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Physician Turnover Increased In Private Equity–Acquired Physician Practices

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BACK

Consolidation of physician practices by private equity (PE) firms has accelerated, raising concerns that PE's emphasis on short-term profitability may exacerbate physician turnover, with implications for care continuity. Despite their significance, evidence on how PE acquisitions affect physician turnover is limited. Using clinician-level data linked to practice acquisition data from the period 2014–21, we used a difference-in-differences design to examine changes to physician employment and turnover after PE acquisition of 200 ophthalmology practices with 1,980 clinicians. Relative to matched controls, PE-acquired practices increased the total number of clinicians by 46.8 percent through three years after acquisition. This growth was driven by increases in the numbers of both ophthalmologists and optometrists (30.7 percent and 36.2 percent, respectively). PE acquisitions also increased physician turnover, with the share of physicians leaving PE-acquired practices from one year to another increasing by 13 percentage points, or 265 percent, after acquisition, relative to non-PE-acquired practices. Findings highlight how PE acquisitions of physician practices are reshaping physician employment and workforce stability. As PE expands its footprint, policy makers should monitor the long-term implications of PE ownership on physician employment and turnover to mitigate potential undesirable effects on patient health.

TOPICS

PHYSICIANS | PHYSICIAN PRACTICES | PRIVATE EQUITY | PHYSICIAN WORKFORCE | OPTOMETRISTS | HEALTH CARE PROVIDERS | OWNERSHIP | COSTS AND SPENDING | MEDICARE | ACCESS AND USE

Consolidation of physician practices has accelerated under several types of corporate ownership, with unexamined potential to change the physician workforce. One example is the consolidation of independent practices by private equity (PE) firms,[1] an accelerating trend in procedural specialties such as dermatology, ophthalmology, and gastroenterology.[2–4] In general, PE firms invest in physician practices to generate above-market returns and resell the practice within three to seven years.[3,5] Although PE acquisitions can generate benefits through capital infusions and technological investments, PE's short-term profit incentives raise concerns regarding physician employment and long-term practice stability.

PE acquisition of physician practices is associated with higher health care spending through higher prices, increased patient utilization, and changes in physician practice patterns.[6–13] The growth of PE investments in physician practices has also led to

legislation. Despite their significance, less is known about the implications of growing PE acquisitions for the clinical workforce. PE acquisitions can affect the clinical workforce along several dimensions. First, because PE firms rely on a "platform and add-on" strategy to grow acquired physician practices, PE acquisitions may increase the total number of clinicians employed by the acquired practice.[14] Second, PE's emphasis on cost reductions may favor the hiring of advanced practice providers, who may be less costly to employ than physicians.[4,15] Finally, PE acquisitions may increase physician turnover if acquisitions are accompanied by changes to practice management and operations that affect clinicians' autonomy, practice conditions, and job satisfaction. Physician turnover is a key concern for health care organizations because of high replacement costs related to recruitment, as well as indirect costs related to patients' access to and the continuity and quality of care.[16]

Ophthalmology continues to be an attractive target for PE investors.[2–4,12,17,18] As of 2019, an estimated 10 percent of the ophthalmology workforce was affiliated with a PE-acquired practice.[4] Prior research has shown that PE acquisitions in ophthalmology increase Medicare spending through changes in the use of certain procedures.[7,12] The ophthalmology workforce includes ophthalmologists (medical or osteopathic doctors who perform surgical eye care) and optometrists (who provide primary eye care but typically are not licensed to perform surgical procedures). Although the annual turnover rate among ophthalmologists is estimated to be approximately 9 percent,[19] there is no systematic evidence on how the sustained growth of PE acquisitions in ophthalmology affects physician turnover.

Addressing this knowledge gap is critical in the context of policy efforts to expand health care access through workforce expansion and mobility. As states debate expanding optometrists' scope of practice, PE's incentives to cut costs may result in PE-acquired practices relying more on optometrists than on ophthalmologists with greater training and expertise, with unknown implications for care quality.[20] Finally, examining PE acquisitions and their impact on the health care workforce is timely, given recent actions to ban the use of noncompete agreements in employment arrangements, which may result in higher workforce turnover in the future.[21]

Despite their significance, to the best of our knowledge, only a single study has examined how PE acquisitions affect the physician workforce. This earlier study found that during the period 2016–18, the early years of PE's expansion, PE-acquired practices replaced physicians at a higher rate compared with non-PE-acquired practices.[22] Important gaps in knowledge remain, including the extent to which PE

the numbers of ophthalmologists and optometrists, the effects of PE acquisitions on physician turnover, and whether findings from earlier acquisitions are generalizable to more recent acquisitions after 2018.

In this context, we linked data on PE acquisitions of ophthalmology practices from the period 2014–21 to the Medicare Data on Provider Practice and Specialty files from this period, and we used a difference-in-differences event study design to study how PE acquisitions changed overall practice sizes, numbers of ophthalmologists and optometrists, and rates of physician turnover relative to non-PE-acquired practices.

Study Data And Methods

Data Sources

We linked several data sources to identify providers affiliated with PE ownership across years (see online appendix A1 for additional details).[23] First, to identify PE investments in ophthalmology, we used proprietary data from PitchBook, following methodology outlined in previous research.[6,9,10] We included PE acquisitions from the period 2014–21 and manually expanded this list using a combination of press releases, industry reports, and websites.

After identifying acquired practices, we used web searches to identify the physician owner or owners of the practices and their National Provider Identifiers (NPIs), similar to previous studies.[9,10] Acquisitions were then matched to the practices' Taxpayer Identification Number (TIN) by matching the practice owner's NPI, legal business name, and geographic location to the Medicare Data on Provider Practice and Specialty across the period 2014–21. The Medicare Data on Provider Practice and Specialty files contain all registered providers in the US who billed Medicare at least once and are registered in the Provider Enrollment, Chain, and Ownership System. Using the Medicare Data on Provider Practice and Specialty, we then identified all NPIs associated with the owner's practice and followed them over time. The majority of practices' TINs in our sample remained constant after acquisition (91 percent; $\mathbf{n = 182}$), whereas 9 percent of TINs were discontinued after acquisition ($\mathbf{n = 18}$).

Statistical Analysis

We examined workforce change in two different ways. First, using methods consistent with previous work on clinician composition changes,[22,24] we calculated

ratio was defined as the cumulative number of entering clinicians during 2014–21 divided by the cumulative number of exiting clinicians during this period. A clinician replacement ratio greater than 1.0 suggests more entering than exiting clinicians. We stratified these calculations by clinician type (ophthalmