism.

- **More study is needed to understand the impact of PE acquisitions on healthcare.** More study, starting with the development of better data sets, is needed to understand the complex impact of PE ownership in physician practice and healthcare markets generally. Expansion of healthcare ownership transparency beyond nursing homes is an important first step. Public reporting of PE deals would also facilitate understanding. Finally, building consensus around healthcare quality measures and the adoption of mandatory reporting would both enable better study of competition impacts and, potentially, incentivize PE funds and others who are monetizing medicine to seek high-quality healthcare, not just high profits.

I. EXECUTIVE SUMMARY

In the past several decades, a significant number of physicians have transitioned from working in small practices that they own to working in larger practices that are owned by corporate entities, such as hospitals, health systems, and health insurers. This transition occurred in part because care delivery has become more complex, offering opportunities to generate more revenue by better managing clinical and financial processes, particularly under value-based reimbursement contracts. The larger practices are also in a more favorable position when negotiating pricing with large private insurers with significant bargaining power. Finally, the growing disparity between the Medicare fees for physician care versus hospital outpatient care has left many physician practices financially vulnerable.

In the past decade, another investment model has entered into this space, namely private equity funds, which pool money from high-net-worth individuals and institutional investors to acquire physician practices. The impact on competition of private equity's entry into this space is not well understood. This study seeks to address this deficit, as private equity continues to monetize medicine. The study has three objectives. First, it describes trends in private equity acquisition rates and local market shares for ten physician specialties. Second, it estimates the impact of these acquisitions on prices and healthcare expenditures for physician services in local markets, with a particular focus on markets where a private equity firm has a market share over 30 percent. Third, it discusses the policy implications of these findings. Our report fills a gap in the literature by asking not just whether PE acquisitions of physician practices have negative impacts on prices and expenditures, but asking whether those negative impacts are attributable to competition concerns.

The study uses several datasets to achieve these objectives. Pitchbook is used to identify acquisitions of physician practices by private equity firms. These acquisitions were linked to IQVIA physician databases—OneKey and SK&A Office Based Physicians Database—that provide information about the location, size, and specialty of the physician practice. To analyze the impact of these acquisitions on prices and expenditures for physician services, we linked the IQVIA physician databases to healthcare claims data from the Healthcare Cost Institute (HCCI) Commercial Claims Research Dataset. The HCCI Dataset includes claims from Blue Health Intelligence (i.e., participating Blue Cross Blue Shield [BCBS] company members), Aetna, and Humana, totaling approximately 55 million lives per year from employer-sponsored plans.¹

We find that private equity firms have been increasingly acquiring physician practices across a number of physician specialties since 2012, increasing from 75 deals in 2012 to 484 deals in 2021, or more than six-fold increase in only 10 years. Some of these acquisitions have been concentrated in particular markets, resulting in a single PE firm having more than 30% market share by full-time-equivalent physicians in 28% of metropolitan statistical areas (MSAs), and reaching more than 50% market share in 13% of MSAs.

Using difference-in-differences and event study designs to estimate the impact of private equity acquisitions, we found that PE acquisitions are associated with price increases in 8 of 10 specialties, and that these price increases are particularly high in MSAs where a single PE firm controls more than 30% of the market. In particular, PE acquisitions were associated with the following physician price increases:

¹ Anthem-owned BCBS company members do not participate in Blue Health Intelligence.

oncology (16.4%), gastroenterology (14.0%), OB/GYN (8.8%), ophthalmology (8.7%), radiology (8.2%), orthopedics (7.1%), primary care (4.1%), and dermatology (4.0%). In MSAs where a single PE firm had greater than 30% market share, the price effect was significant for these specialties: gastroenterology (18.2%), dermatology (13.3%), and OB/GYN (16.3%). PE acquisitions were also associated with per-patient expenditure increases for 6 of 10 specialties, ranging from 4% to 16% depending on the specialty.

It is important to note that the consolidation of, and lack of competition in, physician markets is an issue that goes beyond private equity investment. For example, two studies that systematically reviewed the evidence on the impacts of hospitals acquiring physician practices found that these acquisitions were associated with higher physician prices and expenditures, with mixed results on quality. Nevertheless, even against this backdrop, we conclude private equity firms' acquisitions of physician practices warrant more scrutiny and study, given the significant local market shares that some PE firms have amassed and the demonstrated negative impact of PE ownership on prices.

In particular, we recommend several changes to HSR antitrust reporting rules to better address PE ownership structures and stealth acquisitions generally, coupled with increased transparency on healthcare ownership. HSR is the initial step in reporting mergers and acquisitions to U.S. antitrust authorities and critical to effective antitrust review and enforcement. We also recommend several changes to Medicare payment models and the tax code to eliminate market distortions that reward consolidation and financial engineering. Finally, we identify several areas for further study.

II. INTRODUCTION: BACKGROUND AND OVERVIEW OF OUR APPROACH

In the past several decades, physicians have transitioned from working in small, physician-owned practices to working in larger practices, including those that are owned by corporate entities, such as hospitals, health systems, and health insurers.² This transition occurred for at least two reasons. First, care delivery has become more complex, requiring physician practices to have access to capital and sufficient scale to better manage clinical and financial risk, particularly under value-based reimbursement contracts. Second, reimbursement rates for physician services are under stress from the major payers. The Medicare physician fee schedule has not kept up with physician practice expenses, and Medicaid reimbursement

² Kara Contreary et al., "Consolidation and Mergers among Health Systems in 2021: New Data from the AHRQ Compendium," *Health Affairs Forefront*, 2023; Nancy D. Beaulieu et al., "Organization and Performance of US Health Systems," *JAMA* 329, no. 4 (2023): 325–35; Laura Dyrda, "Optum vs. CVS Health after the \$10.6B Oak Street Deal," *Becker's Hospital Review*, February 10, 2023, <https://www.beckershospitalreview.com/disruptors/optum-vs-cvs-health-after-the-10-6b-oak-street-deal.html>; Avalere Health, "COVID-19's Impact On Acquisitions of Physician Practices and Physician Employment 2019-2021" (Physicians Advocacy Institute, 2022), http://www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/PAI-Research/PAI%20Avalere%20Physician%20Employment%20Trends%20Study%202019-21%20Final.pdf?ver=ksWkgjKXB_yZfImFdXlvGg%3D%3D; Carol K Kane, "Recent Changes in Physician Practice Arrangements: Private Practice Dropped to Less Than 50 Percent of Physicians in 2020" (Chicago, IL: American Medical Association, 2021), <https://www.ama-assn.org/system/files/2021-05/2020-prp-physician-practice-arrangements.pdf>; David Dranove and Lawton Robert Burns, *Big Med: Megaproviders and the High Cost of Health Care in America* (Chicago, IL: University of Chicago Press, 2021); Michael F. Furukawa et al., "Consolidation Of Providers Into Health Systems Increased Substantially, 2016–18: Study Examines Provider Consolidation into Vertically-Integrated Health Systems," *Health Affairs* 39, no. 8 (2020): 1321–25; Brent D Fulton, "Health Care Market Concentration Trends in the United States: Evidence and Policy Responses," *Health Affairs* 36, no. 9 (2017): 1530–38; Lawton Robert Burns, Jeff C Goldsmith, and Aditi Sen, "Horizontal and Vertical Integration of Physicians: A Tale of Two Tails," in *Annual Review of Health Care Management: Revisiting the Evolution of Health Systems Organization* (Emerald Group Publishing Limited, 2013), 39–117; Richard M. Scheffler, *Is There a Doctor in the House?: Market Signals and Tomorrow's Supply of Doctors* (Stanford, CA: Stanford University Press, 2008).

rates are notoriously low. Hence, physician practices have sought to gain more bargaining power with private health insurers, which have also consolidated.

However, it is not clear that many, or even most, private equity acquisitions in this space are motivated by potential economies of scale and scope versus financial engineering. Moreover, even where there are potential cost savings from economies of scale and scope from larger physician practices, they often are not passed on to patients or payors in the form of lower prices and higher quality. Several studies—including two studies that systematically reviewed the evidence—have found that hospital-physician integration led to higher physician prices and total expenditures without a consistent association with improved quality.³ Another more recent study, published in January 2023, found that physicians and hospitals that were part of health systems had significantly higher prices and expenditures but only modestly better quality than physicians and hospitals that were not part of health systems.⁴

A. WHY LOOK AT PRIVATE EQUITY AND HEALTHCARE?

In the past two decades, another non-physician owner has entered the physician space: private equity firms. Private equity firms pool money from high-net-worth individuals and institutional investors to acquire physician practices. A common strategy that private firms employ is to acquire a large physician practice—referred to as the “platform” practice—and then acquire smaller practices in the same specialty that have less infrastructure, potentially creating economies of scale and scope, providing managerial expertise, adding ancillary services, and increasing bargaining power with payers.⁵ Some examples of private equity firms acquiring practices in particular specialties include the following: GI Alliance (owned by Waud Capital) with over 670 affiliated gastroenterologists in 2022;⁶ TeamHealth, Envision, SCP Health, and American Physician Partners are four of the largest six emergency medicine staffing companies as of 2022;⁷ and eight private-equity-backed platform companies (Acuity Eyecare Holdings, Capital Vision Services, EyeCare Partners, Eyecare Services Partners, EyeSouth Partners, Keplr Vision, Total Eye Care Partners, Vision Group Holdings) have acquired ophthalmology and optometry practices in five or more states as of 2019.⁸

Due to corporate practice of medicine laws in some states that prevent physicians working for a non-physician owner, private equity firms sometimes acquire management service organizations or physician management companies, which own the nonclinical assets of a physician practice. These firms provide administrative, financial, and clinical support services to the physician practice. The administrative and

³ James Godwin et al., “The Association between Hospital-Physician Vertical Integration and Outpatient Physician Prices Paid by Commercial Insurers: New Evidence,” *INQUIRY: The Journal of Health Care Organization, Provision, and Financing* 58 (2021): 1–10; Rachel M Machta et al., “A Systematic Review of Vertical Integration and Quality of Care, Efficiency, and Patient-Centered Outcomes,” *Health Care Management Review* 44, no. 2 (2019): 159–73; Brady Post, Tom Buchmueller, and Andrew M Ryan, “Vertical Integration of Hospitals and Physicians: Economic Theory and Empirical Evidence on Spending and Quality,” *Medical Care Research and Review* 75, no. 4 (2018): 399–433; Richard M. Scheffler, Daniel R. Arnold, and Christopher M. Whaley, “Consolidation Trends in California’s Health Care System: Impacts on ACA Premiums and Outpatient Visit Prices,” *Health Affairs* 37, no. 9 (2018): 1409–16.

⁴ Beaulieu et al., “Organization and Performance of US Health Systems.”

⁵ Daniel Brill et al., “Private Equity in Ophthalmology: Lessons from Other Specialties,” *Current Opinion in Ophthalmology* 33, no. 5 (2022): 352–61.

⁶ Mary Bugbee, Eileen O’Grady, and Michael Fenne, “Recent Trends in Private Equity Healthcare Acquisitions” (Chicago, IL: Private Equity Stakeholder Project, 2023), https://pestakeholder.org/wp-content/uploads/2023/02/PESP_Report_HC_Acquisitions_Feb2023_FINAL.pdf.

⁷ Leon Adelman, “2023 State of the Emergency Medicine Employer Market” (Raleigh, NC: Ivy Clinicians, 2023), https://assets.ivyclinicians.io/content/2023%20State%20of%20the%20EM%20Employer%20Market_Ivy%20Clinicians.pdf.

⁸ Evan M. Chen et al., “Private Equity in Ophthalmology and Optometry: Analysis of Acquisitions from 2012 through 2019 in the United States,” *Ophthalmology* 127, no. 4 (2020): 445–55, <https://doi.org/10.1016/j.ophtha.2020.01.007>.

financial support services include human resources, legal, billing, and negotiations with payers on physician fee schedules, and the clinical support services include value-based contracting and population health management. One study was able to distinguish between physician management companies, finding that if the physician practice was acquired by a physician management company mostly providing financial support services, then low-risk cesarean sections increased by 10-11%, but if the practice was acquired by a physician management company mostly providing clinical support services, low-risk cesarean sections decreased by 22%, making that practice competitive for value-based contracts.⁹

However, in 2021, the American Antitrust Institute and the Petris Center issued the report *Soaring Private Equity Investment in the Healthcare Sector: Consolidation Accelerated, Competition Undermined, and Patients at Risk*, which was authored by several of the authors of the current report. The report began with an explanation of why we were focused on private equity in healthcare: “The short answer is that when the fundamental characteristics of the private equity business model are combined with the unique structure of the United States healthcare market, the results are potentially catastrophic for patients, payers, and the long-term stability of the healthcare supply chain. And, because the consequences in healthcare involve not just dollars but lives, these potential harms must not be ignored”.¹⁰ The current report further establishes why the entry of private equity into healthcare merits attention from regulators. Bolstered by a rapidly developing body of evidence,¹¹ we show that competition concerns surrounding private equity ownership of physician practices are well-founded, and that private equity firms are gaining control of markets and increasing prices and per patient expenditures accordingly.

Healthcare provider markets, which have notoriously opaque pricing structures and complex and poorly aligned financial incentives because of government subsidies and the prevalence of third-party payors, present a PE problem like no other. Heavy and varied regulatory burdens, complex compensation models, and inelastic demand mean that competition functions imperfectly, at best, in healthcare markets.¹² Adding PE investment has the potential to make the situation much worse, as private equity pushes to monetize physician practices.

The significance of this topic has only grown since we issued our 2021 report. The COVID-19 pandemic has both illuminated significant vulnerabilities in the U.S. healthcare system and caused significant changes to that system. Private equity acquisitions have played a big part in those changes. After a temporary pause in investments during the early stages of the pandemic, private equity investors seized the

⁹ Ambar La Forgia, “The Impact of Management on Clinical Performance: Evidence from Physician Practice Management Companies,” *Management Science*, 2022, 1–22.

¹⁰ Richard M. Scheffler, Laura M. Alexander, and James R. Godwin, “Soaring Private Equity Investment In The Healthcare Sector: Consolidation Accelerated, Competition Undermined, And Patients At Risk” (American Antitrust Institute & UC-Berkeley Petris Center, 2021), <https://petris.org/soaring-private-equity-investment-in-the-healthcare-sector-consolidation-accelerated-competition-undermined-and-patients-at-risk/>.

¹¹ Jiani Yu et al., “Physician Management Companies and Neonatology Prices, Utilization, and Clinical Outcomes,” *Pediatrics* 151, no. 4 (2023): e2022057931; Ambar La Forgia et al., “Association of Physician Management Companies and Private Equity Investment with Commercial Health Care Prices Paid to Anesthesia Practitioners,” *JAMA Internal Medicine* 182, no. 4 (2022): 396–404; Yashaswini Singh et al., “Association of Private Equity Acquisition of Physician Practices With Changes in Health Care Spending and Utilization,” *JAMA Health Forum* 3, no. 9 (September 2, 2022): e222886, <https://doi.org/10.1001/jamahealthforum.2022.2886>; Robert Tyler Braun et al., “Private Equity In Dermatology: Effect On Price, Utilization, And Spending,” *Health Affairs* 40, no. 5 (May 1, 2021): 727–35, <https://doi.org/10.1377/hlthaff.2020.02062>.

¹² Martin Gaynor, “What to Do about Health-Care Markets? Policies to Make Health-Care Markets Work” (Washington, DC: Brookings, 2020), https://www.brookings.edu/wp-content/uploads/2020/03/Gaynor_PP_FINAL.pdf; Clark C. Havighurst and Barak D. Richman, “Distributive Injustice (s) in American Health Care,” *Law and Contemporary Problems* 69, no. 4 (2006): 7–82.

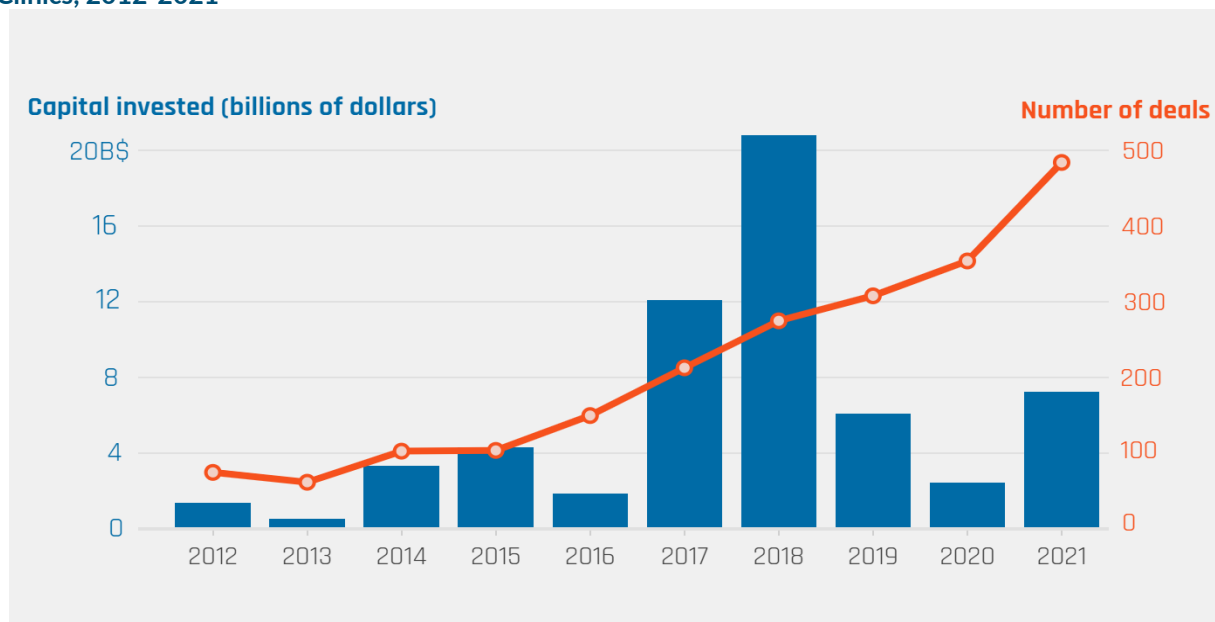
opportunity to buy up and consolidate physician practices as the pandemic waned. Now, with the pandemic largely behind us, PE shows few signs of slowing down.

In the years leading up to the COVID-19 pandemic, PE acquisitions in healthcare were accelerating. As we documented in the 2021 report, PE investment in healthcare increased almost three-fold from \$41.5 billion in 2010 to \$119.9 billion in 2019.¹³ At the time, we noted a drop in investment levels in 2020 to \$95.9 billion. While it remained to be seen at the time whether this fall-off would be sustained, we now know that, at least in physician markets, it was not. In physician practice markets, rather than a sign of waning interest of PE in healthcare, the 2020 numbers seem to reflect a temporary pause from which PE investing has since rebounded.

As illustrated in Figure 1, PE acquisitions of outpatient clinics, which include physician practices, experienced significant growth between 2020 and 2021, from 354 to 484 deals, an increase of 37% (see red line, measured on right axis). Some of these acquisitions likely reflect deals delayed from 2020 as the pandemic caused a broad pause in investing. There has also been a decrease in capital invested starting around 2018 that continues through the end of the data series (see blue bars, measured on left axis). But even with that context, the 2021 investment levels demonstrate a sustained interest by PE in the outpatient clinic space.

During the entire period, the number of deals increased five-fold and the capital invested in physician practices by private equity increased from less than \$2 billion to over \$20 billion by 2018, and then fell during the pandemic before rebounding.

Figure 1: Number of Deals and Capital Invested of Reported Private Equity Investments in Outpatient Clinics, 2012-2021



Notes: This figure represents PE deals and capital invested from 2012-2021 in all outpatient clinics, excluding veterinary, physical therapy, behavioral, and dental care. The total capital invested in outpatient clinics is estimated as \$60 billion. Source: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022. PitchBook data has not been reviewed by PitchBook analysts.

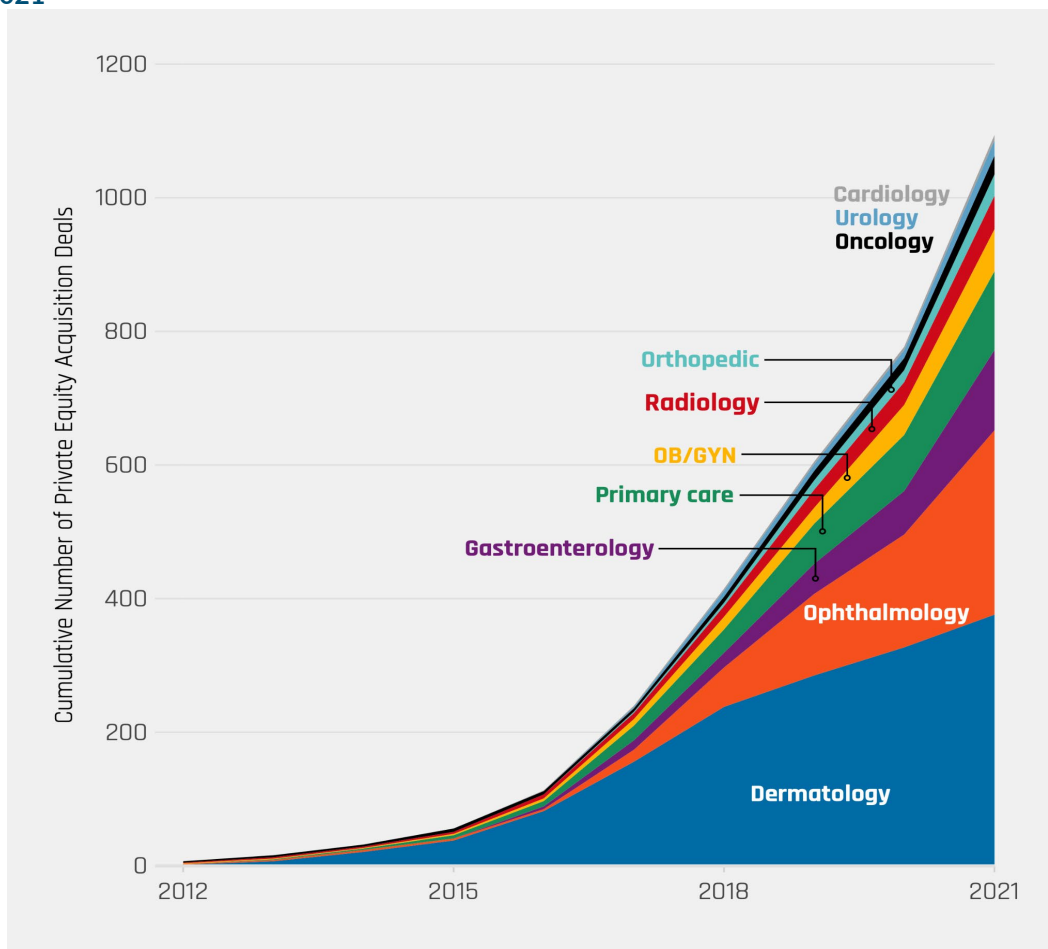
¹³ Scheffler, Alexander, and Godwin, "Soaring Private Equity Investment In The Healthcare Sector: Consolidation Accelerated, Competition Undermined, And Patients At Risk."

B. PRIVATE EQUITY ACQUISITIONS OF PHYSICIAN PRACTICES

We turn now to how private equity has invested in physician practices. Figure 2 shows the cumulative number of private equity acquisitions of physician practices from 2012 to 2021 across 10 physician specialties: dermatology, ophthalmology, gastroenterology, cardiology, oncology, obstetrics and gynecology (OB/GYN), orthopedics, primary care, urology, and radiology. The largest number of deals occurred in dermatology (376), ophthalmology (276), gastroenterology (120), and primary care (118), collectively accounting for 890 of the 1,094 (or 81%) of the deals during this period.

In 2020, during the early stages of the COVID pandemic, acquisition rates decreased in most specialties before increasing again in 2021. Overall, the number of deals consistently increased during this period in most of the specialties, with the exception of dermatology. Acquisitions of dermatology practices—which have an outsized influence on the overall figures—do not track other specialties. The precipitous drop in the number of deals in dermatology largely occurred pre-COVID, and contributed significantly to the slowed acceleration in cumulative deal counts and the large drop in deal values between 2018 and 2019 (Figure 1). Dermatology was one of the first specialties to attract significant private equity investment, and this decline may reflect that considerable consolidation has already taken place in this specialty.

Figure 2: Cumulative Number of Private Equity Acquisition Deals of Physician Practices by Specialty, 2012-2021



Source: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022. PitchBook data has not been reviewed by PitchBook analysts.

Since the 2021 report was issued,¹⁴ policymakers have turned considerable attention to the issues raised surrounding private equity. The U.S. antitrust agencies have voiced concerns about private equity in healthcare,¹⁵ directing additional scrutiny at mergers and acquisitions involving PE,¹⁶ and have added prior notice and approval requirements to settlements involving PE firms.¹⁷ They have also rescinded guidance that favored PE divestiture buyers,¹⁸ and have argued in court that a proposed divestiture buyer's PE ownership would lessen its ability and incentives to compete.¹⁹

In the wake of empirical studies showing increased cost and mortality at PE-owned nursing homes, the White House expressed concerns about PE acquisitions in healthcare.²⁰ The Administration directed HHS to implement nursing home ownership disclosures required by the Affordable Care Act.²¹ The No Surprises Act,²² passed by Congress in 2020, also went into effect, barring surprise billing²³ by emergency room physicians, a practice pioneered by private equity-owned firms.

At the same time, policymakers have wrestled with how to understand the scope and nature of PE's impact on competition. As a result, the policy response to PE has been somewhat scattershot, lacking a coherent narrative and unified approach. To some extent, this reflects PE's strategy of opportunistically exploiting regulatory cracks and loopholes, lending the policy response a "whack-a-mole" feel. The agencies' scrutiny of PE has also come under considerable criticism, much of it from those with a hand in the private equity industry, as private equity continues to monetize physician practices. For example, Makan Delrahim, former Assistant Attorney General for Antitrust at DOJ, former lobbyist on behalf of PE, and current private attorney representing PE firms, authored an op-ed in the *Wall Street Journal* arguing that the agencies' crackdown on PE is harming competition.²⁴ This report provides evidence that, in fact, private equity's acquisitions of physician practices are harming competition.

¹⁴ Scheffler, Alexander, and Godwin.

¹⁵ Andrew Forman, "The Importance of Vigorous Antitrust Enforcement in Health Care" (Washington, DC: U.S. Department of Justice, June 3, 2022), <https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-andrew-forman-delivers-keynote-abas-antitrust>; Austin A.B. Ownbey, "DOJ, FTC Scrutiny Tests Private Equity Firms," *Bloomberg Law*, September 13, 2022, <https://news.bloomberglaw.com/us-law-week/DOJ-FTC-Scrutiny-Tests-Private-Equity-Firms>.

¹⁶ Siri Bulusu, "Private Equity Firms Facing More Questions in FTC Merger Reviews," *Bloomberg Law*, January 13, 2022, <https://news.bloomberglaw.com/antitrust/private-equity-firms-facing-more-questions-in-ftc-merger-reviews>.

¹⁷ Lina M. Khan, JAB Consumer Partners SCA SICAR et al., No. C-4770 (Federal Trade Commission October 10, 2022).

¹⁸ U.S. Department of Justice, "Mergers Remedy Manual" (Washington, DC: Antitrust Division, U.S. Department of Justice, September 2020), <https://www.justice.gov/atr/page/file/1312416/download>.

¹⁹ Bryan Koenig, "UnitedHealth-Change Judge Outlines Why DOJ Lost," *Law360*, September 21, 2022, <https://www.law360.com/articles/1532810>.

²⁰ Leah Nysten and Todd Shields, "US Is Focused on Regulating Private Equity Like Never Before," *Bloomberg*, November 22, 2022, <https://www.bloomberg.com/news/articles/2022-11-22/private-equity-regulation-becomes-biden-administration-focus>.

²¹ Joseph R. Biden, "2022 State of the Union Address" (Washington, DC: The White House, March 1, 2022), <https://www.whitehouse.gov/state-of-the-union-2022/>; The White House, "FACT SHEET: Protecting Seniors by Improving Safety and Quality of Care in the Nation's Nursing Homes" (Washington, DC: The White House, February 28, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/28/fact-sheet-protecting-seniors-and-people-with-disabilities-by-improving-safety-and-quality-of-care-in-the-nations-nursing-homes/>.

²² Julie Appleby, "Congress Acts To Spare Consumers From Costly Surprise Medical Bills," *NPR*, December 22, 2020, sec. Health Inc., <https://www.npr.org/sections/health-shots/2020/12/22/949047358/congress-acts-to-spare-consumers-from-costly-surprise-medical-bills>.

²³ Zack Cooper, Fiona Scott Morton, and Nathan Shekita, "Surprise! Out-of-Network Billing for Emergency Care in the United States," *Journal of Political Economy* 128, no. 9 (2020): 3626–77.

²⁴ Makan Delrahim, "Antitrust Attacks on Private Equity Hurt Consumers," *Wall Street Journal*, July 31, 2022, sec. Opinion, <https://www.wsj.com/articles/antitrust-attacks-on-private-equity-hurt-consumers-lina-khan-ftc-recession-competition-management-expertise-capital-11659271442>.

C. WHY LOOK AT PRIVATE EQUITY AND COMPETITION?

The complexity of competition concerns surrounding PE acquisitions of physician practices is rooted in a combination of the PE business model, the characteristics of healthcare provider markets, and gaps in regulatory oversight. PE firms are structured as partnerships of fund managers.²⁵ A typical PE fund manager contributes only two percent of the fund's total assets. Institutional and other investors contribute about 20 percent, and the remaining 70-80 percent of the fund's "equity" is debt financing from banks. A typical PE fund has a ten-year lifespan from the point at which it begins taking on investors until it returns the results of the investment less fees to the investors. During those 10 years, the fund will buy and sell companies, typically aiming to hold each company for 3-5 years, although there is some evidence that holding periods have recently grown to 4-6 years.

PE fund managers profit if they are able to sell the firms they acquire for more than they paid. But these profits are only part of how PE fund managers make money. PE funds typically operate on a "2-and-20" fee model, whereby the PE managers take an annual management fee of 2% of the money invested in the fund each year, plus 20 percent of the profits at the end of the fund. PE fund managers also make a considerable amount of money on the fees they charge the business they acquire, and often through financial engineering, as well. For example, PE funds also impose management and consulting fees on the businesses they acquire.

In addition, as managers of the acquired businesses, PE funds often put in place business deals between the companies acquired by the fund and the fund, its investors, or the fund manager's affiliates. These deals can include supply agreements, licensing deals, or the sale of assets of the acquired companies to real estate investment trusts or other investors.

PE funds value companies in terms of multiples of EBITDA (earnings before interest, taxes, depreciation, and amortization) because this measure reflects earnings from operations, separate from how the companies are capitalized. To profitably divest an acquired company, the PE fund must find a way to increase the company's multiple, its EBITDA, or both. To increase EBITDA, the PE fund will look for quick ways to cut costs and increase revenue.

In the healthcare setting, cutting costs often involves cutting workers or replacing highly paid (and highly qualified) workers with lower paid (and less highly qualified) workers. It might also involve switching to cheaper supplies, such as sutures and tubing, or reducing hours or closing entire facilities. These cuts may adversely affect quality, which is often not transparent to patients or payers in healthcare. To raise healthcare revenues, PE managers have been known to put pressure on physicians and other healthcare workers to perform more profitable procedures or to shift the business focus from a less profitable practice to a more profitable practice. PE managers might also engage in aggressive billing and collection practices to increase revenues.²⁶

To increase the EBITDA multiple, future growth in EBITDA is necessary, often through acquisitions. There are at least two reasons for this acquisition strategy by PE. First, PE firms engage in what they call

²⁵ Eileen Appelbaum and Rosemary Batt, *Private Equity at Work: When Wall Street Manages Main Street* (Russell Sage Foundation, 2014).

²⁶ See e.g., *UnitedHealthCare Services, Inc. v. Team Health Holdings, Inc.*, Memorandum & Order, 3:21-00364-DCLC-JEM 3, May 10, 2022

“consolidation plays.” As the name implies, a fund will seek to consolidate a fragmented industry or market with a goal of becoming a dominant player in that market. Achieving such dominance gives the firm pricing power and allows the PE fund to demand a higher multiple in a subsequent sale.

Second, larger companies have access to more and cheaper debt.²⁷ By growing an acquired company, the PE fund positions it to take on more debt, which makes it a desirable acquisition target for a second PE fund that wants to further leverage the company, potentially increasing the returns to the equity holders, albeit with more risk. The goal of the PE fund in most cases is to grow by acquisition to both consolidate competitors and leverage the company as much as possible, in other words, to monetize medicine.

The structure of PE firms and the way they structure their mergers allows much of this growth and consolidation to take place without any (or any effective) review. As one group of scholars put it, “PE acquisitions are more likely to be anticompetitive because idiosyncratic features of US antitrust law allow many of them to effectively escape enforcement” (p. 2).²⁸ For example, market concentration can increase from numerous acquisitions of small physician practices that are not subject to antitrust review.²⁹

Under the typical financial structure of PE funds, whereby the various partners at a single PE firm oversee a multitude of individual funds, the reporting requirements often fail to provide antitrust authorities with sufficient information to accurately evaluate the competitive risk from fund acquisitions. For example, a newly formed PE fund’s first acquisition is generally not reportable under HSR because the fund does not meet the “size of the person” test due to how rules about ultimate parent entities are determined.³⁰ But PE firms typically have multiple funds covering the same market areas, and the manager of a newly-formed fund often oversees other funds that do hold assets in related areas. So, even though the newly-formed fund is exempt from HSR reporting on its first acquisition of a target company, the PE manager and the PE firm may well have significant holdings that compete with that target company.

Even without this “first-one-free” gap in HSR reporting, the buy-and-build model deployed by PE funds allows the funds to accumulate significant market power, particularly in localized geographic markets, without any oversight from federal competition authorities. This issue is particularly acute in the healthcare setting, where PE firms regularly deploy a “buy-and-build” or “roll up” strategy, buying one practice then using that practice to buy and consolidate additional practices. PE funds’ deal amounts, particularly in healthcare provider markets, often fall just below the threshold for HSR reporting and pre-approval.³¹ Through this approach, PE funds will buy a medium or large company in an industry and then use a series of small acquisitions of competitors and companies in adjacent markets, each falling below the HSR reporting thresholds, to build the original acquisition target into a powerful market player.

As a result, many PE acquisitions are never reviewed by antitrust regulators and are not assessed by the FTC and DOJ for their impact on competition. Studies have shown that antitrust enforcement decreases

²⁷ Jeff Bailey, “Why It May Pay to Buy Before Selling the Firm,” *Wall Street Journal*, February 25, 2003, sec. Your Money, <https://www.wsj.com/articles/SB1046114229349870943>.

²⁸ Aslihan Asil, John Manuel Barrios, and Thomas Wollmann, “Misaligned Measures of Control: Private Equity’s Antitrust Loophole,” *Available at SSRN*, 2023.

²⁹ Cory Capps, David Dranove, and Christopher Ody, “Physician Practice Consolidation Driven By Small Acquisitions, So Antitrust Agencies Have Few Tools To Intervene,” *Health Affairs* 36, no. 9 (2017): 1556–63.

³⁰ 16 C.F.R. § 801.11(e) (allowing an entity that is its own ultimate parent entity and without a regularly prepared balance sheet to exclude funds used for the purpose of acquisitions).

³¹ Scheffler, Alexander, and Godwin, “Soaring Private Equity Investment In The Healthcare Sector: Consolidation Accelerated, Competition Undermined, And Patients At Risk.”

by 90% when deals are not reported.³² Most physician practice acquisitions are too small to require HSR reporting to antitrust authorities and, as a result, most go unreviewed.³³ For 2023, the HSR reporting threshold is \$111.4M (source: Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 87 Fed. Reg. 3541, January 24, 2022).

Finally, even for larger deals, the structure of PE funds and the way they hold assets can lead to underreporting. For example, a recent study found that PE-backed acquisitions are reported to antitrust authorities 25 percent less often than non-PE-backed acquisitions, even when controlling for the size of the transaction.³⁴ And, when PE deals are reported, the information included in the filing is often insufficient for authorities to understand the full competitive implications of the deal, again because of how PE funds are structured.³⁵

The FTC just issued a Notice of Proposed Rulemaking for a comprehensive revision of the HSR reporting form.³⁶ The proposed new HSR rules would address some of the gaps we highlight here, including requiring more extensive reporting about the complex business and financial relationships between various funds and subsidiaries that are often relevant to private equity transactions. It does not appear, though, that the proposed HSR rules would resolve the fact that many physician practice deals fall under reporting thresholds entirely. Where a company that has been engaging in a roll-up strategy makes an otherwise reportable acquisition, the proposed rules would trigger reporting of the prior acquisitions without any minimum price threshold. But that prior acquisition reporting is only triggered in the event of a reportable acquisition in the first place. Furthermore, the proposed HSR rules also would not address the “first-one-free” reporting gap that is often used by private equity funds.

D. SITUATING OUR WORK IN THE EXISTING LITERATURE

A growing body of empirical work has confirmed reasons why enforcers and policymakers should be concerned about the role of PE in healthcare provider markets. Since the 2021 report, the body of empirical work in this area has grown. Overall, it provides empirical evidence that PE investment in healthcare provider practices is consistently associated with higher prices, the most common measure studied. Other studies have also measured impact on utilization and expenditures, and found increases in each. Quality as an outcome has not been studied in depth. A large body of legal scholarship on healthcare markets and competition is also relevant to this work.

PE acquisitions in healthcare provider markets raise concerns about what antitrust scholars have deemed “stealth acquisitions,” that is mergers and acquisitions with anticompetitive effects that are not being barred by antitrust enforcers because they take place under the oversight radar.³⁷ The PE “roll up” and

³² Asil, Barrios, and Wollmann, “Misaligned Measures of Control”; Thomas G. Wollmann, “Stealth Consolidation: Evidence from an Amendment to the Hart-Scott-Rodino Act,” *American Economic Review: Insights* 1, no. 1 (June 2019): 77–94, <https://doi.org/10.1257/aeri.20180137>; Thomas G. Wollmann, “How to Get Away with Merger: Stealth Consolidation and Its Effects on US Healthcare,” Working Paper, Working Paper Series (National Bureau of Economic Research, May 2020), <https://doi.org/10.3386/w27274>.

³³ Capps, Dranove, and Ody, “Physician Practice Consolidation Driven By Small Acquisitions, So Antitrust Agencies Have Few Tools To Intervene.”

³⁴ Asil, Barrios, and Wollmann, “Misaligned Measures of Control.”

³⁵ Asil, Barrios, and Wollmann.

³⁶ Federal Trade Commission, “Premerger Notification; Reporting and Waiting Period Requirements: Notice of Proposed Rulemaking” (Washington, DC: Federal Trade Commission, June 27, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/p239300_proposed_amendments_to_hsr_rules_form_instructions_2023.pdf.

³⁷ Gaynor, “What to Do about Health-Care Markets?”

“buy-and-build” strategies are part of a broader category of “serial acquisitions,” wherein significant, cumulative anticompetitive effects result from a series of related mergers, each of which is too insignificant to trigger antitrust scrutiny in isolation.

Recent trends in PE acquisitions also must be understood in the context of concentration of healthcare markets at every level—from insurance, to hospitals, to PBMs, to pharmaceuticals. Growing concerns around interlocking directorates and common ownership,³⁸ both of which extend well beyond PE, also factor into broader competition concerns.

Within healthcare law and policy, scholars also have documented and analyzed trends toward the corporatization of medicine, of which PE is a part.³⁹ PE has also been dubbed a “divining rod for market failure,” as PE firms appear particularly adept at exploiting loopholes and arbitrage opportunities where they exist.⁴⁰

Finally, policymakers and activists have raised a wide array of concerns about private equity—such as gaming of reimbursement formulas or siphoning off assets from acquired companies—many of which, though troubling, are unrelated to competition concerns or the impact of PE on market competitiveness.

This report fills a gap in the literature by asking not just whether PE acquisitions of physician practices have negative impacts, but asking whether those negative impacts are attributable to competition concerns. We build on existing empirical literature, confirm prior findings of price and expenditure impacts from PE acquisitions of physician practices and extend them to a wider range of specialties. We also go beyond the existing literature by bringing focus to local market shares controlled by private equity and by examining how price and expenditure impacts vary in markets where PE firms acquire a competitively significant market share, i.e., over 30%. We find that increases in prices and expenditures associated with PE acquisitions are highest when a PE firm controls a competitively significant share of a local market. We focus on market shares because high market shares and concentrated markets are less conducive to competitive outcomes.

This report will help provide much needed insights and point the way toward future policy steps to address PE in healthcare provider markets, particularly for policymakers concerned about competition.

³⁸ Eric A. Posner, Fiona M. Scott Morgan, and E. Glen Weyl, “A Proposal to Limit the Anticompetitive Power of Institutional Investors,” *Antitrust Law Journal* 81, no. 3 (2017): 669–728; Menesh S. Patel, “Common Ownership, Institutional Investors, and Antitrust,” *Antitrust Law Journal* 82, no. 1 (2018): 279–334.

³⁹ Erin C. Fuse Brown and Mark A. Hall, “Private Equity and the Corporatization of Health Care,” *Stanford Law Review* 76 (2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4373557.

⁴⁰ Erin C. Fuse Brown et al., “Private Equity Investment as a Divining Rod for Market Failure: Policy Responses to Harmful Physician Practice Acquisitions” (Los Angeles, CA: USC-Brookings Schaeffer Initiative for Health Policy, October 2021), <https://www.brookings.edu/wp-content/uploads/2021/10/Private-Equity-Investment-As-A-Divining-Rod-For-Market-Failure-14.pdf>.

III. PRIVATE EQUITY'S MARKET SHARE IN MANY LOCAL PHYSICIAN PRACTICE MARKETS IS HIGH AND INCREASING

Several studies have documented acquisitions of physician practices by private equity firms, often measuring penetration as the share of physicians by specialty working for organizations owned by a private equity firm.⁴¹ The most dramatic finding is from Ivy Clinician's February 2023 study, which found that private equity firms owned emergency medicine physician staffing companies that staffed 25% of the emergency departments in the United States as of December 2022.⁴² In a broader study, Singh and colleagues measured penetration of private equity within six specialties across the United States as of 2019, finding the following nationwide penetrations ordered from high to low: dermatology (7.5%), gastroenterology (7.4%), urology (6.5%), ophthalmology (5.1%), obstetrics/gynecology (4.7%), and orthopedics (1.9%).⁴³ While these nationwide penetration rates are important for identifying broad trends, we focus on PE shares in local markets, because this is where most competition for physician services occurs.

We report the major PE firms that have been acquiring physician practices from 2012 to 2021, including the largest deals. Next, we present PE activity by metropolitan statistical areas (MSA)—a proxy for a local physician specialty market—focusing on MSAs in which a single private equity firm had greater than 30% by the number of full-time-equivalent physicians for one or more of the 10 specialties we studied: cardiology, dermatology, gastroenterology, obstetrics/gynecology, oncology, ophthalmology, orthopedics, primary care, radiology, and urology. The 30% market share threshold is based on thresholds embedded in antitrust analysis and precedent.⁴⁴ We then report market share statistics in these MSAs for 10 physician specialties. For MSAs that reached the 30% threshold, we also report trends in the number of MSAs by specialty that reached this threshold.

Data on acquisitions of physician practices by private equity firms were obtained from Pitchbook, the leading provider of data on private equity deals. Those deals were linked to physician practices in OneKey and SK&A Office Based Physician Database, two physician databases provided by IQVIA. OneKey, which is an updated version of SK&A that combines additional sources of physician data (e.g., from IMS Health and Healthcare Data Solutions) was used for 2020-2021, and SK&A was used for 2012-2019. The data contains each physician's specialty; market shares by specialty were calculated using office-based physicians, so physicians working solely in hospitals were excluded. For the 10 specialties we examined, almost all of these physicians have an office presence. These IQVIA databases have been used in prior

⁴¹ Adelman, "2023 State of the Emergency Medicine Employer Market"; Yashaswini Singh et al., "Geographic Variation in Private Equity Penetration Across Select Office-Based Physician Specialties in the US," *JAMA Health Forum* 3, no. 4 (2022): 1-4; Brill et al., "Private Equity in Ophthalmology"; Mark Gilreath et al., "Gastroenterology Physician Practice Management and Private Equity: Thriving in Uncertain Times," *Clinical Gastroenterology and Hepatology* 19, no. 6 (2021): 1084-87, <https://doi.org/10.1016/j.cgh.2021.03.015>; James Nie et al., "Urology Practice Acquisitions by Private Equity Firms from 2011-2021," *Urology Practice* 9, no. 1 (2022): 17-24, <https://doi.org/10.1097/UPJ.0000000000000269>; Chen et al., "Private Equity in Ophthalmology and Optometry."

⁴² Adelman, "2023 State of the Emergency Medicine Employer Market."

⁴³ Singh et al., "Geographic Variation in Private Equity Penetration Across Select Office-Based Physician Specialties in the US."

⁴⁴ John J. Miles, "Analyzing Hospital Mergers-- Coordinated Effects," in *Health Care and Antitrust Law* (Thomas Reuters, 2021); John J. Miles, "Elements of a Section 1 Violation - Unreasonably Anticompetitive Effect - The Rule of Reason," in *Health Care and Antitrust Law* (Thomas Reuters, 2021); John J. Miles, "Monopoly Power," in *Health Care and Antitrust Law* (Thomas Reuters, 2021); John J. Miles, "Dangerous Probability of Success," in *Health Care and Antitrust Law* (Thomas Reuters, 2021).

studies analyzing physician practices.⁴⁵ That said, the IQVIA databases—similar to all physician databases that aim to report the organizations that physicians practice in—have limitations because of the complexity of tracking physicians who change practices, including those that practice in multiple organizations.⁴⁶

For the 10 physician specialties examined in this report, Table 1 shows the top private equity firms by number of physician practice deals in the United States from 2012 to 2021. One deal may include more than one physician practice, and practices may have more than one site. During this period, two firms, Shore Capital Partners and Audax Group, had the largest number of deals (134 and 113, respectively). The Audax Group has the most assets under management, with \$16 billion as of June 15, 2022.

Table 1: Top Private Equity Firms by Number of Physician Practice Deals, 2012-2021

PE Firm	Deals	Dry Powder (\$M)	AUM (\$M)	Specialty
Shore Capital Partners	134	767	3,000	Multiple
Audax Group	113	13,212	16,000	Multiple
Webster Equity Partners	84	2,637	7,035	Multiple
Waud Capital Partners	63	352	4,082	Multiple
Chicago Pacific Founders	60	903	2,706	Multiple
AEG Vision	58	N/AV	N/AV	Ophthalmology
Riata Capital Group	58	134	543	Multiple
Advanced Dermatology and Cosmetic Surgery	43	N/AV	N/AV	Dermatology
Harvest Partners	38	6,278	19,021	Multiple
LLR Partners	38	978	4,593	Management

N/AV: not available

Dry Powder: amount of capital a private equity firm has on hand to make investments as of June 15, 2022.

AUM: assets under management, a measure of the total value of the companies in a private equity firm’s portfolio as of June 15, 2022.

Sources: Authors’ analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

⁴⁵ Ola A. Abdelhadi et al., “Private Equity Control of Physician Specialty Markets: New Evidence of Increased Acquisitions and Market Shares,” *Submitted*, 2023; Singh et al., “Geographic Variation in Private Equity Penetration Across Select Office-Based Physician Specialties in the US”; Taressa K. Frazee et al., “Configuration and Delivery of Primary Care in Rural and Urban Settings,” *Journal of General Internal Medicine* 37 (2022): 3045–53; Fulton, “Health Care Market Concentration Trends in the United States: Evidence and Policy Responses.”

⁴⁶ Kristin A. Maurer et al., “Measuring Physician Practice Site Characteristics: A Comparison of Data from SK&A and a Practice Site Survey,” *Health Services Research* 56, no. 2 (2021): 334–40, <https://doi.org/10.1111/1475-6773.13601>; Catherine M. DesRoches et al., “The Results Are Only as Good as the Sample: Assessing Three National Physician Sampling Frames,” *Journal of General Internal Medicine* 30, no. Supplement 3 (2015): 595–601.

Table 2 shows the top 10 private equity deals by value of the physician practices acquired from 2012-2021. Three firms—Envision Healthcare, Team Health Holdings, LifePoint Health—had deals over \$2 billion, with the largest deal the acquisition of Envision Healthcare by Kohlberg Kravis Roberts (KKR).

Table 2: Top 10 Private Equity Deals by Value of Physician Practices, 2012-2021

Target Physician Firm	Year	Deal Value (\$M)	PE Firm(s)	Location
Envision Healthcare	2018	9,900	Kohlberg Kravis Roberts	Nashville, TN
Team Health Holdings	2017	6,100	Blackstone	Knoxville, TN
LifePoint Health	2018	5,600	Apollo Global Management	Brentwood, TN
LifePoint Health	2021	2,600	Apollo Global Management	Brentwood, TN
Cincinnati Eye Institute	2021	600	Eyecare Partners	Cincinnati, OH
Ardent Health Services	2015	475	Equity Group Investments	Nashville, TN
Forefront Dermatology	2016	450	OMERS Private Equity	Manitowoc, WI
U.S. Dermatology Partners	2016	323	ABRY Partners	Dallas, TX
US Anesthesia Partners Florida	2017	61	Berkshire Partners Heritage Group; U.S. Anesthesia Partners; Welsh, Carson, Anderson & Stowe	Jacksonville, FL
Dermatology and Skin Surgery Center	2017	51	Dermatologists of Central States; Sheridan Capital Partners	Battle Creek, MI

Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022. PitchBook data has not been reviewed by PitchBook analysts.

While private equity is active in acquiring practices in the vast majority of states, acquisitions have often been concentrated in particular local markets. We use metropolitan statistical areas (MSAs) as a proxy for local markets.⁴⁷ MSAs have been used to define physician markets in prior studies.⁴⁸

⁴⁷ Office of Management and Budget, "Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These Areas" (Washington, DC: Office of Management and Budget, March 6, 2020), <https://www.whitehouse.gov/wp-content/uploads/2020/03/Bulletin-20-01.pdf>.

⁴⁸ Fulton, "Health Care Market Concentration Trends in the United States: Evidence and Policy Responses"; Christopher S Brunt and John R Bowblis, "Health Insurer Market Power and Primary Care Consolidation," *Economics Letters* 125, no. 1 (2014): 61–65.

Figure 3 offers a visual comparison of the MSAs in which a single private equity firm possessed more than 30% market share in one or more physician specialties in an MSA in 2021, which totaled 108 MSAs (Figure 3B), or 28% of the 384 MSAs in the United States, versus the number of such MSAs in 2012 (Figure 3A). The growth in the number of such MSAs is apparent because in 2012, only a handful of MSAs reached this threshold. Figure 3 also shows a visual comparison of the MSAs in 2021 and 2012 in which a single private equity firm possessed more than 50% market share in one or more physician specialties (see Figures 3D and 3C, respectively). The list of MSAs that met these market share thresholds in 2021 can be found in Appendix D.

Figure 3: MSAs in which a Single Private Equity Firm Possesses More Than 30% or 50% Market Share of One or More Physician Specialties, 2012 and 2021

Figure 3A: >30%, 2012

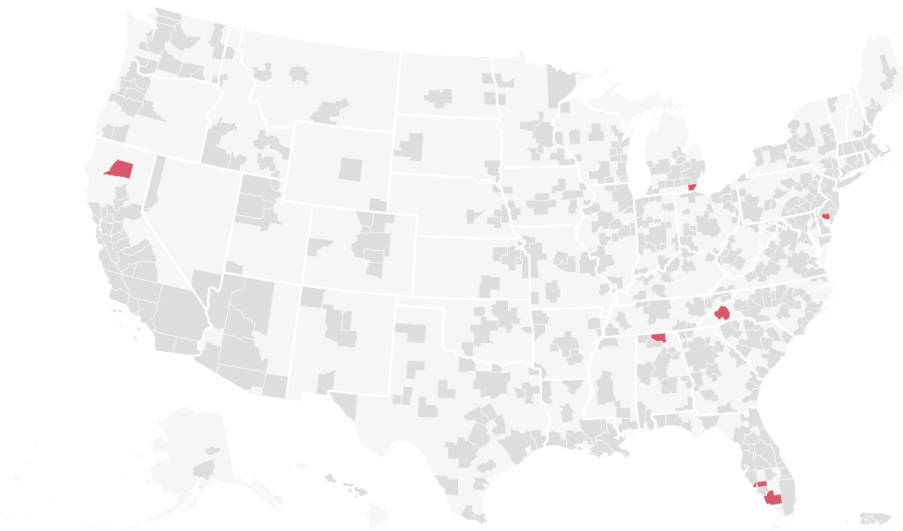


Figure 3B: >30%, 2021

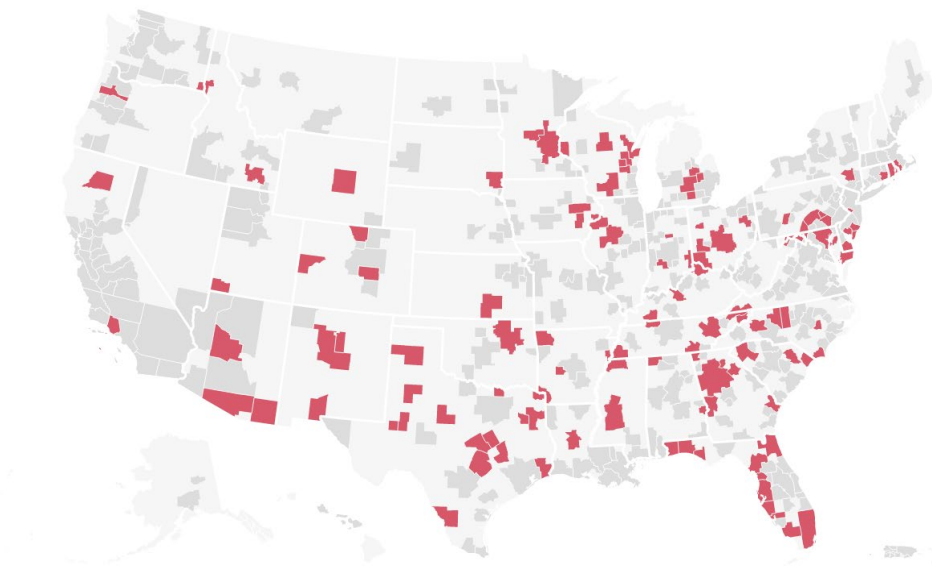


Figure 3C: >50%, 2012

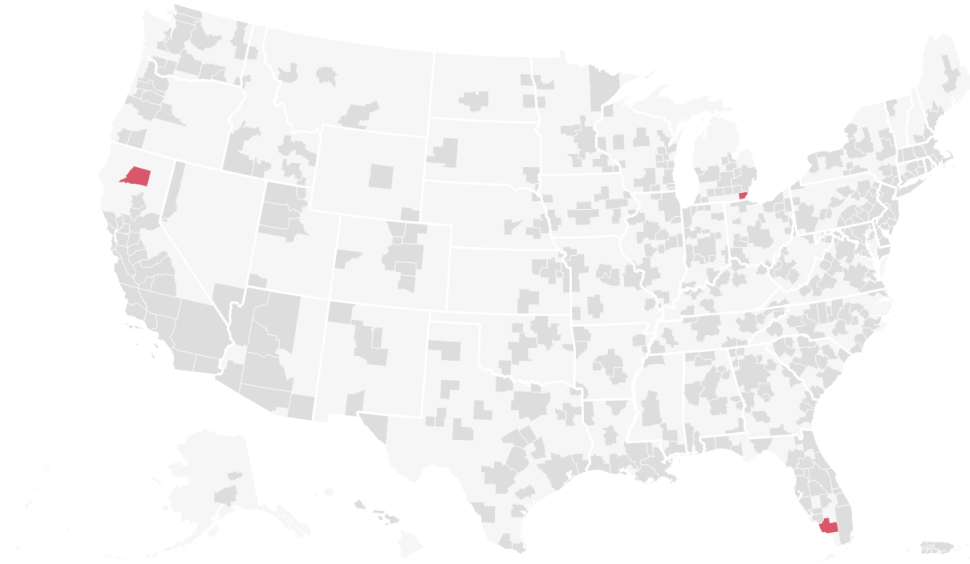
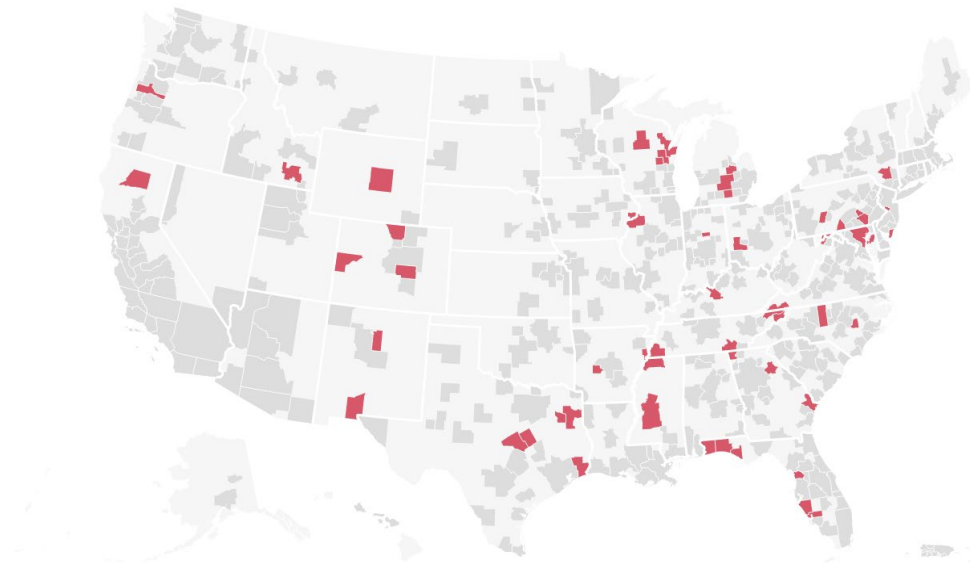


Figure 3D: >50%, 2021



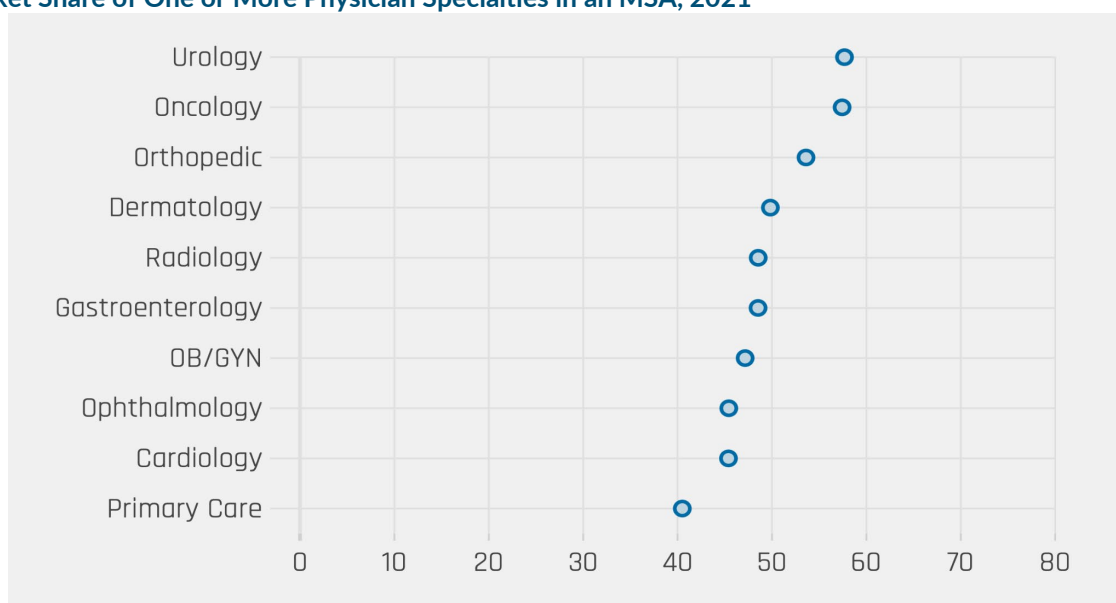
Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Notes: The names of the MSAs in 2021 with greater than 30% and 50% market share are available in Table D1 in Appendix D.

In Appendix A, we discuss in detail several illustrative examples of private equity acquisitions over the period that have resulted in high local market shares.

Figure 4 shows the full distribution of the single private equity firm market shares in these MSAs by specialty. The figure shows the mean values for market share of private equity firms that hold greater than 30% market share in one or more physician specialties. Among the specialties listed, urology and oncology have the highest mean market shares, with values of 58% and 57%, respectively. Orthopedics and dermatology follow closely with mean market shares of 54% and 50%. Radiology and gastroenterology have the same mean market shares of 49%. Obstetrics/gynecology, ophthalmology, and cardiology specialties have mean market shares of 47%, 45%, and 45%, respectively. Finally, the primary care specialty has a comparatively lower mean market share of 40%.

Figure 4: Distribution of the Market Share of a Single Private Equity Firm Possessing More than a 30% Market Share of One or More Physician Specialties in an MSA, 2021

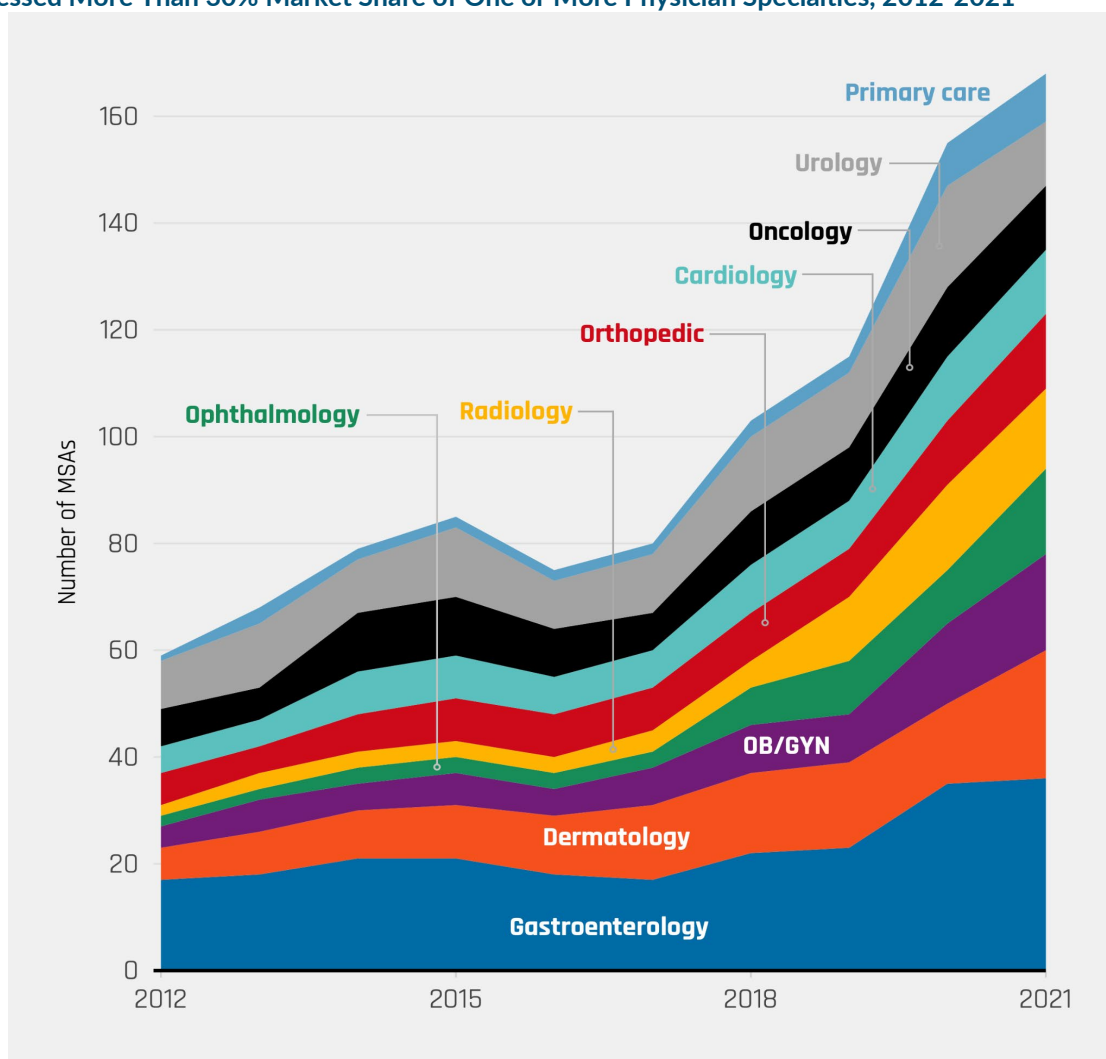


Notes: In 108 MSAs, a single private equity firm possesses more than 30% market share in one or more physician specialties in an MSA, totaling 168 [larger than 108] MSA-specialties because some of those firms had more than 30% market share in two or more specialties.

Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Figure 5 represents the trend in the number of MSAs with a single PE firm having a market share greater than 30% in one or more of the 10 physician specialties that we examined from 2012 to 2021. As of 2021, this threshold was met in 108 unique MSAs, but because more than one specialty met this threshold in some MSAs, a total of 168 MSA-specialties are shown in the figure. The number of MSAs meeting this threshold varied across specialties during this period. In dermatology, the trend shows a consistent increase from 1 to 24 MSAs from 2012 to 2021. Ophthalmology also exhibits a similar upward trend, growing from 0 to 16 MSAs during this period. Other specialties generally showed slight fluctuations with a general increase over time. Overall, the trend demonstrates an increase in the number of MSAs with a single PE firm holding a market share greater than 30% within these specialties across different MSAs.

Figure 5: Cumulative trend in the Number of MSAs by Specialty in which a Single Private Equity Firm Possessed More Than 30% Market Share of One or More Physician Specialties, 2012-2021



Notes: This figure is a cumulative MSA-specialty level figure. For example, in 2021 and in 108 MSAs, a single private equity firm possesses more than 30% market share in one or more physician specialties in an MSA, totalling 168 [larger than 108] MSA-specialties because some of those firms had more than 30% market share in two or more specialties. Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Notably, there are observable differences between the MSAs where a single PE firm has a market share over 30% than where a comparable market share is held by a non-PE owner. In particular, the MSAs with a high PE market share are more concentrated than the MSAs where a non-PE owner controls a high market share. The average HHI in MSAs where a PE firm has more than 30% market share exceeded the average HHI in MSAs where a non-PE firm had more than 30% market share (3516 vs. 2576). In addition, although not depicted in Figure 5, this same distinction holds for MSAs where a single PE firm has 50% market share versus MSAs where a non-PE owner holds a comparable share (4675 vs. 2531).

IV. THE IMPACT OF PRIVATE EQUITY ON PRICES IN PHYSICIAN MARKETS SUGGESTS ANTICOMPETITIVE EFFECTS

The increasing number of local markets where PE controls a large share of the providers begs the question of whether PE firms in those markets possess market power and, if so, whether this is impacting prices. Market power is impossible to measure directly, so instead we use a causal inference model to see whether we detect a difference in the effect of PE ownership on prices in the markets where PE has a high market share.

Given the significant penetration of private equity firms into physician specialty markets, several studies have estimated the impact of private equity acquisitions on physician prices, patient utilization, expenditures, quality, and workforce mix using causal-inference models.⁴⁹ Some of these studies focused on physician practices contracting with physician management companies, which are often owned by private equity firms; for simplicity, we refer to these studies as private equity acquisition studies.⁵⁰ In general, the studies found private equity acquisitions of physician practices were associated with price increases, but the increases were heterogeneous across specialties because each context is different and private equity firms' strategies are different. The largest price increase was found in neonatology practices with a 70% price increase three years after affiliation.⁵¹ For other specialties, the price increases were smaller, but still significant: 3-5% in dermatology,⁵² 11% across dermatology, gastroenterology, and ophthalmology,⁵³ 13-26% in anesthesiology.⁵⁴

A. RESEARCH QUESTIONS

We focused on two key research questions:

- What was the impact of a PE firm acquiring a physician practice on prices and expenditures per patient?
- Were there differing impacts on prices and expenditures per patient when a single PE firm had greater than 30% market share?

⁴⁹ Yu et al., "Physician Management Companies and Neonatology Prices, Utilization, and Clinical Outcomes"; La Forgia et al., "Association of Physician Management Companies and Private Equity Investment with Commercial Health Care Prices Paid to Anesthesia Practitioners"; Singh et al., "Association of Private Equity Acquisition of Physician Practices With Changes in Health Care Spending and Utilization"; Braun et al., "Private Equity In Dermatology"; La Forgia, "The Impact of Management on Clinical Performance"; Joseph Bruch et al., "Workforce Composition In Private Equity-Acquired Versus Non-Private Equity-Acquired Physician Practices," *Health Affairs*, 2023, 121-29, <https://doi.org/10.1377/hlthaff.2022.00308>.

⁵⁰ Yu et al., "Physician Management Companies and Neonatology Prices, Utilization, and Clinical Outcomes"; La Forgia et al., "Association of Physician Management Companies and Private Equity Investment with Commercial Health Care Prices Paid to Anesthesia Practitioners"; La Forgia, "The Impact of Management on Clinical Performance."

⁵¹ Yu et al., "Physician Management Companies and Neonatology Prices, Utilization, and Clinical Outcomes."

⁵² Braun et al., "Private Equity In Dermatology."

⁵³ Singh et al., "Association of Private Equity Acquisition of Physician Practices With Changes in Health Care Spending and Utilization."

⁵⁴ La Forgia et al., "Association of Physician Management Companies and Private Equity Investment with Commercial Health Care Prices Paid to Anesthesia Practitioners."

B. DATA AND METHODS

To examine the impact of private equity firms acquiring physician practices on prices and expenditures per patient, we examined healthcare claims from 2012 to 2021 from the Healthcare Cost Institute (HCCI) Commercial Claims Research Dataset, which includes claims from Blue Health Intelligence (i.e., participating Blue Cross Blue Shield [BCBS] company members),⁵⁵ Aetna, and Humana, totaling approximately 55 million lives per year from employer-sponsored plans.⁵⁶ HCCI claims data has been used in prior studies that analyzed physician prices.⁵⁷

The two dependent variables in our models were (1) the average price at a practice and (2) expenditures per patient at a practice. Prices were calculated using the professional claims in HCCI. We calculated the average price per claim at a practice in a particular year as the total allowed amount of all professional claims divided by the number of professional claims. Expenditures per patient were calculated as the total allowed amount of all professional claims divided by the number of patients.

To estimate these impacts, we use state-of-the-art causal inference difference-in-differences and event study models.⁵⁸ In these models, the treatment group consists of physician practices acquired by private equity firms from 2015 to 2021, and the comparison group consists of matched control independent physician practices that remained independent from 2012-2021. Treated practices were matched to control practices using 5:1 caliper matching on number of patients, the average Charlson Comorbidity Index of the practice's patients, as well as MSA-level measures of population, median household income, uninsured rate, and unemployment rate in the year prior to any acquisition (2014). Notably, matching on practices' average Charlson Comorbidity Indices should ensure that treated practices are matched to control practices with a similar complex patient population.

We estimated Equation 1, a difference-in-differences model in which physician price is the outcome variable; the model for expenditures per patient is similar. The parameter of interest is ϕ , in which j measures the time in years since the acquisition, and this difference-in-differences parameter estimates how the difference in physician prices changed between treated and comparison practices after the PE acquisition relative to the difference in prices prior to acquisition. Because practice (α_i) and year (τ_t) fixed effects are included, the model controls for differences in prices between treated and comparison physician practices as well as secular price trends that affect both groups, enabling a causal estimate.

$$\ln(\text{price}_{irt}) = \phi \text{PostPE}_{i,t \geq m(i)+j} + \alpha_i + \tau_t + \varepsilon_{irt} \quad (1)$$

In Eq (1), i indexes physician practices, r indexes regions (i.e., metropolitan statistical areas (MSAs)), and t indexes years. The dependent variable (price) is the natural log of the average price; $\text{PostPE}_{i,t \geq m(i)+j}$ is an indicator for whether physician practice i belongs to the treatment group in the relevant years, and $m(i)$

⁵⁵ Anthem-owned BCBS company members do not participate in Blue Health Intelligence.

⁵⁶ Health Care Cost Institute, HCCI's 2.0 Commercial Claims Research Dataset (Washington, DC: Health Care Cost Institute, 2021), https://healthcostinstitute.org/images//Health_Care_Cost_Institute_-_2dot0_Dataset_Overview_2021.pdf.

⁵⁷ Braun et al., "Private Equity In Dermatology"; Richard M. Scheffler and Daniel R. Arnold, "Insurer Market Power Lowers Prices in Numerous Concentrated Provider Markets," *Health Affairs* 36, no. 9 (2017): 1539–46.

⁵⁸ Jonathan Roth et al., "What's Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature" (arXiv, January 9, 2023), <https://doi.org/10.48550/arXiv.2201.01194>; Clément de Chaisemartin and Xavier D'Haultfoeuille, "Two-Way Fixed Effects and Differences-in-Differences with Heterogeneous Treatment Effects: A Survey," Working Paper, Working Paper Series (National Bureau of Economic Research, 2022), <https://doi.org/10.3386/w29691>.

denotes the year the physician practice was acquired by a PE firm. We estimated Eq (1) separately for the 10 specialties discussed in the previous section. We then estimated a two-way fixed effects (TWFE) event study version of Eq (1) for each specialty. The event study version is identical to Eq (1) except for the following replacement: $\sum_{j=-5}^5 \phi_j PostPE_{i,t=m(i)+j}$ replaces $\phi PostPE_{i,t \geq m(i)+j}$.

In the event study model, the parameters of interest are ϕ_j , in which j measures the time in years since the acquisition, and these difference-in-differences parameters estimate how the difference in practice prices changed between treated and comparison practices in year j relative to the year prior to when physician practices were acquired ($j = -1$, the reference period). Recent literature has shown TWFE estimates to be biased in the context of staggered interventions and treatment heterogeneity. Hence, we also used Sun & Abraham's (2021) interaction-weighted estimator to calculate a "cohort average treatment effect on the treated group" (CATT) for each group-year, where groups are defined by units that are treated in the same year.⁵⁹ All the results we present are based on the Sun & Abraham (2021) versions of our difference-in-differences and event study models.

Finally, we conducted subgroup analyses that examined the price and expenditure effects in the MSAs where the PE-acquired practices had the largest market shares. Specifically, we only considered practices owned by a single PE firm that had greater than 30% market share in 2021 as treated. We hypothesized that these practices would have larger price and expenditure per patient increases on average relative to matched controls due to the large share controlled by the PE firm and the concentration in the markets in which they operate.

C. RESULTS

1. 2012-2021 Price Trends – Private Equity Acquired Practices vs Matched Control Practices

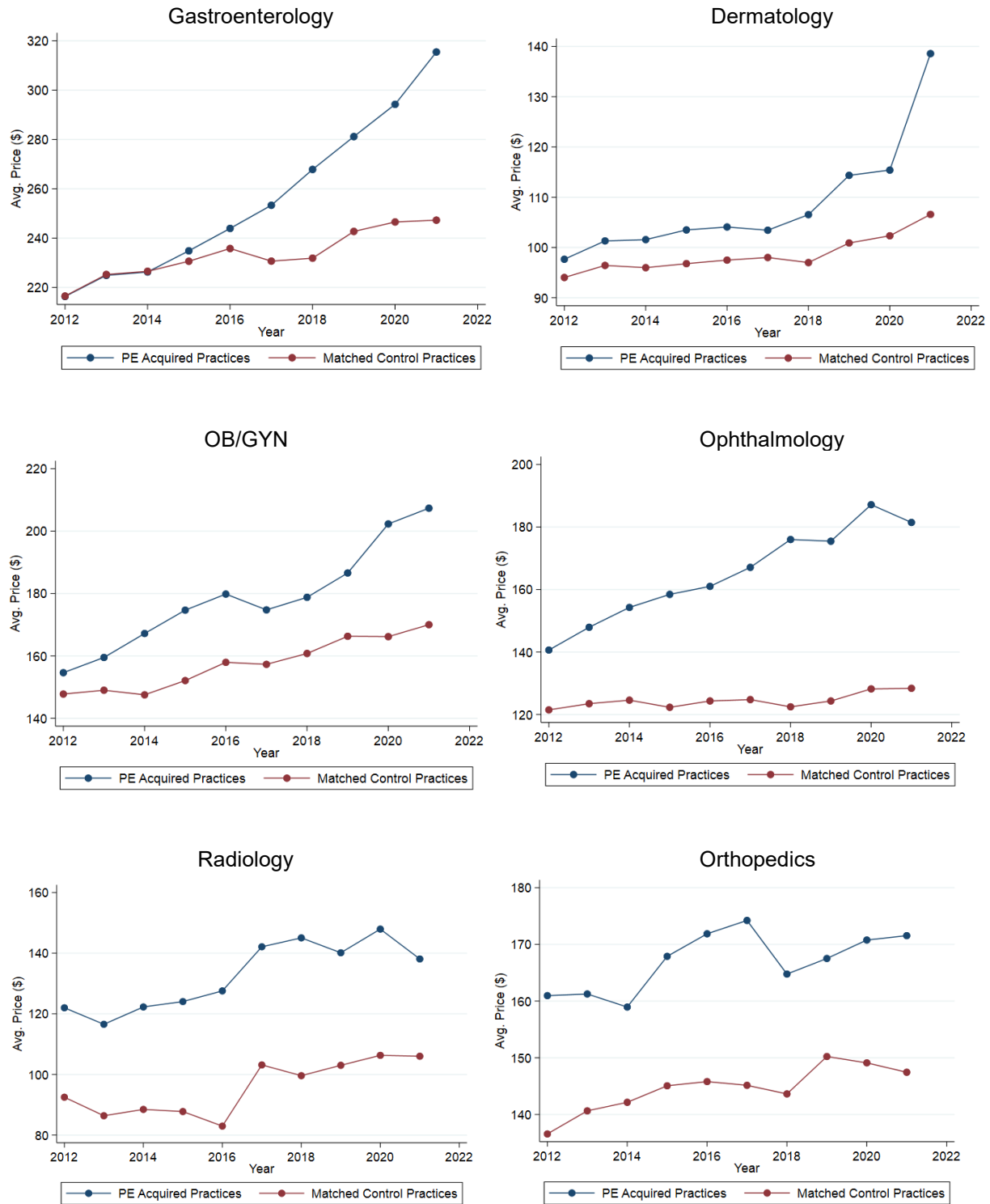
Figure 6 shows average unadjusted prices for treated and matched control physician practices for 10 specialties across all MSAs. The specialties are listed in order from the specialty that had the greatest number of MSAs in 2021 in which a single PE firm had greater than 30% market share (gastroenterology, 36 MSAs) to the least (primary care, 9 MSAs). Practice-year level prices are calculated by dividing the total allowed amount of all professional claims by the number of professional claims. These practice-year level prices are then weighted by each practice's mean number of patients over the study period to create the points shown in the figure. As a reminder, all treated practices were treated at some point between 2015 and 2021, and in the figure are included in the treated group even in years prior to being acquired.

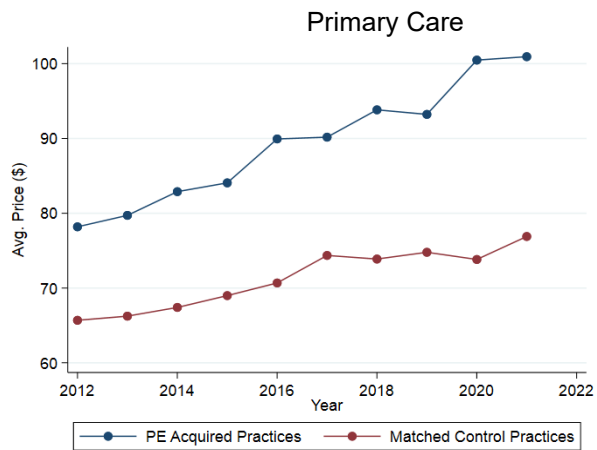
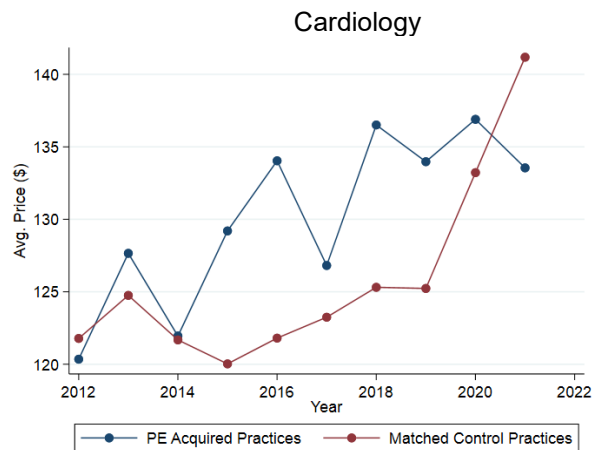
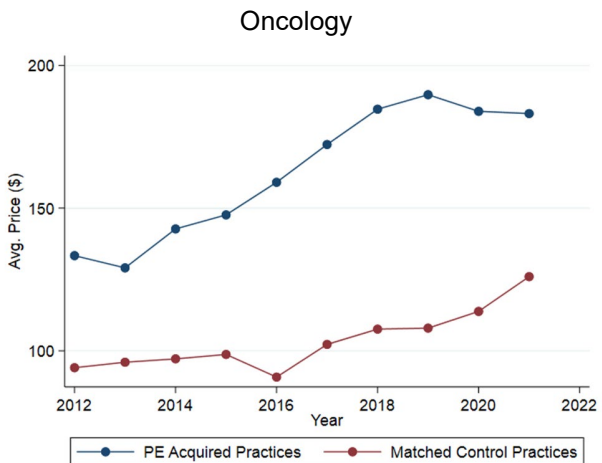
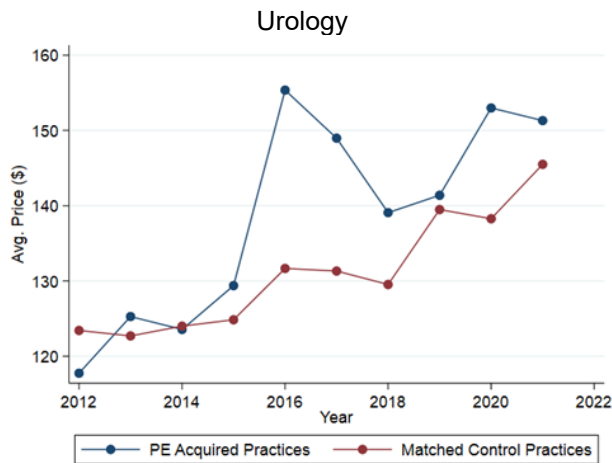
The graphs in the figure hint at our regression results. Prior to any regression adjustments, it is clear that the prices of PE acquired gastroenterology practices increase much faster than the price of matched control gastroenterology practices. This is also clearly the case for dermatology, OB/GYN, and ophthalmology. For the other specialties it is more difficult to determine if the prices of PE-acquired

⁵⁹ Liyang Sun and Sarah Abraham, "Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects," *Journal of Econometrics*, Themed Issue: Treatment Effect 1, 225, no. 2 (December 1, 2021): 175-99, <https://doi.org/10.1016/j.jeconom.2020.09.006>.

practices were increasing faster than their matched control counterparts from the raw price trends alone. Additionally, there is no clear case of matched control prices outpacing PE-acquired practice prices.

Figure 6: Physician Prices for 10 Specialties, 2012-2021





Notes: The specialties are listed in order from the specialty that had the greatest number of MSAs in 2021 in which a single PE firm had greater than 30% market share (gastroenterology, 36 MSAs) to the least (primary care, 9 MSAs). Practice-year level prices are calculated by dividing the total allowed amount of all professional claims by the number of professional claims. These practice-year level prices are then weighted by each practice's mean number of patients over the study period to create the points shown in the figure. All treated practices are treated at some point between 2015 and 2021 and are included in the treated group even in years prior to being acquired.

Source: Authors' analysis of claims from HCCI Commercial Claims Research Dataset

2. Regression Results

Table 3 presents the percent changes implied by the estimated coefficients from our difference-in-differences price and expenditure per patient models. Again, the specialties are listed in order from the specialty that had the greatest number of MSAs in 2021 in which a single PE firm had greater than 30% market share (gastroenterology, 36 MSAs) to the least (primary care, 9 MSAs). The value in Column A of the first row of results shows that prices of gastroenterologists acquired by PE increased by 14.0% ($p < 0.001$) relative to matched control gastroenterology practices during our study period. Overall, PE acquired practices for 8 of the 10 specialties we analyzed -- gastroenterology (14.0%: CI: 7.9% to 20.4%), dermatology (4.0%: CI: 1.0% to 7.1%), OB/GYN (8.8%: CI: 3.8% to 14.0%), ophthalmology (8.7%: CI: 5.1% to 12.3%), radiology (8.2%: CI: 0.8% to 16.1%), orthopedics (7.1%: CI: 2.2% to 12.3%), oncology (16.4%: CI:

5.5% to 28.4%), and primary care (4.1%: CI: 1.3% to 7.0%) -- had statistically significant ($p < 0.05$) price increases relative to matched control practices.⁶⁰

Our analysis of the OneKey Physician Database provided by IQVIA found that 108 MSAs had a single PE firm with greater than 30% market share in terms of full-time equivalent physicians in one or more physician specialties in 2021, totaling 168 MSA-specialties due to the MSAs in which more than one specialty met this criterion (see Figure 4). Table 3 column B presents the price percent changes when only practices in MSAs that had a PE firm with greater than 30% market share are considered treated. The estimated price increase was statistically significant for three specialties: gastroenterology at 18.2% (CI: 7.8% to 29.6%), OBGYN at 16.3% (CI: 9.9% to 23.1%), and dermatology at 13.3% (CI: 3.1% to 24.5%). Because the number of the MSAs with a single PE firm with greater than 30% market share in a particular specialty is relatively small, these confidence intervals were wide; however, the high price effect point estimates are concerning. When the price effects from these MSAs were isolated (column B) and compared to all MSAs (column A), the magnitudes of point estimates (i.e., the price effect estimate) were higher: 18.2% vs. 14.0% for gastroenterology, 13.3% vs. 4.0% for dermatology, and 16.3% vs. 8.8% for OB/GYN. Although the price effects within the three pairs are not statistically different from each other, partially because of small sample sizes, the size of the price increases in markets where a single PE firm controls a large share of the market is consistent with idea that there is a higher potential of a PE firm exercising market power in these MSAs. Similarly, one reason that other specialties do not show a statistically significant price effect in column B is due to small sample sizes (e.g., primary care only had 9 MSAs where a PE firm had greater than 30% market share in 2021).

Table 3 column C presents the percent changes implied by the estimated coefficients from our expenditure per patient models. In 6 of 10 specialties, PE acquired practices had statistically significant relative expenditure per patient increases -- gastroenterology (16.4%: CI: 9.6% to 23.7%), dermatology (4.1%: CI: 0.5% to 7.8%), OB/GYN (10.5%: CI: 6.5% to 14.7%), ophthalmology (15.4%: CI: 9.6% to 21.4%), urology (8.5%: CI: 2.3% to 15.1%), and primary care (6.2%: CI: 1.7% to 10.9%). Generally, the expenditure per patient increases are of similar magnitude to the price increases. The exceptions to this rule are ophthalmology and urology where the relative increases in expenditures per patient are roughly double the relative prices increases (15.4% vs. 8.7% for ophthalmology, 8.5% vs. 4.2% for urology). For these two specialties the results imply a per patient utilization increase along with a price increase. Column D in Table 3 repeats the 30% market share exercise, but for expenditures per patient. The three statistically significant results are for urology, OB/GYN, and primary care. In each case expenditures per patient are roughly twice as high relative to control practices in MSAs where a PE firm has greater than 30% market share (18.9% vs. 10.5% for OB/GYN, 17.0% vs. 8.5% for urology, 12.6% vs. 6.2% for primary care).

⁶⁰ The 95% confidence intervals (CI) are symmetric around the point estimate in the natural log scale, but when the CI is transformed to a percent change, the CI is not exactly symmetric around the point estimate as a percent change. The transformation formula is $(\exp(\text{coefficient}) - 1) * 100$.

Table 3: Relative Physician Price and Expenditures per Patient Changes of PE Acquired Practices Relative to Matched Controls

Specialty	(A) Price	(B) Price (>30% market share MSAs)	(C) Expenditures per patient	(D) Expenditures per patient (>30% market share MSAs)
Gastroenterology	14.0%	18.2%	16.4%	14.9%
Dermatology	4.0%	13.3%	4.1%	15.0%
OB/GYN	8.8%	16.3%	10.5%	18.9%
Ophthalmology	8.7%	8.5%	15.4%	6.7%
Radiology	8.2%	1.5%	-1.8%	2.0%
Orthopedics	7.1%	9.7%	4.0%	6.8%
Urology	4.2%	9.3%	8.5%	17.0%
Oncology	16.4%	11.2%	10.8%	29.7%
Cardiology	8.7%	-2.7%	13.1%	-10.7%
Primary Care	4.1%	-3.4%	6.2%	12.6%

Notes: **Bold** indicates statistically significant at the $p < 0.05$ level. Only includes treated and control practices that matched using 5:1 caliper matching. The formula $(\exp(\text{coefficient}) - 1) * 100$ was used to convert the coefficients from the Sun & Abraham versions of our difference-in-differences regressions to the percentages in this table. The unit of analysis in the regressions is a practice. Source: Authors' analysis of data from HCCI Commercial Claims Research Dataset, OneKey and SK&A Office Based Physicians Database provided by IQVIA, and Area Health Resources File.

We have also prepared Sun & Abraham (2021) event study versions of these differences-in-differences analyses, which can be found in Appendix C.

D. IMPLICATIONS

The price results found in our regression models are consistent with prior studies that found that acquisitions of physician practices by PE firms were associated with price increases for physician services.⁶¹ We also found particularly large price increases in specialties when a single private equity firm had 30% or greater market share, suggesting that the price impact is partially explained by market power and, in particular, market dominance by private equity owners. We weren't able to obtain statistically significant results in all specialties, likely because of small sample sizes, but for those specialties where we do obtain results, those results are concerning.

However, it is also possible that market power is not the whole story when it comes to price effects. Other factors are also at play, and the market dynamics of each specialty merit separate consideration. For

⁶¹ Yu et al., "Physician Management Companies and Neonatology Prices, Utilization, and Clinical Outcomes"; La Forgia et al., "Association of Physician Management Companies and Private Equity Investment with Commercial Health Care Prices Paid to Anesthesia Practitioners"; Singh et al., "Association of Private Equity Acquisition of Physician Practices With Changes in Health Care Spending and Utilization"; Braun et al., "Private Equity In Dermatology."

instance, part of the price effect we observe could be driven by PE firms making investments that allow them to perform a greater share of higher-cost services that naturally earn higher prices. There may also be characteristics of some specialty markets that curtail the exercise of market power, or insurer countervailing power, or limit the ability to raise prices, or make other strategies more profitable. The variation in these results might also indicate different strategies being pursued by the PE firms in these specialties. This would be consistent with the hypothesis that not all PE firms are created equal, and that some rely more heavily on management innovation and operational efficiencies and others on financial engineering.

The price increases that we found will eventually be paid by consumers in the form of higher health insurance premiums, which are already a significant share of an employee's income, particularly when cost sharing is incorporated. For example, a study found employees' insurance premium contribution plus the deductible as a share of median income increased from 9.1% to 11.6% from 2010 to 2020.⁶² When examining the full health insurance premium for a family plan—both the employer's and employee's contribution—premiums increased from \$13,871 to \$20,758 (or 49.7%) during this period.⁶³

V. IMMEDIATE POLICY STEPS AND MORE STUDY ARE BOTH NEEDED

Our research suggests that a mix of immediate policy steps and more study are needed. Returning to the three questions we set forth at the outset, our results allow us to offer some tentative answers:

1. **Do private equity acquisitions of physician practices lead to price increases?** The answer appears to be yes, in almost all specialties. We found increased prices associated with PE acquisitions in 8 of the 10 specialties we studied. The only two specialties without a statistically significant price increase—urology and cardiology—both have small sample sizes. We also see a sizable and growing share of PE acquisitions resulting in high market shares and highly concentrated markets, even within the context of highly concentrated healthcare provider markets generally.
2. **Do private equity firms face different competition incentives than other corporate owners, and do those incentives lead to differing competitive effects?** Maybe. Our results suggest that, at least in some specialties, some of the disparities that we and others observe in prices and expenditure associated with PE acquisitions are being driven by structure and ownership models in the market. In particular, the fact that the price effect observed for PE-acquired practices is so high for markets where a single PE firm controls a competitively significant market share suggests that such PE firms are acquiring and exploiting market power or bargaining power.
3. **How can the competition problems in physician practice markets caused or exacerbated by private equity best be addressed?** Based on the evidence to date, we suggest that a combination of immediate steps and further study is needed.

⁶² Sara R. Collins, David C. Radley, and Jesse C. Baumgartner, "State Trends in Employer Premiums and Deductibles, 2010-2020" (New York, NY: Commonwealth Fund, January 2022), https://www.commonwealthfund.org/sites/default/files/2022-01/Collins_state_premium_trends_2021_db_01-12-2022.pdf.

⁶³ The employer's contribution is important to incorporate because some of that contribution is borne by employees through lower wages.

Recommended immediate policy steps:

1. **Increase reporting and scrutiny of small physician practice acquisitions, particularly those by PE funds:** The most immediate competition issue arising from PE ownership of physician practices in our study is the ability of PE firms to amass market share in local provider markets without scrutiny from the antitrust agencies, which is also a concern when non-PE firms are acquiring physician practices.⁶⁴ Increased scrutiny of these transactions, whether PE or non-PE, is needed, but is currently hampered by a combination of limited reporting requirements and limited resources. Reporting and scrutiny of every merger and acquisition among physician practices is not realistic.

Instead, we would recommend focusing on transactions in already concentrated markets and on acquisitions by serial acquirers. For example, Congress could amend the HSR reporting rules to require reporting by any company that makes a series of healthcare provider acquisitions within a certain time period (say, 3 to 5 years) that cumulatively exceeds the current HSR reporting thresholds, even if those acquisitions are not part of a single transaction. Congress could also require reporting of any healthcare provider acquisition by a firm that already controls more than 30% of the providers in a given specialty in a given local market, regardless of the size of the transaction.

While the recently proposed HSR revisions from the agencies expand the prior reporting requirements associated with reportable transactions, what we propose would also trigger reporting of otherwise non-reportable transactions that are part of a pattern of acquisitions. Finally, Congress could authorize federal antitrust agencies to share information reported about physician practice acquisitions with antitrust authorities in the affected states, which would efficiently enable better review by state authorities without imposing additional reporting requirements on companies. The antitrust agencies' recently proposed HSR revisions would allow entities to voluntarily and selectively waive confidentiality to allow this sharing of information, but we recommend Congress go farther and mandate such sharing or, at least, vest such discretion with the agencies and not the parties.

2. **Adjust HSR reporting requirements to better capture competition concerns with PE and other non-traditional ownership structures:** The previous administration began, but never completed, a rulemaking to adjust HSR reporting requirements to better capture PE ownership concerns.⁶⁵ As discussed above, the FTC has recently revived and greatly expanded that effort. While this is a welcome development, Congress or the agencies should also consider including more than one measure that triggers reporting requirements, in addition to the current deal value measure. Other triggers could be the resulting market share or the resulting HHI, whereby if particular thresholds are reached due to a proposed acquisition, it would trigger reporting for a lower deal-value threshold.
3. **Establish rebuttable presumptions to apply to physician practice mergers and acquisitions:** Both state and federal antitrust enforcers lack the resources to challenge every locally or regionally problematic physician practice acquisition under current antitrust rules. Congress and state legislatures should consider either enacting rebuttable presumptions against physician practice mergers that meet certain

⁶⁴ Capps, Dranove, and Ody, "Physician Practice Consolidation Driven By Small Acquisitions, So Antitrust Agencies Have Few Tools To Intervene."

⁶⁵ "Premerger Notification; Reporting and Waiting Period Requirements, 85 Fed. Reg. 77,053 (Proposed December 1, 2020) (to Be Codified at 16 CFR Parts 801-803)." (n.d.).

measurable, objective criteria or developing streamlined procedures for evaluating and, if necessary, blocking such acquisitions.

4. **Mandate increased ownership transparency of all physician practices:** HHS should expand its mandatory ownership reporting requirements from nursing homes to all healthcare providers, including physicians, hospitals, and hospital systems. H.R. 3262, which was considered by the House Energy & Commerce Committee on May 17 of this year would have applied ownership disclosure requirements and reporting of ownership changes to hospitals, freestanding emergency centers, ambulatory surgical centers, physician practices with more than 25 physicians, physician practices owned by hospitals, insurance companies, and other entities. Because the bill would only apply to physician practices with more than 25 physicians, it would not have captured many of the PE transactions discussed in this report. A version of this bill with a lower size threshold, however, would both provide researchers and policymakers with better information and data to study the impacts of various ownership models (more on that below), and would also reduce information costs for patients. Finally, it would allow antitrust authorities better insight into patterns of acquisitions and the competitive landscape in local and regional healthcare markets.
5. **Lower barriers to entry in concentrated healthcare markets:** In already concentrated healthcare provider markets, the primary remedy is new entry. We recommend that various federal agencies take steps to facilitate entry. For example, the FTC's recent efforts to ban noncompetes has significant implications for healthcare provider markets. Banning overly broad noncompetes for doctors and nurses would eliminate a major barrier to new entry in provider markets. This barrier is particularly high when noncompetes are imposed by PE owners or by geographically-disperse healthcare systems, as such noncompetes can bar doctors and nurses from working for other companies across wide swaths of a region or the country.⁶⁶
6. **Close regulatory loopholes that distort competition in healthcare markets:** Whatever efficiencies PE owners bring to healthcare provider ownership, they also have proven adept at exploiting regulatory loopholes to enrich themselves without providing value to patients or competition. Closing these loopholes will both better align PE incentives and eliminate distortions in healthcare provider markets that extend beyond PE. Such measures should include expanding requirements for site-neutral payment models in Medicare; developing data analysis tools to identify and correct overbilling and upcoding; banning anticompetitive contracting practices such as anti-tiering and anti-steering clauses; and increasing transparency on hospital and provider pricing.⁶⁷ Congress should also close the carried interest tax loophole, which is problematic generally, but particularly exploited by PE funds. The recently-enacted No Surprises Act—which banned surprise billing and, thus, eliminated the exploitative and deceptive profit strategy of PE-owned Envision—demonstrates that closing loopholes is an effective strategy to combat exploitative healthcare business practices.
7. **Expand liability to PE funds for portfolio company misconduct.** While PE fund managers and investors reap most of the profits from PE owned companies, and play a significant role in directing the management of portfolio companies, they currently are largely immune from legal liability for misconduct, which falls entirely on the portfolio companies themselves. By increasing PE fund

⁶⁶ Erin C. Fuse Brown, "Comment Letter on Non-Compete Clause Rule - Notice of Proposed Rulemaking," 2023.

⁶⁷ Fuse Brown et al., "Private Equity Investment as a Divining Rod for Market Failure: Policy Responses to Harmful Physician Practice Acquisitions"; Fuse Brown and Hall, "Private Equity and the Corporatization of Health Care."

manager's liability for anticompetitive and other misconduct, including fraud, by their portfolio companies, Congress could provide a significant disincentive for PE funds to encourage or engage in anticompetitive strategies through their portfolio companies.

8. **Restructure Medicare payments to allow inflationary adjustments to the physician fee schedule.** Currently the physician fee schedule is the only fee schedule with budget neutrality provisions and the only fee schedule that does not keep up with medical inflation. Making practices better able to cover costs will make them less susceptible to acquisition.

Recommendations for further study:

1. **Build PE data sets:** One of the greatest challenges to addressing the impact of PE on competition in healthcare provider markets and on healthcare generally is the lack of comprehensive and accurate data on PE ownership and transactions. Like others seeking to understand the role of PE in these markets, we have relied on Pitchbook and other private databases, supplemented by intensive manual searching and supplementation. While such data is the gold standard in studying PE, it is woefully incomplete and imprecise. In the medium-to-long term, better databases on PE transactions and ownership of physician practices are needed and should be constructed from the mandated reporting recommended above.
2. **Develop mandatory reporting for effective healthcare quality measures:** Another challenge both to measuring the impact of PE and to properly aligning the incentives facing PE and other firms in the healthcare provider space is the lack of accurate, reliable, and consistent data on quality measures for the delivery of healthcare. Many such quality measures for physician services exist, but they are specialty specific, resulting in a lack of comprehensive data. In addition, participation in reporting programs is often voluntary and scattershot. Moreover, what data exists is often not made available to researchers. By imposing mandatory reporting of quality measures and making those data available to researchers, HHS could enable the study of the impact of PE and other healthcare ownership models on quality. Such data could also be used as a tool to better align financial incentives with the delivery of quality healthcare. PE firms often respond better to financial incentives than other owners, so better aligning these incentives has the potential to make PE ownership a driver of increased healthcare quality.
3. **Evaluate state-level policy innovations:** Some states have been active in regulating healthcare mergers and acquisitions,⁶⁸ including with an eye toward some of the concerns raised by PE entry into this space. We detail the landscape of state-level policy measures in Appendix B. In developing federal policy, these state-level interventions provide valuable data and learning about the effectiveness and administrability of various policies. States have been leading the charge on PE in healthcare, and developing innovative approaches to mitigate harmful PE practices. The best of those state-level policy solutions can be reinforced and expanded at the federal level. Federal authorities can build on state solutions to apply them to PE strategies implicating multiple states.
4. **Develop better models for assessing cross-market effects in healthcare mergers:** There is growing awareness that competition impacts from hospital and other healthcare mergers extend beyond local

⁶⁸ Brent D. Fulton et al., "States' Merger Review Authority Is Associated with States Challenging Hospital Mergers, but Prices Continue to Increase," *Health Affairs* 40, no. 12 (2021): 1836–45.

markets, and that the unique structure of healthcare insurance markets results in cross-market effects from acquisitions.⁶⁹ This is not an issue specific to private equity, but PE acquisition patterns implicate these concerns in an acute way. Competition policymakers must urgently develop appropriate models for understanding these effects and adjust merger policy accordingly.

5. **Investigate drivers of healthcare provider consolidation:** PE's consolidation and exploitation of market power in local healthcare provider markets that we document here is part of a larger trend toward consolidation in healthcare markets across the board. While a combination of greater scrutiny of transactions, closing loopholes being exploited by PE, and changing some of the specific incentives facing PE firms may lessen PE's outsized role in this consolidation, the overall consolidation is being driven by forces beyond PE.⁷⁰ Ultimately, greater understanding of, and tools to address, those drivers is needed. One potentially fruitful area to examine is the lack of effective means of downward pressure on healthcare prices. The third-party payer model means that insurers, employers, and the government must take a bigger role in this area. Whether due to insurer consolidation or other factors, these entities have not been effective at keeping provider prices in check, making healthcare providers attractive targets for those seeking profits. This project is beyond the scope of this report, but would be a rich and rewarding area for future study.
6. **Assess factors beyond market power driving price increases associated with private equity ownership:** Market power is clearly only part of the story when it comes to the impact of private equity investment on physician practices. More research is needed into all the various ways that private equity funds—their business models and the different incentives they face—are changing physician practice markets and the delivery of healthcare to patients. For example, more work is needed to understand PE's impact on staffing levels, volume of services delivered, value-based risk coding, upcoding, and Medicare strategies, all which may not be captured in commercial price trends, but each of which could lead to higher spending or poorer quality while generating more revenues for PE owners. Moreover, the impact of PE firms acquiring physician practices on quality needs to be studied across specialties using quality measures that are specific to each specialty.
7. **Examine the interplay between PE and macroeconomic factors:** PE investment models are highly dependent on interest rates and other macroeconomic factors; during periods of low interest rates, investors seeking high returns are drawn to PE. Low interest rates also enable the debt-driven investment strategies favored by PE. But there is also evidence that PE can provide an important source of funds in otherwise tight borrowing environments, and that PE might be most beneficial during such periods. More study and better understanding of this dynamic is needed.

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⁷⁰ Dranove and Burns, Big Med; Furukawa et al., "Consolidation Of Providers Into Health Systems Increased Substantially, 2016–18: Study Examines Provider Consolidation into Vertically-Integrated Health Systems."; Martin Gaynor, *Antitrust Applied: Hospital Consolidation Concerns and Solutions* (Washington, DC: U.S. Senate Subcommittee on Competition Policy, Antitrust, and Consumer Rights, 2021), https://www.judiciary.senate.gov/imo/media/doc/Gaynor_Senate_Judiciary_Hospital_Consolidation_May_19_2021.pdf.

VI. CONCLUSION

Private equity's role in healthcare provider markets is an ongoing and evolving challenge, and there are no signs that PE's interest in healthcare markets is waning. While the COVID-19 pandemic caused a temporary leveling off in overall PE investment, we have seen PE investments in physician practices spring back and resume their previous pace as the pandemic has abated. PE funds are still sitting on enormous stores of uninvested capital, physician practices have been financially and psychologically battered by the COVID-19 crisis, and all of the incentives that drive providers away from independent practice and toward other ownership models persist.

Now is the moment for policymakers to act. The steps already taken by policymakers are having considerable impact and should be continued. PE funds and their legal advisors are already responding to the scrutiny of PE by the antitrust agencies. Anecdotal reports suggest that PE firms are abandoning many of their most problematic deals because of this scrutiny. But more needs to be done if current progress is to be translated into lasting change.

One of the overarching challenges with regulating in this area is the dynamic nature of PE funds and their managers. For example, anecdotal reports suggest that PE funds are already reacting to crackdowns on interlocking directorates by shifting to appointing friendly proxies to boards instead of their own managers and employees. Similarly, knowing that roll-ups will be scrutinized for their cumulative effects, PE funds are structuring their transactions to get as many deals as possible done before attracting scrutiny from regulators. Accordingly, regulators should aim to get to the heart of the competitive problems posed by the rush of PE funds seeking to monetize medicine with little oversight, which is potentially putting patients at risk.

VII. BIBLIOGRAPHY

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APPENDIX A: ILLUSTRATIVE EXAMPLES OF PRIVATE EQUITY FIRMS IN SELECT MARKETS AND SPECIALTIES

This appendix examines four illustrative examples of private equity (PE) firms that have demonstrated significant activity within metropolitan statistical areas (MSAs) characterized by a high concentration of investments among various specialties. These examples include 1) a single firm with one specialty active in multiple MSAs; 2) a single firm with multiple specialties active in multiple MSAs; 3) a single MSA with multiple specialties with high market share from multiple firms; and 4) a spotlight on a single firm. By providing specific instances of PE involvement in specialties and highlighting MSAs where their activity is most pronounced, we aim to shed light on the implications of such acquisitions for the industry and the communities they serve.

Illustrative Example #1: OMERS Private Equity Ownership of Gastro Health

Single Firm Active in Multiple MSAs with One Specialty (Gastroenterology)

Background

OMERS Private Equity (OPE) is the private equity investment arm of the Ontario Municipal Employees Retirement System (OMERS), one of Canada's largest pension funds. OPE has been making private equity investments since 1987, and it has a global reach, with offices in Toronto, New York, London, and Sydney. Including total amounts invested and committed by OMERS, third-party capital, and realized and unrealized assets in CAD, they have \$23.2 billion under management.⁷¹

Active Markets⁷²

OMERS is involved in numerous healthcare endeavors, but their investment in gastroenterology and dominance with that specialty in three MSAs spread throughout the south (Greenville-Anderson-Mauldin, SC; Jackson, MS; and Miami-Fort Lauderdale-West Palm Beach, FL) stands out in the data. To illustrate the potential patient characteristics and needs in these markets, below are tables of the demographics for these MSAs, including their population size, age, and incomes.

⁷¹ OMERS, "Investments." Accessed May 30, 2023. <https://www.omersprivateequity.com/investments>.

⁷² Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Table A1: MSA 24860 (30-50%) - Greenville-Anderson-Mauldin, SC (2021)

	Population	Median Age	Population > 50 Years Old	Median Household Income	Persons Below the Poverty Line
Greenville-Anderson-Mauldin	940,774	38.9	37%	\$34,803	13.9%
South Carolina	5,190,705	40.2	39%	\$33,339	14.7%

Source: censusreporter.org⁷³

Table A2: MSA 27140 (30-50%) - Jackson, MS (2021)

	Population	Median Age	Population > 50 Years Old	Median Household Income	Persons Below the Poverty Line
Jackson	586,758	38.4	34%	\$54,123	18.7%
Mississippi	2,949,965	38.6	35%	\$48,716	19.4%

Source: censusreporter.org⁷⁴

Table A3: MSA 33100 (>50%) - Miami-Fort Lauderdale-West Palm Beach, FL (2021)

	Population	Median Age	Population > 50 Years Old	Median Household Income	Persons Below the Poverty Line
Miami-Fort Lauderdale-West Palm Beach	6,091,747	42	34%	\$63,814	13.3%
Florida	21,781,128	42.8	41%	\$63,602	13.1%

Source: censusreporter.org⁷⁵

Gastroenterology Transactions

Investment manager Abe M’Bodj wrote in 2017, “We are in the Golden Age of older rectums.”⁷⁶ While a colorful word choice, it is an accurate assessment of the market. This is partly because the Centers for Disease Control and Prevention lowered the recommended age at which patients are urged to begin routine screenings for colon cancer to 45. Additionally, by 2030, all Baby Boomers will be age 65 or older, and thus eligible for Medicare, along with all of their gastroenterology needs.⁷⁷

⁷³ Source: Authors’ analysis of censusreporter.org data, as of June 19, 2023.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Provident Healthcare Partners, “Gastro practices drawing attention from investors.” Provident Healthcare Partners, December 15, 2017, <https://www.providenthp.com/expertise/gastro-practices-drawing-attention-from-investors/>.

⁷⁷ America Counts Staff, “2020 Census Will Help Policymakers Prepare for the Incoming Wave of Aging Boomers,” Census.gov, December 10, 2019, <https://www.census.gov/library/stories/2019/12/by-2030-all-baby-boomers-will-be-age-65-or-older.html>.

Observation and study of private equity investment in gastroenterology should increase as transactions which occurred in 2022 begin to demonstrate effects and acquisitions continue. As previously discussed in this report, the prices of PE acquired gastroenterology practices that had more than 30% market share by 2021 increased by about 18% relative to matched control gastroenterology practices. When compared to other PE acquired gastroenterology practices across all MSAs, there was an 11% price increase.

In 2021 OMERS, with mezzanine financing from Penfund, acquired Gastro Health from Audax Private Equity with a \$900 million valuation. They have since helped Gastro Health grow into one of the largest gastroenterology platforms in the United States, with practices in Alabama, Florida, Maryland, Ohio, Virginia, and Washington. Additional details of OMER's Gastro Health acquisition from July 2021 through November 2022 are shown below.

Table A4: OMER Acquisitions under Gastro Health (July 2021-November 2022)

Companies	Add-on Platform	Add-on Sponsors	Deal Date	Deal Type	Deal Type 2
Gastroenterology Associates (Olympia)	Gastro Health	OMERS Private Equity, Penfund Management	18-Nov-2022	Buyout/LBO	Add-on
Springfield Gastroenterology	Gastro Health	OMERS Private Equity, Penfund Management	05-Oct-2022	Buyout/LBO	Add-on
Charlottesville Gastroenterology Associates	Gastro Health	OMERS Private Equity, Penfund Management	01-Sep-2022	Buyout/LBO	Add-on
Digestive Disorders Associates	Gastro Health	OMERS Private Equity	01-Jul-2022	Buyout/LBO	Add-on
Digestive Health Specialists	Gastro Health	OMERS Private Equity	03-Feb-2022	Buyout/LBO	Add-on
Greater Boston Gastroenterology	Gastro Health	OMERS Private Equity	03-Feb-2022	Buyout/LBO	Add-on
Middlesex Gastroenterology	Gastro Health	OMERS Private Equity	03-Feb-2022	Buyout/LBO	Add-on
Gastroenterology Associates of Pensacola	Gastro Health	OMERS Private Equity	31-Dec-2021	Buyout/LBO	Add-on
Digestive Care Center (Miami)	Gastro Health	OMERS Private Equity	01-Dec-2021	Buyout/LBO	Add-on
Gastroenterology Group	Gastro Health	OMERS Private Equity	01-Sep-2021	Buyout/LBO	Add-on
Gastro Health			01-Jul-2021	Buyout/LBO	Secondary Buyout

Source: Authors' analysis of PitchBook Data, Inc., as of June 12, 2023, courtesy of the Private Equity Stakeholder Project. PitchBook data has not been reviewed by PitchBook analysts.

Illustrative Example #2: Waud Capital Partners

Single Firm Active in Multiple MSAs with Multiple Specialties

Background

Founded in 1993, Waud Capital Partners is a private equity firm based in Chicago with approximately \$4.0 billion in total capital commitments.⁷⁸ The firm concentrates on the healthcare services and

⁷⁸ Waud Capital Partners, "Investing for Growth." Accessed May 23, 2023, <https://www.waudcapital.com/en/home>.

software/technology sectors and has completed over 400 investments since its inception. The firm employs an executive-led investment approach, researching promising sectors and partnering with experienced operators for each platform company. In the data, their ownership and activity within the specialties of orthopedics, dermatology, and gastroenterology stands out. They have taken extensive action to consolidate independent practices under national networks within these specialties while also pulling in additional service providers to support the specialty activities, such as technology platforms and specialty pharmacies.

Active Markets and Specialties⁷⁹

- **Orthopedics** - No market share above 30% in any MSA
- **Dermatology** - No market share above 30% in any MSA
- **Gastroenterology** - MSA 12420 (30-50%) - Austin-Round Rock, TX

Orthopedics: Over the past eight years, Waud Capital has been acquiring independent orthopedic and physical therapy rehab centers and merging them into one network called the Ivy Rehab Network. Founded in 2003, Ivy Rehab is a nationwide network of outpatient physical, occupational, speech therapy, and applied behavior analysis (ABA clinics).⁸⁰ Starting in 2018, many of these transactions included partnership with another PE firm, Leavitt Equity Partners, a value-add, healthcare focused private equity firm with over \$300 million in capital. Leavitt has had their own stake in Ivy Rehab since 2016.⁸¹ Details of Waud’s orthopedic acquisitions spanning April 2016 through November 2022 are below.

Table A5: Waud Capital Acquisitions under Ivy Rehab Network (April 2016-November 2022)

Companies	Add-on Platform	Add-on Sponsors	Deal Date	Deal Type	Deal Type 2
Excel Physical Therapy (Hackensack)	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	06-Feb-2023	Buyout/LBO	Add-on
Ivy Rehab Network			04-Oct-2022	Buyout/LBO	Secondary Buyout
Kids In Motion Pediatric Therapy Services	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	20-May-2022	Buyout/LBO	Add-on
MOST Physical Therapy	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	28-Mar-2022	Buyout/LBO	Add-on
Theraplay	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	19-Jul-2022	Buyout/LBO	Secondary Buyout
Back in Action Physical Therapy	Ivy Rehab Network	Waud Capital Partners	30-Nov-2021	Buyout/LBO	Add-on

⁷⁹ Sources: Authors’ analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

⁸⁰ Ivy Rehab Network, “Physical Therapy and Rehab Professionals.” Ivy Rehab, April 5, 2023. Accessed May 23, 2023, <https://www.ivyrehab.com>.

⁸¹ Leavitt Equity Partners, “Portfolio.” Accessed May 24, 2023, <https://leavittequity.com/portfolio/page/2/><https://leavittequity.com/portfolio/page/2/>.

The Central Orthopedic Group	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	30-Nov-2021	Buyout/LBO	Asset Acquisition
Elite Physical Therapy (US)	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	30-Sep-2021	Buyout/LBO	Add-on
Excel Physical Therapy (King of Prussia)	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	15-Sep-2021	Buyout/LBO	Add-on
Source Physical Therapy & Wellness	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	22-Jul-2021	Buyout/LBO	Add-on
The Training Room	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	26-Oct-2021		Add-on
PT1	Ivy Rehab Network	Waud Capital Partners	22-Jun-2021		Add-on
Sports Physical Therapy (Brooklyn)	Ivy Rehab Network	Waud Capital Partners	04-May-2021	Buyout/LBO	Add-on
Aquahab Physical Therapy	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	16-Mar-2021	Buyout/LBO	Add-on
Children's Center For Growth and Development	Ivy Rehab Network	Waud Capital Partners	02-Mar-2021	Buyout/LBO	Add-on
All-care Physical Therapy Center	Ivy Rehab Network	Waud Capital Partners	14-Feb-2020	Buyout/LBO	Add-on
Cleveland Physical Therapy Associates	Ivy Rehab Network	Waud Capital Partners	12-Feb-2020	Buyout/LBO	Add-on
Full Circle Physical Therapy	Ivy Rehab Network	Waud Capital Partners	02-Dec-2020	Buyout/LBO	Add-on
Community Physical Therapy	Ivy Rehab Network	Leavitt Equity Partners, Waud Capital Partners	31-May-2019	Buyout/LBO	Add-on
Progress Physical Therapy	Ivy Rehab Network	Waud Capital Partners	14-May-2019	Buyout/LBO	Add-on
Grand River Physical Therapy	Ivy Rehab Network	Waud Capital Partners	29-Jul-2019	Buyout/LBO	Add-on
Oakland Physical Therapy	Ivy Rehab Network	Waud Capital Partners	31-Mar-2019	Buyout/LBO	Add-on
Northport PT	Ivy Rehab Network	Waud Capital Partners	22-Feb-2019	Buyout/LBO	Add-on
The Physical Therapy & Wellness Institute	Ivy Rehab Network	Waud Capital Partners	01-Feb-2019	Buyout/LBO	Add-on
Physical Therapy Services	Ivy Rehab Network	Waud Capital Partners	19-Dec-2018	Buyout/LBO	Add-on
ProActive Physical Therapy	Ivy Rehab Network	Waud Capital Partners	18-Dec-2018	Buyout/LBO	Add-on
Mile Square Physical Therapy	Ivy Rehab Network	Waud Capital Partners	01-Dec-2018	Buyout/LBO	Add-on
Therapeutics Unlimited (3 Clinics)	Ivy Rehab Network	Waud Capital Partners	21-Nov-2018	Buyout/LBO	Add-on
Garden State Orthopaedic Associates (2 Clinics)	Ivy Rehab Network	Waud Capital Partners	26-Oct-2018	Buyout/LBO	Add-on
Peak Performance Physical Therapy		Leavitt Equity Partners, Waud Capital Partners	28-Sep-2018	Buyout/LBO	Add-on

Provere Physical Therapy (Tinton Falls)	IvyRehab Network	Waud Capital Partners	19-Jun-2018	Buyout/LBO	Add-on
Orthopedic Associates of Dutchess County		Leavitt Equity Partners, Waud Capital Partners	01-Jun-2018	Buyout/LBO	Add-on
PhysioFocus Orthopedic and Sports Therapy	Ivy Rehab Network	Waud Capital Partners	10-May-2018	Buyout/LBO	Add-on
Brighton Physical Therapy	Ivy Rehab Network	Waud Capital Partners	09-May-2018	Buyout/LBO	Add-on
Wallace & Nilan Physical Therapy	Ivy Rehab Network	Waud Capital Partners	01-Apr-2018	Buyout/LBO	Add-on
Generation Care	Ivy Rehab Network	Waud Capital Partners	10-Mar-2018	Buyout/LBO	Add-on
Fenton Fitness & Athletic Center	Ivy Rehab Network	Waud Capital Partners	03-Oct-2017	Buyout/LBO	Add-on
M&M Physical Therapy	Ivy Rehab Network	Waud Capital Partners	19-Sep-2017	Buyout/LBO	Add-on
Spine Options	Ivy Rehab Network	Waud Capital Partners	05-Sep-2017	Buyout/LBO	Add-on
DiSabatino Physical Therapy	Ivy Rehab Network	Waud Capital Partners	09-Aug-2017	Buyout/LBO	Add-on
Southeastern Physical Therapy For Kids	Ivy Rehab Network	Waud Capital Partners	01-Aug-2017	Buyout/LBO	Add-on
Northern physical therapy	Ivy Rehab Network	Waud Capital Partners	01-Jul-2017	Buyout/LBO	Add-on
West Physical Therapy	Ivy Rehab Network	Waud Capital Partners	02-Mar-2017	Buyout/LBO	Add-on
The Orthopedic Institute of New Jersey	Ivy Rehab Network	Waud Capital Partners	03-Oct-2016	Buyout/LBO	Add-on
Morris County Orthopedics	Ivy Rehab Network	Waud Capital Partners	11-Jul-2016	Buyout/LBO	Add-on
Ivy Rehab Network			01-Apr-2016	Buyout/LBO	Management Buyout

Source: Authors' analysis of PitchBook Data, Inc., as of June 12, 2023, courtesy of the Private Equity Stakeholder Project. PitchBook data has not been reviewed by PitchBook analysts.

Dermatology: Over the past seven years, Waud Capital has acquired independent dermatology offices and merged them under the umbrella of Adult & Pediatric Dermatology (now known as APDerm). The majority of these acquisitions were practices in Massachusetts (10 out of 11).⁸² Waud also acquired Apotheco Pharmacy Group in 2019. Apotheco is a nationwide dermatology pharmacy with 28 locations across 15 states.⁸³ Apotheco went on to merge with Chicago-based Skin Medicinals, a digital health platform focused on increasing access to medications and improving adherence.⁸⁴ These acquisitions gave Waud a stake in a pharmacy specializing in dermatological products which they then provided a technology platform to assist in medication deployment. This is all in addition to the practices owned under Adult & Pediatric Dermatology. Details of Waud's dermatology acquisitions spanning September 2017 through January 2023 are below.

⁸² APDerm, "Medical, Cosmetic & Surgical Dermatology - Treating Adults & Children." APDerm, November 29, 2022. Accessed May 25, 2023, <https://www.apderm.com>.

⁸³ Apotheco Pharmacy, "Dermatology Pharmacy Near Me." Apotheco Pharmacy. Accessed May 25, 2023, <https://www.apothecopharmacy.com/locations>.

⁸⁴ Skin Medicinals, "The Future of Dermatology is Now." Skin Medicinals. Accessed June 6, 2023, <https://www.skinmedicinals.com>.

Table A6: Waud Capital Acquisitions under Adult & Pediatric Dermatology (September 2017-January 2023)

Add-on Platform	Add-on Sponsors	Deal Date	Deal Type	Deal Type 2
Boston Center for Facial Rejuvenation	Adult & Pediatric Dermatology	01-Jan-2023		Add-on
Advanced Dermatology and Aesthetic Center	Adult & Pediatric Dermatology	10-Oct-2021	Buyout/LBO	Add-on
Skin Medicinals	Apotheco Pharmacy Group	02-Nov-2022	Buyout/LBO	Add-on
Dermcare Physicians & Surgeons	Adult & Pediatric Dermatology	12-Feb-2021	Buyout/LBO	Add-on
Dermatology Professionals (Rhode Island)	Adult & Pediatric Dermatology	20-Nov-2019	Buyout/LBO	Add-on
Boston Dermatology and Laser Center	Adult & Pediatric Dermatology	04-Jun-2019	Buyout/LBO	Add-on
Apotheco Pharmacy Group		01-Apr-2019	Buyout/LBO	
Associates in Dermatology	Adult & Pediatric Dermatology	15-Nov-2018	Buyout/LBO	Add-on
Mystic Valley Dermatology Associates	Adult & Pediatric Dermatology	15-Nov-2018	Buyout/LBO	Add-on
Dr. Deborah Spitz (Dermatology Practice)	Adult & Pediatric Dermatology	29-Sep-2018	Buyout/LBO	Add-on
Dr. Michael Rosenbaum (Dermatology Practice)	Adult & Pediatric Dermatology	30-May-2018	Buyout/LBO	Add-on
Dermatology Associates	Adult & Pediatric Dermatology	17-Apr-2018	Buyout/LBO	Add-on
Adult & Pediatric Dermatology		19-Sep-2017	Buyout/LBO	Recapitalization

Source: Authors' analysis of PitchBook Data, Inc., as of June 12, 2023, courtesy of the Private Equity Stakeholder Project. PitchBook data has not been reviewed by PitchBook analysts.

Gastroenterology: In 2018, one of the nation's largest independent gastroenterology practices, Texas Digestive Disease Consultants, announced a deal with Waud Capital to form The GI Alliance and expand by offering management services to other physicians.⁸⁵ At the time, the practice had 110 locations and nearly 700 independent gastroenterologists, mainly in Texas (but also operating in Arkansas, Arizona, Colorado, Florida, Illinois, Indiana, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, Utah, and Washington). The GI Alliance has grown to operate in a dozen states with more than 400 locations and is valued at \$2.2 billion (as of 2022).⁸⁶ In 2022 Waud Capital Partners sold their ownership of GI Alliance to a physician-led buyout and recap backed by Apollo Global Management.

While Waud no longer owns Texas Digestive Disease Consultants, they are still in the gastroenterology space through their acquisition at the end of 2021 of Gab Endoscopy Center in Texas. On May 9, 2022 they acquired Gastroenterology Consulting in Oregon and Digestive Health Specialists in Mississippi. Details of Waud's gastroenterology acquisitions and sales spanning April 2016 through May 2022 are below. These transactions do not include the sale to Apollo Global Management.

⁸⁵ GI Alliance. "TDDC Partners with Waud Capital & Forms the GI Alliance." GI Alliance, March 7, 2023, accessed June 14, 2023. <https://tddctx.com/texas-digestive-disease-consultants-partners-waud-capital-forms-gi-alliance/>

⁸⁶ GI Alliance. "GI Alliance Finalizes Physician-led Buyout and New Partnership with Apollo." GI Alliance, September 15 2022. Accessed June 6, 2023. <https://gialliance.com/gastroenterology-news/gi-alliance-finalizes-physician-led-buyout-and-new-partnership-with-apollo>

Table A7: Waud Capital Acquisitions under Texas Digestive Disease Consultants (April 2016-May 2022)

Add-on Platform	Add-on Sponsors	Deal Date	Deal Type	Deal Type 2
Digestive Health Specialists (Tupelo)		09-May-2022		Add-on
Gastroenterology Consulting		09-May-2022	Buyout/LBO	Add-on
Gastroenterology Consultants (Texas)	Texas Digestive Disease Consultants	05-May-2022	Buyout/LBO	Add-on
Digestive Health Specialists (Kansas)	Texas Digestive Disease Consultants	29-Apr-2022	Buyout/LBO	Add-on
Gab Endoscopy Center		31-Dec-2021	Buyout/LBO	Add-on
Denver Digestive Health Specialists	Texas Digestive Disease Consultants	27-Dec-2021	Buyout/LBO	Add-on
Digestive Disease Consultants	Texas Digestive Disease Consultants	27-Dec-2021	Buyout/LBO	Add-on
Washington Gastroenterology	Texas Digestive Disease Consultants	27-Dec-2021	Buyout/LBO	Add-on
GastroGroup & Endocenter	Texas Digestive Disease Consultants	13-Dec-2021	Buyout/LBO	Add-on
Hattiesburg GI Associates	Texas Digestive Disease Consultants	13-Dec-2021	Buyout/LBO	Add-on
East Valley Gastroenterology & Hepatology Associates	Texas Digestive Disease Consultants	07-Dec-2021	Buyout/LBO	Add-on
Gastroenterology Associates of Florida	Texas Digestive Disease Consultants	11-Oct-2021	Buyout/LBO	Add-on
South Suburban Gastroenterology	Texas Digestive Disease Consultants	06-Jul-2021	Buyout/LBO	Add-on
Utah Gastroenterology	Texas Digestive Disease Consultants	01-Jul-2021	Buyout/LBO	Add-on
Colorado Gastroenterology	Texas Digestive Disease Consultants	24-Jun-2021	Buyout/LBO	Add-on
Austin Gastroenterology	Texas Digestive Disease Consultants	04-Mar-2021	Buyout/LBO	Add-on
GI Associates of Chicago	Texas Digestive Disease Consultants	04-Jan-2021	Buyout/LBO	Add-on
Digestive Health Associates of Texas	Texas Digestive Disease Consultants	31-Dec-2020	Buyout/LBO	Add-on
Cleburne Digestive Health	Texas Digestive Disease Consultants	30-Dec-2020	Buyout/LBO	Add-on
GI Associates of Southwest LA	Texas Digestive Disease Consultants	18-Dec-2020	Buyout/LBO	Add-on
Metropolitan Gastroenterology Associates	Texas Digestive Disease Consultants	18-Dec-2020	Buyout/LBO	Add-on
Adult Gastroenterology Associates	Texas Digestive Disease Consultants	24-Nov-2020	Buyout/LBO	Add-on
Illinois Gastroenterology Institute SC	Texas Digestive Disease Consultants	21-Jul-2020	Buyout/LBO	Add-on
Gastroenterology Consultants of San Antonio	Texas Digestive Disease Consultants	31-Dec-2019	Buyout/LBO	Add-on
Lubbock Digestive Disease Associates	Texas Digestive Disease Consultants	16-Dec-2019	Buyout/LBO	Add-on
GastroArkansas	Texas Digestive Disease Consultants	11-Dec-2019	Buyout/LBO	Add-on
Amarillo Endoscopy Center	Texas Digestive Disease Consultants	19-Nov-2019	Buyout/LBO	Add-on
Indianapolis Gastroenterology and Hepatology	Texas Digestive Disease Consultants	04-Nov-2019	Buyout/LBO	Add-on
San Antonio Gastroenterology	Texas Digestive Disease Consultants	21-Oct-2019	Buyout/LBO	Add-on
Arizona Digestive Health	Texas Digestive Disease Consultants	16-Oct-2019	Buyout/LBO	Add-on
Southeast Texas Gastroenterology Associates	Texas Digestive Disease Consultants	17-Sep-2019	Buyout/LBO	Add-on
Cross Timbers Surgery Center	Texas Digestive Disease Consultants	26-Aug-2019	Buyout/LBO	Add-on
Dallas Endoscopy Center	Texas Digestive Disease Consultants	05-Aug-2019	Buyout/LBO	Add-on
Thibodaux Endoscopy	Texas Digestive Disease Consultants	05-Aug-2019	Buyout/LBO	Add-on
Illinois Gastroenterology Group	Texas Digestive Disease Consultants	25-Jul-2019	Buyout/LBO	Add-on
Texas Digestive Disease Consultants		05-Nov-2018	Buyout/LBO	Management Buyout
Bay Area Gastroenterology	Texas Digestive Disease Consultants	01-Apr-2018	Buyout/LBO	Add-on

Source: Authors' analysis of PitchBook Data, Inc., as of June 12, 2023, courtesy of the Private Equity Stakeholder Project. PitchBook data has not been reviewed by PitchBook analysts.

Illustrative Example #3: Tyler, TX (MSA)

Single MSA with Multiple Specialties with High Market Share from Multiple Firms

Background

Within the Tyler, TX MSA, Golub Capital and HarbourVest Partners have achieved significant market shares for dermatology and anesthesiology, respectively.

- **Golub Capital:** Golub Capital is a middle-market investment firm headquartered in New York City with a domestic focus.⁸⁷ Golub Capital has a history of investing in the healthcare industry, including dermatology. In Tyler, TX they are present through their ownership of US Dermatology Partners.
- **HarbourVest Partners:** HarbourVest Partners is a global private equity investment firm that provides primary fund investments, secondary investments, and direct co-investments in various industries.⁸⁸ In Tyler, TX they are present through their ownership of US Anesthesia Partners.

Market Characteristics

Tyler's healthcare system is centered around major hospital and clinic systems, including the UT Health East Texas and CHRISTUS Trinity Mother Frances Health System. As of 2021, the healthcare sector was the largest employer in Tyler, with approximately 25,000 full-time jobs and 9,000 indirect jobs with one in three jobs directly related to healthcare.⁸⁹ In addition to Tyler's healthcare market, the city is situated in East Texas within 100 miles of the large and sprawling metropolitan cities of Dallas, Fort Worth, and Arlington TX which is home to over 7.5 million people. To illustrate the potential patient characteristics and needs in Tyler, below is a table of the demographics, including their population size, age, and incomes.

Table A8: MSA 46340 (Tyler, TX)

	Population	Median Age	Population > 50 Years Old	Median Household Income	Persons Below the Poverty Line
Tyler, TX	237,186	37.4	35%	\$31,682	12.5%
Texas (statewide)	29,527,940	35.5	31%	\$38,332	14.3%

Source: censusreporter.org⁹⁰

Market Trends Among Specialties and Private Equity Ownership

Dermatology: Recent research on dermatology practices backed by private equity pre-COVID through 2022 showed that the debt valuations of these firms demonstrated a lower probability that their loans

⁸⁷ Golub Capital. Accessed June 8, 2023, <https://golubcapital.com>.

⁸⁸ HarbourVest Partners. Accessed June 2, 2023, <https://www.harbourvest.com>.

⁸⁹ Tyler Texas Online. "Tyler Texas Healthcare Industry." Accessed June 12, 2023. <https://www.tylertexasonline.com/tyler-texas-healthcare-jobs-industry.htm>

⁹⁰ Source: Authors' analysis of censusreporter.org data, as of June 19, 2023.

would be repaid in full.⁹¹ This could signal that some dermatology practices are not performing as well financially as was anticipated before COVID-19. Driving this decrease includes lower utilization of dermatology services, a traditionally very hands-on specialty, during the pandemic. The American Medical Association found that Medicare physician spending for dermatology had a 24% cumulative reduction from January to June 2020.⁹² Additionally, other researchers found that dermatology practice revenue decreased an estimated \$3 billion to \$3.5 billion following the onset of the pandemic.⁹³ Despite these trends, large practices continue to build their portfolios, seeing an opportunity in rural areas and via the increased use of telehealth.

- **US Dermatology Partners:** Backed by Golub Capital, U.S. Dermatology Partners is one of the nation's largest dermatology practices caring for more than 1.5 million patients yearly with nearly 90 locations across eight states, including Arizona, Colorado, Kansas, Maryland, Missouri, Oklahoma, Texas, and Virginia.⁹⁴ USDP provides access for member dermatologists to operational management, administrative assistance, marketing and branding, financial management, and technology solutions. In early 2023, they announced that they will open 30 new locations in eight states over three years as part of an initiative to reach patients in rural areas.⁹⁵

Anesthesiology: Historically, this has been a very active space in healthcare for private equity investment. A study of private-equity buyouts of physician practices published in *JAMA Network* in February 2020 found that anesthesiology practices were the focus of almost 20% of those buyouts.⁹⁶

- **US Anesthesia Partners:** Backed by HarborVest Partners among other investors, U.S. Anesthesia Partners (USAP), based out of Dallas, TX, has over 3,500 team members providing patient care in more than 400 hospitals and ambulatory surgery centers nationwide. The company utilizes a physician partnership mode to maintain a measure of clinical and operational autonomy at the local level. USAP then supports its physician partners with centralized management infrastructure and resources. In 2016, U.S. Anesthesia Partners partnered with East Texas Anesthesiology Associates in Tyler, TX. In early October 2022, *The Wall Street Journal* reported the FTC was investigating U.S. Anesthesia Partners.⁹⁷ *The Washington Post* recently published a detailed examination of USAP and its practices, including price increases and antitrust scrutiny.⁹⁸ Additional details of U.S. Anesthesia's acquisition history from September 2017 through August 2021 are shown below.

⁹¹ Rohail Memon et al., "Trends in Debt Valuations of Private Equity-Backed Dermatology Groups before and during the COVID-19 Pandemic," *JAMA Dermatology* 158, no. 4 (2022): 395-403.

⁹² K. Gillis, "Changes in Medicare Physician Spending during the COVID-19 Pandemic" (Chicago, IL: American Medical Association, 2021), <https://www.ama-assn.org/system/files/2021-03/prp-covid-19-medicare-physician-spending.pdf>.

⁹³ Graham H. Litchman, Justin W. Marson, and Darrell S. Rigel, "The Continuing Impact of COVID-19 on Dermatology Practice: Office Workflow, Economics, and Future Implications," *Journal of the American Academy of Dermatology* 84, no. 2 (2021): 576-79.

⁹⁴ US Dermatology Partners, "About U.S. Dermatology Partners," U.S. Dermatology Partners, May 16, 2023. Accessed June 14, 2023, <https://www.usdermatologypartners.com/about-us>.

⁹⁵ Will Maddox, "How U.S. Dermatology Partners Is Reversing Rural Care Shortages," *D Magazine*, January 25, 2023, <https://www.dmagazine.com/healthcare-business/2023/01/how-u-s-dermatology-partners-is-reversing-rural-care-shortages/>.

⁹⁶ Jane M. Zhu, Lynn M. Hua, and Daniel Polsky, "Private Equity Acquisitions of Physician Medical Groups Across Specialties, 2013-2016," *JAMA* 323, no. 7 (2020): 663-65, <https://doi.org/10.1001/jama.2019.21844>.

⁹⁷ Dave Michaels, "FTC Probes Market Power of One of Country's Biggest Anesthesia Providers," *Wall Street Journal*, October 1, 2022, <https://www.wsj.com/articles/ftc-probes-market-power-of-one-of-countrys-biggest-anesthesia-providers-11664644401>.

⁹⁸ Peter Whoriskey, "Financiers Bought up Anesthesia Practices, Then Raised Prices," *Washington Post*, June 29, 2023, <https://www.washingtonpost.com/business/2023/06/29/private-equity-medical-practices-raise-prices/>.

Table A9: HarbourVest Partners Acquisitions under U.S. Anesthesia Partners (September 2017-August 2021)

Companies	Add-on Platform	Add-on Sponsors	Deal Date	Deal Type	Deal Type 2
Paradigm Anesthesia	U.S. Anesthesia Partners	Ares Capital Corporation BDC, Ares Management, Berkshire Partners, HarbourVest Partners, Heritage Group, Welsh, Carson, Anderson & Stowe	01-Aug-2021	Buyout/LBO	Add-on
Guardian Anesthesia Services	U.S. Anesthesia Partners	Berkshire Partners, HarbourVest Partners, Welsh, Carson, Anderson & Stowe	02-Jan-2020	Buyout/LBO	Add-on
US Anesthesia Partners-Maryland	U.S. Anesthesia Partners	Berkshire Partners, HarbourVest Partners, Welsh, Carson, Anderson & Stowe	06-Apr-2018	Buyout/LBO	Add-on
US Anesthesia Partners Florida	U.S. Anesthesia Partners	Berkshire Partners, HarbourVest Partners, Heritage Group, Welsh, Carson, Anderson & Stowe	07-Sep-2017	Buyout/LBO	Add-on

Source: Authors' analysis of PitchBook Data, Inc., as of June 12, 2023, courtesy of the Private Equity Stakeholder Project. PitchBook data has not been reviewed by PitchBook analysts.

Illustrative Example #4: Spotlight on KKR

KKR & Co. Inc. (formerly known as Kohlberg Kravis Roberts & Co.) is a global investment firm that manages multiple alternative asset classes, including private equity, energy, infrastructure, real estate, and credit. As of 2021, KKR had around \$279 billion in assets under management.

Active Markets and Specialties⁹⁹

- **Anesthesiology**
 - MSA 13460 (30-50%) - Bend-Redmond, OR
 - MSA 38060 (>50%) - Phoenix-Mesa-Scottsdale, AZ
- **Urology**
 - MSA 35840 (30-50%) - North Port-Sarasota-Bradenton, FL
- **Emergency Medicine** - Not above 30% market share in any MSA
- **Oncology** - Not above 30% market share in any MSA
- **Ophthalmology** - Not above 30% market share in any MSA
- **Gastroenterology** - Not above 30% market share in any MSA

Envision - Emergency Medicine

In 2018, KKR conducted a \$9.9 billion leveraged buyout of Envision, a national hospital-based physician group.¹⁰⁰ KKR used approximately \$7 billion in debt to finance the acquisition, which debt was not

⁹⁹ Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

¹⁰⁰ Stinnet, Joel. "Envision Healthcare Completes \$9.9 Billion Sale to KKR." Nashville Business Journal. Accessed October 13, 2022. <https://www.bizjournals.com/nashville/news/2018/10/11/completion-of-9-9b-deal-leaves-nashville-with-one.html>

repayable by KKR but rather by Envision.¹⁰¹ Using a high amount of leverage to acquire companies can be a major risk if market conditions suddenly change and a company still has to meet its debt service obligations. This proved true as the regulations for surprise billing changed and the pandemic disrupted emergency physician and ambulatory staffing services. Emergency medical care and out-of-network billing were at the core of Envision's business model.¹⁰²

In 2017, researchers at Yale University published findings that when Envision entered into a new contract with a hospital, it would "immediately exit networks, bill as out-of-network providers, and seek to collect their charges."¹⁰³ These higher billing practices resulted in a contract dispute between Envision and UnitedHealthcare over what Envision's physicians get paid. An independent arbitration panel ended up awarding Envision damages of \$91 million related to its lawsuit.¹⁰⁴ While appearing to protect physician reimbursement, ProPublica reported that at the beginning of the pandemic, Envision cut "pay and benefits for emergency room doctors and other medical workers" while spending millions lobbying against surprise billing legislation.¹⁰⁵

In March 2022, researchers Eileen Appelbaum and Rosemary Batt found that Envision Healthcare would have to pivot back to a surprise billing strategy "if it was to meet its debt obligations."¹⁰⁶ However, this was no longer an option, given that the No Surprises Act had been enacted a few months earlier.¹⁰⁷ Envision's bankruptcy resulted in credit downgrades and distressed debt exchanges beginning in 2020, in which KKR and Envision strategically shielded assets from some of their original creditors.¹⁰⁸ As part of the Chapter 11 restructuring, Envision plans to sell its remaining ambulatory surgical centers to AMSURG for \$300 million and a waiver of intercompany loans between the two entities.¹⁰⁹

¹⁰¹ Ronalds-Hannon, Eliza, and Davide Scigliuzzo. "The Debt Deal That Shows How Ugly Things Are Getting for Lenders." Bloomberg.com, October 5, 2022, <https://www.bloomberg.com/news/articles/2022-10-05/kkr-s-envision-deal-shows-how-ugly-creditor-battles-are-getting>.

¹⁰² Cooper, Zack, Fiona Scott Morton, and Nathan Shekita. "Surprise! Out-of-Network Billing for Emergency Care in the United States." Cambridge, MA: National Bureau of Economic Research, July 2017. <https://doi.org/10.3386/w23623>

¹⁰³ Pg. 4, Cooper, et al.

¹⁰⁴ Envision Healthcare. "Envision Healthcare Awarded \$91.2M in Judgment Against UnitedHealthcare." Business Wire, May 2, 2023. <https://www.businesswire.com/news/home/20230502005828/en/Envision-Healthcare-Awarded-91.2M-in-Judgment-Against-UnitedHealthcare>

¹⁰⁵ Arnsdorf, Isaac. "Medical Staffing Companies Cut Doctors' Pay While Spending Millions on Political Ads." ProPublica, April 20, 2020. <https://www.propublica.org/article/medical-staffing-companies-cut-doctors-pay-while-spending-millions-on-political-ads>

¹⁰⁶ Appelbaum, Eileen, and Rosemary Batt. "Envision Healthcare Hits the Skids." The American Prospect, March 14, 2022. <https://prospect.org/api/content/dee32e40-a176-11ec-bb52-12f1225286c6/>.

¹⁰⁷ Centers for Medicare & Medicaid Services. "Surprise Billing & Protecting Consumers." CMS.gov, January 14, 2022. <https://www.cms.gov/nosurprises/Ending-Surprise-Medical-Bills>

¹⁰⁸ Ronalds-Hannon, Eliza, and Scigliuzzo, Davide. "The Debt Deal That Shows How Ugly Things Are Getting for Lenders." Bloomberg.com, October 5, 2022. <https://www.bloomberg.com/news/articles/2022-10-05/kkr-s-envision-deal-shows-how-ugly-creditor-battles-are-getting>

¹⁰⁹ United States Bankruptcy Court for the Southern District of Texas. "Declaration of Paul Keglevic, Chief Restructuring Officer of Envision Healthcare Corporation, In Support of the Debtor's Chapter 11 Petitions." United States Bankruptcy Court for the Southern District of Texas Houston Division, pg.10. May 15, 2023. <https://www.courtlistener.com/docket/67385012/2/envision-healthcare-corporation/>

APPENDIX B: STATE-LEVEL POLICY INTERVENTIONS

State Legislation

The increasing involvement of private equity firms in the healthcare sector has prompted states to consider how best to regulate this trend and protect the quality and accessibility of care. One approach involves strengthening laws related to the **Corporate Practice of Medicine (CPOM) and fee-splitting**, which are intended to prevent non-physician business interests from interfering with medical judgment. States are also considering how **employment laws** could be used to ensure that healthcare professionals maintain control over medical decision-making, even in the context of private equity investment. Furthermore, some states have enacted or are considering laws requiring notice and approval of healthcare ownership transfers, allowing state authorities to review and potentially block deals that could harm the healthcare system. **Transparency and disclosure** laws are also increasingly recognized as valuable tools for monitoring and controlling private equity involvement in healthcare.

Corporate Practice of Medicine (CPOM)

The corporate practice of medicine doctrine prohibits corporations from practicing medicine or employing a physician to provide professional medical services. It is based on several public policy concerns, such as (1) allowing corporations to practice medicine or employ physicians will result in the commercialization of the practice of medicine, (2) a corporation's obligation to its shareholders may not align with a physician's obligation to his patients, and (3) employment of a physician by a corporation may interfere with the physician's independent medical judgment.

Currently, 33 states have CPOM regulations. Some states, such as California, Texas, New York, and North Carolina, have robust CPOM enforcement, but this varies among other states.¹¹⁰ State statutes often specify how professional corporations should be structured, who can participate as shareholders or owners, and who must serve on the board of directors. Most states restrict the shareholders, owners, or board of directors of a professional corporation to persons licensed to render the same professional service as the professional corporation. Other states allow non-physician owners or shareholders but often limit such ownership to a minority percentage. In addition, some states allow for creating multi-service corporations organized by physicians and other healthcare providers.

Addressing the corporate practice of medicine (CPOM) and fee-splitting laws is a complex but necessary issue when considering private equity involvement in healthcare. Here are strategies states could consider:

- **Strengthening CPOM and fee-splitting:** Strengthening these laws could deter private equity from getting too involved in healthcare practices. It would put safeguards to ensure medical professionals maintain control over medicine, even if a private equity firm financially supports their practice.

¹¹⁰ Scott, W., Wilmot, M., Rosenfeld, E. "Corporate Practice of Medicine Doctrine: Increased Enforcement on the Horizon?" Nelson Mullins Riley & Scarborough LLP, January 17, 2023. https://www.nelsonmullins.com/idea_exchange/blogs/healthcare_essentials/enforcement/corporate-practice-of-medicine-doctrine-increased-enforcement-on-the-horizon.

- **Comprehensive transparency requirements:** This could include the terms of the investment, expectations regarding profit margins, and how those profits will be achieved. Transparency requirements would make it easier for regulators, physician practices, and patients to understand who is making decisions about patient care and where those decision-makers' interests lie.
- **Billing practices:** This could include more detailed billing requirements, such as itemized bills, to make costs more transparent and protect patients from unexpected charges.
- **Healthcare quality and accessibility:** States could push for legislation linking private equity involvement in healthcare to providing high-quality and accessible services.
- **Ethical investment:** This could involve encouraging socially responsible investing and discouraging practices prioritizing profits over patient care.

Employment Laws

Certain kinds of no-poach and noncompete agreements are declining; however, others are increasing.¹¹¹ Despite a lack of clarity on the prevalence of these contracts, there has been activity by state legislators and courts to address them. The most commonly cited reasons for using noncompete contracts are to protect the employer's proprietary information and increase the employer's incentive to provide training to workers. The FTC asserts that the use of noncompetes is a widespread and often exploitative practice that suppresses wages, hampers innovation, and blocks entrepreneurs from starting new businesses. On January 5, 2023, the FTC proposed a new rule that would ban employers from imposing noncompetes on their workers.¹¹² Most state laws limiting noncompetes were passed relatively recently. Multistate employers will need to take note of the enforceability of these laws across state lines.

Notice and Approval

Some states have started taking action requiring notice and approval of ownership transfers, allowing state regulators to monitor and control the degree of private equity involvement in their healthcare systems.

Specifically, state policymakers are considering and passing legislation to require hospitals, health systems, physician groups, and private investment firms to notify authorized state entities, e.g., the state attorney general or state health agency, of proposed mergers or contractual affiliations. State policymakers can also augment the attorney general's ability to require transactions to be reviewed and/or approved by the attorney general or state entity.

California, for example, has the Knox-Keene Act, which requires health plans to obtain the Department of Managed healthcare's approval for any change of control or influence.¹¹³ This includes thoroughly reviewing the proposed transaction and its potential impacts on healthcare services. New Jersey also requires approval from the state for any sale or transfer of ownership of a hospital. The law requires the

¹¹¹ Norlander, Peter. "New Evidence on Employee Noncompete, No Poach, and No Hire Agreements in the Franchise Sector." Washington Center for Equitable Growth (February 16, 2023). <http://dx.doi.org/10.2139/ssrn.4342586>

¹¹² Federal Trade Commission. "Non-Compete Clause Rulemaking." Washington, DC: Federal Trade Commission, April 17, 2023. <https://www.ftc.gov/legal-library/browse/federal-register-notices/non-compete-clause-rulemaking>

¹¹³ California Department of Managed Health Care. "2023 Edition: California Knox-Keene Health Care Services Plan Act and Regulations." California Department of Managed Health Care, 2023. https://www.dmhc.ca.gov/Portals/0/Docs/OLS/2023%20Knox-Keene%20Act%20and%20Title%2028%20Book/CA%20Knox-Keene%20Act%202023%20Edition_with%20Bookmarks_508.pdf?ver=LjKa4j7MEmQS_YtWJQ00HQ%3d%3d

Commissioner of Health to consider several factors in the review process, including the financial capability of the proposed new owner and their history of compliance with regulations.¹¹⁴

States should consider the following strategies to provide clarity on private equity involvement via ownership transfer:

- **Robust notification laws:** States can enact laws that require any healthcare facility or provider intending to transfer ownership to notify state authorities in advance. This would allow states to review the proposed transaction and assess its potential impact on healthcare quality and accessibility.
- **Approval processes:** States can require approval for these transactions. The approval process should involve rigorous assessments of the potential impacts on patient care, costs, and access.
- **Criteria for approval:** Criteria for approval should be explicitly stated in the law and might include whether the transaction will harm healthcare markets and/or competition; whether the transaction will increase prices for consumers; whether it increases or reduces access to healthcare services; or whether it could harm the public interest.
- **Mechanisms for public input:** States can require public hearings or other tools for community input before any ownership transfer can be approved.

Transparency and Disclosure

Although an adviser registered with the SEC may advise a private equity fund, private equity funds can have registration exceptions under current SEC regulations. However, on May 3, 2023, the SEC adopted amendments to Form PF, the confidential reporting form for certain SEC-registered investment advisers to private funds designed to bolster oversight of private fund advisers.¹¹⁵

While a few states have more extensive transparency requirements around ownership, many do not. A path states can take to produce transparency is via physician registration. States already have processes for licensing providers and enrolling them to administer Medicaid and other programs. However, the capacity of states to review these registrations and their connections to PE firms is limited. While states may focus on verifying information for a provider's operating company, they often do not have the resources to track down all organizations and individuals with direct or indirect ownership stakes or a role in managing facilities.

Over the past few years, states have focused on the nursing home sector due to that sector's performance during the COVID-19 pandemic and the impact of Skyline Health's nursing home facility closures. Skyline Healthcare owned or ran more than 100 facilities in 11 states, overseeing the care of more than 7,000 elderly Americans. However, over the course of two years, the chain has collapsed, and more than a dozen

¹¹⁴ State of New Jersey. Senate, No. 315. 220th Legislature, NJ 2022. Second Reprint, amended by the Senate on March 24, 2022. https://pub.njleg.state.nj.us/Bills/2022/S0500/315_R2.PDF.

¹¹⁵ Securities and Exchange Commission. "Final Rule: Event Reporting for Large Hedge Fund Advisers and Private Equity Fund Advisers; Requirements for Large Private Equity Fund Adviser Reporting." Federal Register., May 3, 2023. (To be codified at 17 C.F.R. pts. 275 & 279.) <https://www.sec.gov/rules/final/2023/ia-6297.pdf>.

Skyline-operated nursing homes abruptly closed.¹¹⁶ Some states proposing and implementing regulations in this space include Kansas, Ohio, and California.

- **Kansas:** Requires applicants for nursing home licenses or other adult care facilities to disclose “every other licensed property he or she owns or has ever owned, either within Kansas or elsewhere in the United States.” In addition, the disclosure rule applies to ownership stakes in the operations and/or the real estate associated with a nursing facility.¹¹⁷
- **Ohio:** Regulations require more disclosure about a nursing home license applicant’s financial status and history.¹¹⁸
- **California:** California’s Department of Public Health posts a data set that lists, for each licensed facility, the names of individuals or organizations with any share of ownership of the licensee and the property owner, management company, and administrator. However, the data are not fully populated for all facilities.¹¹⁹

Table B1 details the legal measures taken by states to address PE and other efforts to monetize medicine as of March 2023.

Table B1: State Actions on CPOM, Employment Laws, and Notice and Approval Policies

Policy Area	Policy	States
Corporate practice of medicine (CPOM) laws to address financial conflicts of interest and the loss of physician autonomy.	To prevent the use of loopholes related to the Management Services Organizations (MSO) model.	
	No CPOM	AL, AK, DE, FL, HI, ID, ME, MI, MO, NE, NH, NM, OK, UT, VT, VA, WY
	CPOM and an exception for nonprofits	AZ, AR, IN, IA, LA, MI, MN, NC, OH, PA, RI, SC, SD
	CPOM and an exception for specific types of nonprofits	AK, CA, CT, KS, KY, MA, NV, NJ, NY, TX, WI
	CPOM and no nonprofit exceptions	CO, DC, GA, IL, MD, MT, ND, OR, TN, WA, WV
Employment laws to address anticompetitive restrictions on physicians, patient access to providers, and quality concerns.	State legislative changes to restrict non-competes, nondisclosure/gag, and non-disparagement clauses.	
	Ban noncompete agreements with a few narrow exceptions	CA, ND, OK, DC

¹¹⁶ Towhey, J. R.. “Owner of Collapsed Skyline Chain Close to Plea Agreement With Federal Prosecutors: Report.” McKnight’s Long-Term Care News, February 22, 2023. <https://www.mcknights.com/news/owner-of-collapsed-skyline-chain-close-to-plea-agreement-with-federal-prosecutors-report/>.

¹¹⁷ State of Kansas. 2022 Statute, Section 39, Article 9. “Adult Care Homes.” Accessed on April 7, 2023. https://kslegislature.org/li/b2023_24/statute/039_000_0000_chapter/039_009_0000_article/.

¹¹⁸ State of Ohio. Ohio Revised Code, Title 37, Chapter 3721. “Nursing Homes; Residential Care Facilities.” Accessed on April 6, 2023. <https://codes.ohio.gov/ohio-revised-code/chapter-3721>.

¹¹⁹ California Department of Health. “Welcome to the Licensing and Certification Program.” Accessed May 23, 2023. <https://www.cdph.ca.gov/Programs/CHCQ/LCP/Pages/LandCProgramHome.aspx>.

	Prohibit noncompete agreements for low-wage or exempt workers (salary thresholds)	CO, IL, ME, MD, NH, OR, RI, VA, WA
	No restrictions or bans	AL, AK, AZ, AK, CT, DE, FL, GA, HI, ID, IL, IN, IA, KS, KT, LA, MA, MI, MN, MS, MO, MT, NE, NV, NJ, NM, NY, NC, OH, PA, SC, SD, TN, TX, UT, VT, WV, WI, WY
Notice and approval to address the lack of transparency of ownership transfers.	Approval of transfers by the state AG Statutory review standards (e.g., harm to competition, prices, access, or public interest)	
	AG Notice	AZ , CA , CO , CT , DC , GA , HI , ID , IN , LA , ME , MA , MN , MO , MT , NE , NH , NJ , NY , NC , ND , OH , OR, RI, SC , SD , TN , VT , VA, WA , WI , WY
	AG Approval	CA , CO , CT , DC , HI , ID , IN , LA , ME , MD , MA , MT , NE , NV , NH , NJ, NY , NC , ND , OH , OR , RI , SC , TN , VT , WA , WI , WY
	AG Review	CA , CO , CT , DC , HI , ID , LA , ME , MD , MA , NE , NH , NJ, NY , ND , OH , OR , RI, TN , VT , WA , WI
	AG Special Directions	PA
	Court Review	ID , ME , NJ, NY
	Court Approval	AR , CO , IN , IA , LA , ME , MO , MT , NJ, NY , NC , ND , SC, WY
	State Entity Notice	AZ , HI , NE , NJ, RI, VT , WA, WI
	State Entity Review	MA , NE , OR , RI, VT , WA , WI
	State Entity Approval	HI , MA , NE , NV , RI, VT , WA , WI
	State Entity Criteria	HI
	State Health Notice	MA , OR
	State Health Approval	OR

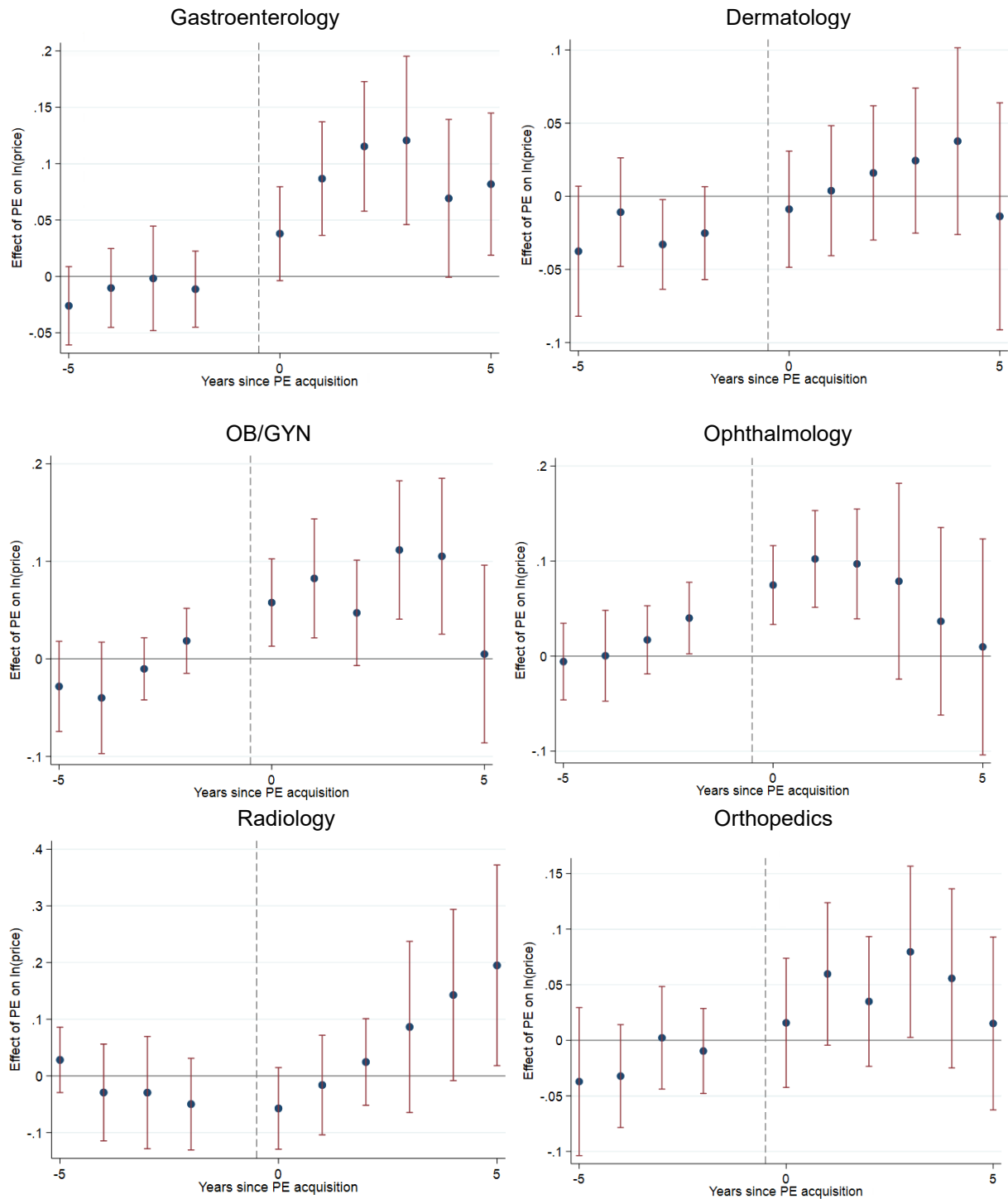
Information for this table was collected from the following resources: [National Conference of State Legislatures Health System Consolidation Tracker](#), [Fenton Law Group](#), [Private Equity and the Corporatization of Healthcare](#)

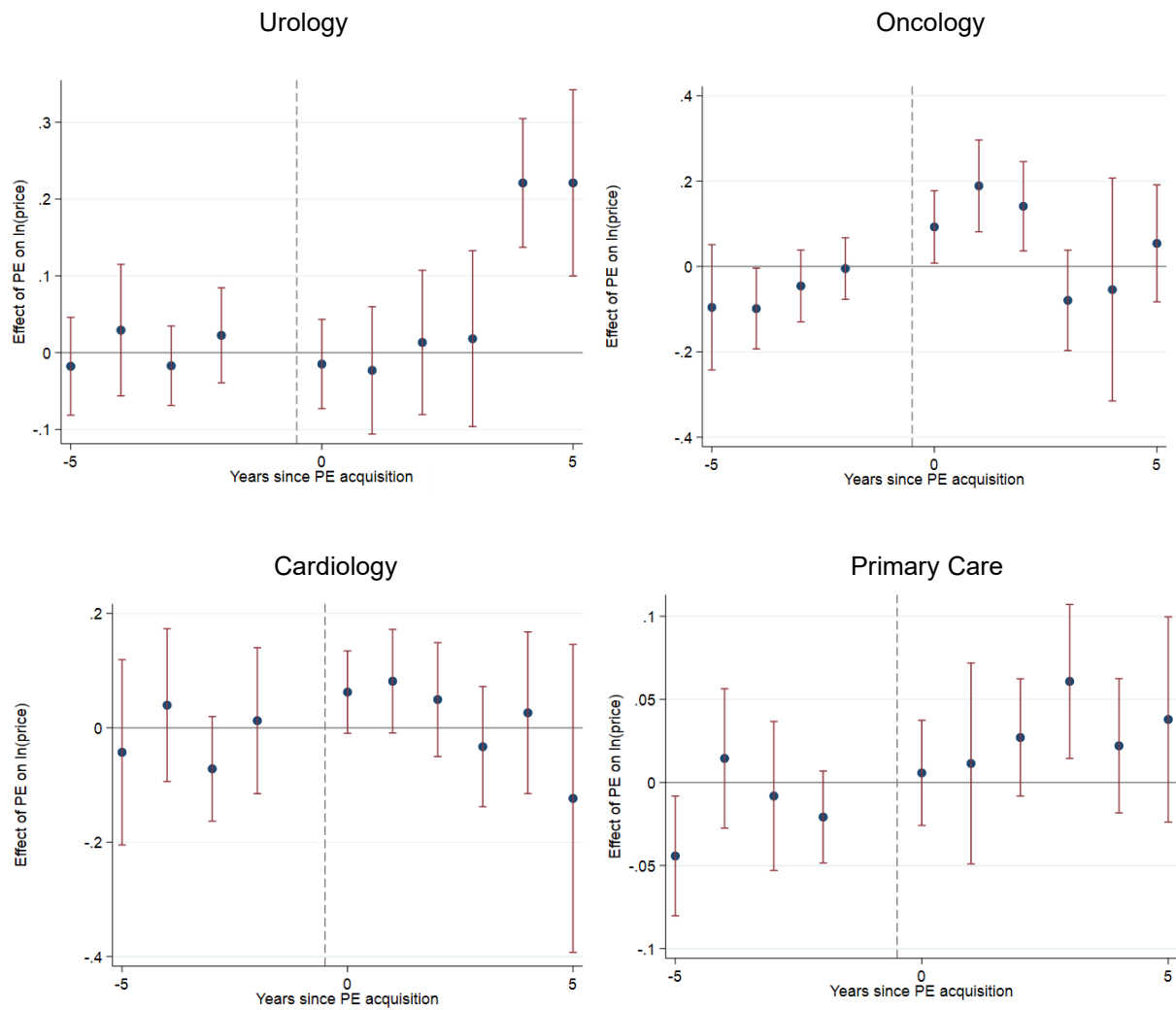
APPENDIX C: SUPPLEMENTAL PRICE EFFECT EVENT STUDY RESULTS

This appendix includes supplemental price results to those presented in Section IV. Specifically, Figure C1 presents the Sun & Abraham (2021) event study versions of the difference-in-differences results presented in column A of Table 3 (note, the vertical axes are scaled differently across the specialties). The purpose of presenting these results is twofold. First, the pre-intervention coefficient estimates are generally statistically indistinguishable from zero, giving us confidence that the parallel trends assumption underlying our difference-in-differences models is satisfied. Second, these event studies show how the price effect changes over time. They answer the question, do prices increase immediately or gradually increase over time? As an example, the gastroenterology event study results show that the relative price increase increases over time. In the year of intervention ($t=0$), the estimated coefficient is positive, but with a confidence interval that overlaps zero. By $t=3$, however, the coefficient estimate is 0.121 ($p<0.01$) and is clearly statistically significant at the 0.05 level.

Difference-in-differences models can sometimes mask effects four and five years after acquisition because they essentially average effects over the entire post-acquisition period. Comparing the difference-in-differences result to the event study result for urology is a good example of this masking. As shown in Table 3, the price effect is not statistically significant for urology (4.2%, $p=0.208$). However, the urology event study below shows there is a large, statistically significant price effect for urology that begins four years after acquisition (coefficient=0.221, $p<0.01$). Why price effects are more instantaneous for some specialties than others is unclear, but one of the reasons could be different strategies among the PE firms that are acquiring within particular specialties.

Figure C1: Price Event Study Results for 10 Specialties, 2012-2021





Source: Authors' analysis of data from HCCI Commercial Claims Research Dataset, OneKey and SK&A Office Based Physicians Database provided by IQVIA, and Area Health Resources File.

APPENDIX D: NAMES OF MSAS IN WHICH A SINGLE PRIVATE EQUITY FIRM POSSESSES MORE THAN 30% OR 50% MARKET SHARE OF ONE OR MORE PHYSICIAN SPECIALTIES, 2021

This appendix includes the names of the 108 MSAs shown in Figure 3 where a single private equity firm possessed more than 30% or 50% market share of one or more physician specialties in 2021 (see Table D1). All MSAs included in Table D1 had a single PE firm with greater than 30% market share in 2021. The 50 MSAs with an asterisk (*) also had a single PE firm with greater than 50% market share in 2021.

Table D1: Names of MSAs in which a Single Private Equity Firm Possessed More Than 30% or 50% Market Share of One or More Physician Specialties, 2021

State	MSA
Alabama	Florence-Muscle Shoals, AL
Arkansas	Hot Springs, AR*
	Fayetteville-Springdale-Rogers, AR
Arizona	Sierra Vista-Douglas, AZ
	Prescott Valley-Prescott, AZ
	Tucson, AZ
California	Oxnard-Thousand Oaks-Ventura, CA
	Redding, CA*
Colorado	Grand Junction, CO*
	Fort Collins, CO*
	Colorado Springs, CO*
Connecticut	Norwich-New London, CT
Florida	North Port-Sarasota-Bradenton, FL*
	Tampa-St. Petersburg-Clearwater, FL
	Miami-Fort Lauderdale-Pompano Beach, FL
	Crestview-Fort Walton Beach-Destin, FL*

State	MSA
	Homosassa Springs, FL*
	Punta Gorda, FL*
	Naples-Marco Island, FL
	Gainesville, FL
	Pensacola-Ferry Pass-Brent, FL*
	Jacksonville, FL
	Panama City, FL*
Georgia	Gainesville, GA
	Atlanta-Sandy Springs-Alpharetta, GA
	Savannah, GA*
	Athens-Clarke County, GA*
	Columbus, GA-AL
Iowa	Cedar Rapids, IA
	Iowa City, IA
	Davenport-Moline-Rock Island, IA-IL*
Idaho	Pocatello, ID*
	Lewiston, ID-WA
Illinois	Peoria, IL
Indiana	Kokomo, IN*
	Bloomington, IN
Kansas	Wichita, KS
Kentucky	Elizabethtown-Fort Knox, KY*
Louisiana	Alexandria, LA
Maryland	Baltimore-Columbia-Towson, MD*

State	MSA
	Salisbury, MD-DE
	Hagerstown-Martinsburg, MD-WV
	Cumberland, MD-WV*
Michigan	Saginaw, MI*
	Lansing-East Lansing, MI*
	Jackson, MI*
	Flint, MI
Minnesota	St. Cloud, MN
	Minneapolis-St. Paul-Bloomington, MN-WI
Mississippi	Jackson, MS*
North Carolina	Winston-Salem, NC
	Greensboro-High Point, NC*
	Hickory-Lenoir-Morganton, NC
	Goldsboro, NC*
New Jersey	Vineland-Bridgeton, NJ
	Ocean City, NJ*
	Trenton-Princeton, NJ*
	Atlantic City-Hammonton, NJ
New Mexico	Albuquerque, NM
	Las Cruces, NM*
	Santa Fe, NM*
New York	Kingston, NY*
Ohio	Dayton-Kettering, OH*
	Lima, OH

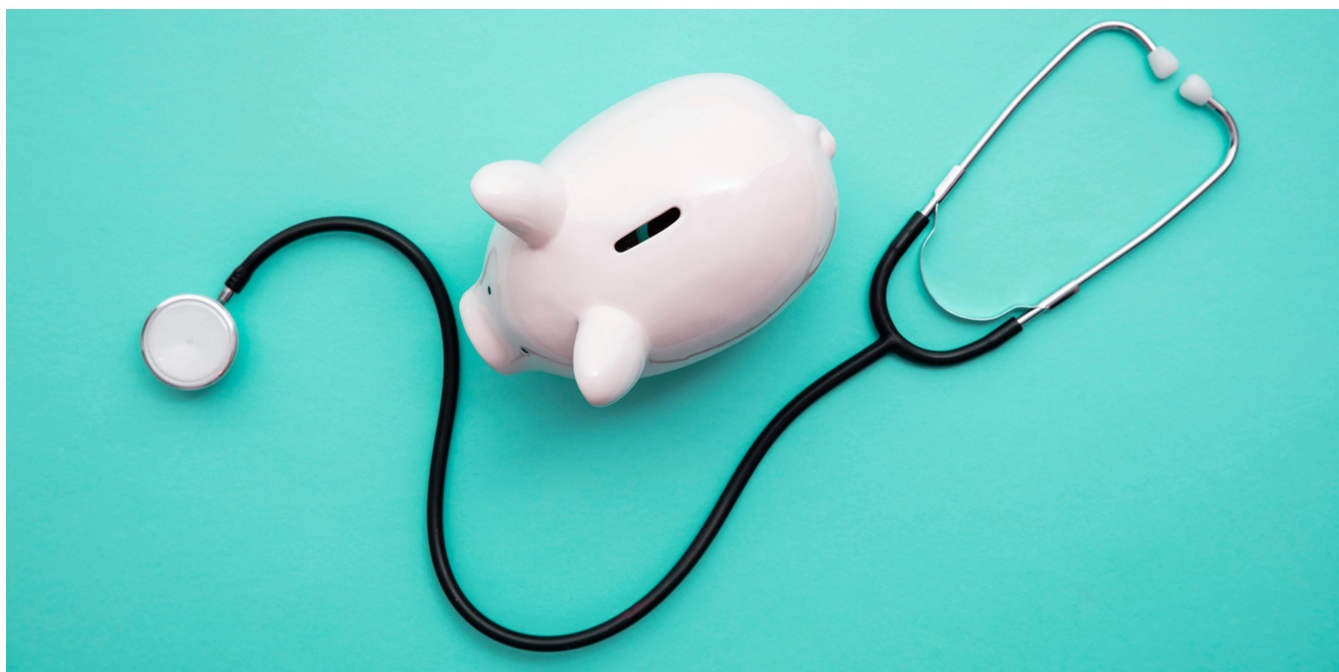
State	MSA
	Columbus, OH
	Canton-Massillon, OH
	Cincinnati, OH-KY-IN
Oklahoma	Tulsa, OK
Oregon	Salem, OR*
Pennsylvania	Lebanon, PA*
	Harrisburg-Carlisle, PA
	Chambersburg-Waynesboro, PA*
	Johnstown, PA*
	Lancaster, PA*
Rhode Island	Providence-Warwick, RI-MA
South Carolina	Florence, SC
	Greenville-Anderson, SC
	Myrtle Beach-Conway-North Myrtle Beach, SC-NC
	Sioux Falls, SD
Tennessee	Johnson City, TN*
	Knoxville, TN
	Chattanooga, TN-GA*
	Clarksville, TN-KY
	Memphis, TN-MS-AR*
	Kingsport-Bristol, TN-VA*
Texas	Laredo, TX
	College Station-Bryan, TX
	Odessa, TX

State	MSA
	Killeen-Temple, TX*
	Midland, TX
	Austin-Round Rock-Georgetown, TX
	Amarillo, TX
	Abilene, TX
	Longview, TX*
	Lubbock, TX
	Beaumont-Port Arthur, TX*
	Tyler, TX*
	Sherman-Denison, TX
	Waco, TX*
	Texarkana, TX-AR
Utah	St. George, UT
Wisconsin	Fond du Lac, WI
	Green Bay, WI*
	Oshkosh-Neenah, WI*
	Appleton, WI*
	Wausau-Weston, WI*
	Madison, WI
Wyoming	Casper, WY*

Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Note: All 108 MSAs in the table had a PE firm with greater than 30% market share in 2021. The 50 MSAs with an * had a PE firm with greater than 50% market share in 2021.

ADDENDA TO MONETIZING MEDICINE: PRIVATE EQUITY AND COMPETITION IN PHYSICIAN PRACTICE MARKETS



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INTRODUCTION

The purpose of these addendums is to provide additional information and detail for Table D1 in [“Monetizing Medicine: Private Equity and Competition in Physician Markets”](#).

In Table D1 (pgs. 64-68) of the original report we provided a list of the metropolitan statistical areas (MSAs) that had a private equity (PE) firm with 30+% or 50+% market share in 2021 for one or more of the ten physician specialties we analyzed. Here we provide two addendums to Table D1. Addendum 1 provides the physician specialty (column 3), the name of the physician practice (column 4), and the PE firm (column 5) with the 30+% or 50+% market share for most of the MSAs mentioned in the original report. The PE firm listed is the first PE investor during our study period (2012-2021) and may not currently be an investor in the physician practice.

Addendum 2 presents the MSA-level three year post-PE price increase (in percentage terms) for the affected specialty (column 4). Specifically, the price increase reported compares the average specialty-specific price in the MSA three years after the first PE acquisition to the average specialty-specific price in the MSA the year before the first PE acquisition. Prices within each specialty are calculated using claims for the most common service (i.e., CPT code) provided by the specialty. The price increase is calculated using all the physicians in the affected specialty and MSA, not just the physicians associated with the PE firm with 30+% or 50+% market share. Additionally, price increases are only shown for MSAs that had 11 or more physicians in the relevant specialty and for MSAs where the PE acquisition occurred between 2013 and 2018. The 2013 restriction ensures we can calculate an average price a year before each acquisition as our data starts in 2012. The 2018 restriction ensures we have three full years of post acquisition data as our price data ends in 2021.

Addendum 1 to Table D1: Names of MSAs in which a Single Private Equity Firm Possessed More Than 30% or 50% Market Share of One or More Physician Specialties, 2021

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
Alabama	Florence-Muscle Shoals, AL	Cardiology	LifePoint Health	Apollo Global Management
Arkansas	Hot Springs, AR	Oncology, Gastroenterology	Genesis Cancer Center (on), LifePoint Health (g)*	N/A (on), Apollo Global Management (g)*
	Fayetteville-Springdale-Rogers, AR	Gastroenterology	AmSurg	Envision Healthcare
Arizona	Sierra Vista-Douglas, AZ	OB/GYN	Unified Women’s Healthcare	Atlas Partners

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Prescott Valley- Prescott, AZ	Dermatology	West Dermatology	Sun Capital Partners
	Tucson, AZ	Radiology, Orthopedics, OB/GYN	RadLtd	Welsh, Carson, Anderson & Stowe
California	Oxnard-Thousand Oaks-Ventura, CA	Ophthalmology	Miramar Eye Specialists Medical Group	NVISION Eye Centers
	Redding, CA	Oncology, Gastroenterology	GenesisCar (on)*, AmSurg (g)	KRG Capital Partners (on)*, Envision Healthcare (g)
Colorado	Grand Junction, CO	Gastroenterology	Covenant Physician Partners*	Kohlberg Kravis Roberts*
	Fort Collins, CO	Dermatology	Advanced Dermatology and Cosmetic Surgery*	Harvest Partners*
	Colorado Springs, CO	Urology, Gastroenterology	Urological Associates PC (u)*, Peak Gastroenterology Associates PC (g)	N/A (u)*, Varsity Healthcare Partners (g)
Connecticut	Norwich-New London, CT	Dermatology	Advanced Dermatology	N/A
Florida	North Port-Sarasota- Bradenton, FL	Urology	GenesisCare*	KRG Capital Partners*
	Tampa-St. Petersburg- Clearwater, FL	OB/GYN	Women’s Care Florida	BC Partners

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Miami-Fort Lauderdale- Pompano Beach, FL	Gastroenterology	Gastro Health LLC	Audax Private Equity
	Crestview-Fort Walton Beach- Destin, FL	Dermatology	Coastal Skin Surgery and Dermatology*	N/A*
	Homosassa Springs, FL	Gastroenterology	Gastroenterology Associates*	N/A*
	Punta Gorda, FL	Urology	GenesisCare*	KRG Capital Partners*
	Naples-Marco Island, FL	OB/GYN	Unified Women’s Healthcare	Atlas Partners
	Gainesville, FL	OB/GYN	Unified Women’s Healthcare	Atlas Partners
	Pensacola-Ferry Pass-Brent, FL	Gastroenterology	Gastroenterology Associates of Pensacola*	OMERS Private Equity*
	Jacksonville, FL	OB/GYN	Women’s Care Florida	BC Partners
Georgia	Gainesville, GA	Gastroenterology	Atlanta Gastroenterology Associates	Frazier Healthcare Partners
	Atlanta-Sandy Springs-Alpharetta, GA	Gastroenterology	Atlanta Gastroenterology Associates	Frazier Healthcare Partners

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Savannah, GA	Orthopedics, Gastroenterology	Optim Healthcare (or)*, Center for Digestive and Liver Health (g)	Irving Place Capital (or)*, Frazier Healthcare Partners (g)
	Athens-Clarke County, GA	Oncology, Gastroenterology	Atlanta Gastroenterology Associates (g)*	Frazier Healthcare Partners (g)*
	Columbus, GA-AL	OB/GYN, Gastroenterology	LifePoint Health (ob, g)	Apollo Global Management (ob, g)
Iowa	Cedar Rapids, IA	Dermatology	Forefront Dermatology	Varsity Healthcare Partners
	Iowa City, IA	Dermatology	Epiphany Dermatology	CI Capital Partners
	Davenport-Moline- Rock Island, IA-IL	Urology	Urological Associates PC*	N/A*
Idaho	Pocatello, ID	Cardiology	Ardent Health Services*	Equity Group Investments*
Illinois	Peoria, IL	Gastroenterology	Illinois Gastroenterology Institute	Waud Capital Partners
	Bloomington, IN	Radiology	Center for Diagnostic Imaging	Black Diamond Capital Management
Kansas	Wichita, KS	Ophthalmology	Greene Vision Group LLC	Eyecare Partners
Kentucky	Elizabethtown-Fort Knox, KY	Dermatology	Forefront Dermatology*	Varsity Healthcare Partners*

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
Louisiana	Alexandria, LA	Radiology	CHRISTUS Health	Palladium Equity Partners
Maryland	Baltimore-Columbia-Towson, MD	Urology	Chesapeake Urology Associates PA*	Audax Private Equity*
	Salisbury, MD-DE	Urology	Chesapeake Urology Associates PA	Audax Private Equity
	Hagerstown-Martinsburg, MD-WV	Ophthalmology	Maryland Vision Institute	Centre Partners
	Cumberland, MD-WV	Orthopedics	Precision Orthopedics and Sports Medicine*	Cobepa*
Michigan	Saginaw, MI	Cardiology, Oncology, Orthopedics, Primary Care, OB/GYN, Gastroenterology	Covenant Medical Center (c, on*, or, p, ob, g)	Epiris (c, on*, or, p, ob, g)
	Lansing-East Lansing, MI*	Dermatology, Gastroenterology	Forefront Dermatology (d), Michigan Gastroenterology Institute (g)*	Varsity Healthcare Partners (d), N/A (g)*
	Jackson, MI	Ophthalmology	Specialty Eye Institute*	Alpine Investors*
	Flint, MI	Dermatology	Pinnacle Dermatology LLC	BayPine
Minnesota	St. Cloud, MN	Ophthalmology	AmSurg	Envision Healthcare

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Greensboro-High Point, NC	Radiology	Greensboro Radiology and Imaging*	N/A*
	Hickory-Lenoir-Morganton, NC	OB/GYN, Gastroenterology	Unified Women’s Healthcare (ob) Gastroenterology Associates PA (g)	Atlas Partners (ob), N/A (g)
	Goldsboro, NC	OB/GYN	Unified Women’s Healthcare*	Atlas Partners*
New Jersey	Vineland-Bridgeton, NJ	Urology	New Jersey Urology	Prospect Hill Growth Partners
	Ocean City, NJ	OB/GYN	Axia Women’s Health*	Partners Group*
	Trenton-Princeton, NJ	Radiology, Urology	Radiology Affiliates Imaging (r)*, New Jersey Urology (u)	Radiology Partners (r)*, Prospect Hill Growth Partners (u)
	Atlantic City-Hammonton, NJ	Gastroenterology	Jersey Shore Gastroenterology	Allied Digestive Health
New Mexico	Albuquerque, NM	Cardiology	Ardent Health Services	Equity Group Investments
	Las Cruces, NM	Oncology	LifePoint Health*	Apollo Global Management*
	Santa Fe, NM	Cardiology, Oncology, Orthopedics, OB/GYN	CHRISTUS Health (c*, on*, or*, ob)	Palladium Equity Partners (c*, on*, or*, ob)

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
New York	Kingston, NY	Orthopedics	Orthopedic Associates of Dutchess County*	Leavitt Equity Partners*
Ohio	Dayton-Kettering, OH	Gastroenterology, Dermatology	Dayton Gastroenterology (g)*, Dermatologists of Central States (d)	Webster Equity Partners (g)*, Sheridan Capital Partners (d)
	Lima, OH	Ophthalmology	Retina Vitreous Associates	BPEA Private Equity
	Columbus, OH	Gastroenterology, Radiology	Ohio Gastroenterology Group Inc (g), Columbus Radiology (r)	N/A (g), Radiology Partners (r)
	Canton-Massillon, OH	Orthopedics	OMNI Orthopaedics	N/A
	Cincinnati, OH-KY-IN	Ophthalmology	Cincinnati Eye Institute	Partners Group
Oklahoma	Tulsa, OK	Cardiology	Ardent Health Services	Equity Group Investments
Oregon	Salem, OR	Dermatology	Silver Falls Dermatology*	A&M Capital*
Pennsylvania	Lebanon, PA	Radiology	Lebanon Imaging Associates*	N/A*
	Harrisburg-Carlisle, PA	Orthopedics	Orthopedic Institute of Pennsylvania	Linden Capital Partners
	Chambersburg-Waynesboro, PA	Ophthalmology	Ludwick Eye Centre*	NMS Capital*

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Johnstown, PA	Cardiology, Oncology, Primary Care, OB/GYN	LifePoint Health (c*, on, p*, ob*)	Apollo Global Management (c*, on, p*, ob*)
	Lancaster, PA	Gastroenterology	Regional GI*	Amulet Capital Partners*
South Carolina	Florence, SC	Ophthalmology	Carolinas Centers for Sight	LLR Partners
	Greenville- Anderson, SC	Gastroenterology	Gastroenterology Associates PA	N/A
	Myrtle Beach- Conway-North Myrtle Beach, SC-NC	Orthopedics	OrthoSC	N/A
	Sioux Falls, SD	Ophthalmology	Ophthalmology LTD	Zenyth Partners
Tennessee	Johnson City, TN	Ophthalmology	Johnson City Eye Clinic*	N/A*
	Knoxville, TN	Dermatology, Urology	Anne Arundel Dermatology (d), Tennessee Urology Associates (u)	NMS Capital (d), Audax Private Equity (u)
	Clarksville, TN-KY	Primary Care	Premier Medical Group	N/A
	Memphis, TN-MS- AR	Gastroenterology, Oncology	Gastro One (g)*, West Cancer Center (o)	Webster Equity Partners (g)*, N/A (o)
	Kingsport-Bristol, TN-VA	Dermatology, Gastroenterology	Dermatology Associates (d)*, Gastroenterology Associates (g)	N/A (d)*, N/A (g)

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
Texas	Laredo, TX	Gastroenterology	Physicians Endoscopy LLC	Pamlico Capital
	College Station-Bryan, TX	Primary Care, OB/GYN, Urology, Gastroenterology	Baylor Scott & White Health (p, o, u, g)	HealthCap Partners (p, o, u, g)
	Odessa, TX	Dermatology	Chappell Rosso Dermatology	Chicago Pacific Founders
	Killeen-Temple, TX	Cardiology, Radiology, Oncology, Orthopedics, Primary Care, OB/GYN, Ophthalmology, Dermatology	Baylor Scott & White Health (c*, r, on*, or*, p*, ob*, op*, d*)	HealthCap Partners (c*, r, on*, or*, p*, ob*, op*, d*)
	Austin-Round Rock-Georgetown, TX	Gastroenterology	Austin Gastroenterology	Waud Capital Partners
	Amarillo, TX	Oncology, Gastroenterology	Ardent Health Services (o, g)	Equity Group Investments (o, g)
	Abilene, TX	Ophthalmology	AmSurg	Envision Healthcare
	Longview, TX	Cardiology, Radiology, Primary Care, Urology, Gastroenterology	CHRISTUS Health (c, r, p, u, g*)	Palladium Equity Partners (c, r, p, u, g*)
	Lubbock, TX	Gastroenterology	Lubbock Digestive Disease Associates	Waud Capital Partners
Beaumont-Port Arthur, TX	Orthopedics, Gastroenterology	CHRISTUS Health (o)*, Southeast Texas Gastroenterology Associates (g)	Palladium Equity Partners (o)*, Waud Capital Partners (g)	

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
	Tyler, TX	Orthopedics, Primary Care, Ophthalmology, Dermatology, Gastroenterology*	US Dermatology Partners (d)*, CHRISTUS Health (or, p, op*, g)	Candescent Partners (d)*, Palladium Equity Partners (or, p, op*, g)
	Sherman-Denison, TX	Dermatology, Gastroenterology	U.S. Dermatology Partners (d), Texas Digestive Disease Consultants (g)	Candescent Partners (d), Waud Capital Partners (g)
	Waco, TX*	Oncology, Orthopedics, Primary Care, Urology, Dermatology	Baylor Scott and White Health (on*, or*, p, u), US Dermatology Partners (d)	HealthCap Partners (on*, or*, p, u), Candescent Partners (d)
	Texarkana, TX-AR	Cardiology	Steward Health Care System	Cerberus Capital Management
Utah	St. George, UT	Ophthalmology	Zion Eye Institute	N/A
Wisconsin	Fond du Lac, WI	Dermatology	Forefront Dermatology	Varsity Healthcare Partners
	Green Bay, WI	Dermatology	Forefront Dermatology*	Varsity Healthcare Partners*
	Oshkosh-Neenah, WI	Radiology, Dermatology	Radiology Associates Fox Valley (r)*, Forefront Dermatology (d)	Excellere Partners (r)*, Varsity Healthcare Partners (d)
	Appleton, WI	Radiology, Dermatology	Radiology Associates of Appleton (r),	N/A (r), Varsity Healthcare Partners (d)*

(1) State	(2) MSA	(3) Specialty	(4) Physician practice with >30% or 50%* market share	(5) PE firm with >30% or 50%* market share
			Forefront Dermatology (d)*	
	Wausau-Weston, WI	Dermatology	Forefront Dermatology*	Varsity Healthcare Partners*
	Madison, WI	Radiology	Madison Radiologists	Excellere Partners
Wyoming	Casper, WY	Gastroenterology	Gastroenterology Associates of Wyoming*	Varsity Healthcare Partners*
N	54 30+% MSAs 46 50+% MSAs 100 MSAs in total			

Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, and OneKey and SK&A Office Based Physicians Database provided by IQVIA. PitchBook data has not been reviewed by PitchBook analysts.

Note: g=gastroenterology, on=oncology, or=orthopedics, ob=OB/GYN, d=dermatology, u=urology, c=cardiology, r=radiology, p=primary care, op=ophthalmology, PE=private equity MSA=metropolitan statistical area, N/A=not available. All 100 MSAs in the table had a single PE firm with greater than 30% market share in 2021. * indicates a single PE firm with greater than 50% market share in 2021.

Addendum 2 to Table D1: Names of MSAs in which a Single Private Equity Firm Possessed More Than 30% or 50% Market Share of One or More Physician Specialties, 2021

(1) State	(2) MSA	(3) Specialty	(4) 3-year post-PE price increase for MSA
Arkansas	Fayetteville-Springdale-Rogers, AR	Gastroenterology	-8%
Florida	Tampa-St. Petersburg-Clearwater, FL	OB/GYN	25%
	Miami-Fort Lauderdale-Pompano Beach, FL	Gastroenterology	-6%
	Crestview-Fort Walton Beach-Destin, FL*	Dermatology*	-2%

(1) State	(2) MSA	(3) Specialty	(4) 3-year post-PE price increase for MSA
	Homosassa Springs, FL*	Gastroenterology*	4%
	Naples-Marco Island, FL	OB/GYN	4%
	Gainesville, FL	OB/GYN	13%
	Jacksonville, FL	OB/GYN	21%
Georgia	Atlanta-Sandy Springs-Alpharetta, GA	Gastroenterology	27%
	Savannah, GA*	Orthopedics*, Gastroenterology	12% (or)
	Columbus, GA-AL	OB/GYN, Gastroenterology	79% (ob) 88% (g)
Maryland	Baltimore-Columbia-Towson, MD*	Urology*	3%
	Salisbury, MD-DE	Urology	17%
	Hagerstown-Martinsburg, MD-WV	Ophthalmology	-10%
Michigan	Lansing-East Lansing, MI*	Dermatology, Gastroenterology*	2% (d)
Minnesota	St. Cloud, MN	Ophthalmology	6%
	Hickory-Lenoir-Morganton, NC	OB/GYN, Gastroenterology	32% (ob)
New Jersey	Trenton-Princeton, NJ*	Radiology*, Urology	5% (u)

(1) State	(2) MSA	(3) Specialty	(4) 3-year post-PE price increase for MSA
Ohio	Dayton-Kettering, OH*	Gastroenterology*, Dermatology	10% (d)
	Columbus, OH	Gastroenterology, Radiology	108% (r)
	Cincinnati, OH-KY-IN	Ophthalmology	26%
Oklahoma	Tulsa, OK	Cardiology	-13%
Oregon	Salem, OR*	Dermatology*	0%
Pennsylvania	Johnstown, PA*	Cardiology*, Oncology, Primary Care*, OB/GYN*	4% (p)
Tennessee	Knoxville, TN	Dermatology, Urology	0% (d) 17% (u)
	Memphis, TN-MS-AR*	Gastroenterology*, Oncology	5% (on)
	Kingsport-Bristol, TN-VA*	Dermatology*, Gastroenterology	11% (d) 49% (g)
Texas	College Station-Bryan, TX	Primary Care, OB/GYN, Urology, Gastroenterology	25% (p) 28% (ob)
	Killeen-Temple, TX*	Cardiology*, Radiology, Oncology*, Orthopedics*, Primary Care*, OB/GYN*, Ophthalmology*, Dermatology*	6% (ob) 12% (p) 18% (on) 4% (or) 4% (d)
	Amarillo, TX	Oncology, Gastroenterology	37% (o) 5% (g)
	Abilene, TX	Ophthalmology	6%

(1) State	(2) MSA	(3) Specialty	(4) 3-year post-PE price increase for MSA
	Longview, TX*	Cardiology, Radiology, Primary Care, Urology, Gastroenterology*	-1% (p)
	Beaumont-Port Arthur, TX*	Orthopedics*, Gastroenterology	-2% (or)
	Tyler, TX*	Orthopedics, Primary Care, Ophthalmology*, Dermatology*, Gastroenterology*	-2% (d) -3% (g) 9% (op) 4% (p) 2% (or)
	Waco, TX*	Oncology*, Orthopedics*, Primary Care, Urology, Dermatology	11% (p)
Wisconsin	Appleton, WI*	Radiology, Dermatology*	12% (d)
	Wausau-Weston, WI*	Dermatology*	16%
N	20 30+% MSAs 17 50+% MSAs 37 MSAs in total		

Sources: Authors' analysis of PitchBook Data, Inc., as of June 15, 2022, OneKey and SK&A Office Based Physicians Database provided by IQVIA, and HCCI's 2012-2021 commercial claims data. PitchBook data has not been reviewed by PitchBook analysts. Notes: g=gastroenterology, on=oncology, or=orthopedics, ob=OB/GYN, d=dermatology, u=urology, c=cardiology, r=radiology, p=primary care, op=ophthalmology, PE=private equity MSA=metropolitan statistical area, N/A=not available. All 37 MSAs in the table had a single PE firm with greater than 30% market share in 2021. The MSAs with an * had a single PE firm with greater than 50% market share in 2021. Only MSAs with 11 or more physicians in the specialty in which the PE acquisition occurred are included. Only MSAs where the first PE acquisition occurred between 2013 and 2018 are included to ensure at least three years of post-acquisition price data. The average price for a specialty in an MSA was calculated as the average allowed amount of claims associated with the most common service (i.e., CPT code) provided by the specialty in the data. The most common CPT codes in the data for the ten specialties we analyzed were 99213 (dermatology, OB/GYN, urology, primary care, orthopedics), 99214 (gastroenterology, oncology), G0202 (replaced by 77067 in 2018) (radiology), 93010 (cardiology), and 92014 (ophthalmology). The price increase reported compares the average price in the MSA three years after the first PE acquisition to the average price the year before the first PE acquisition.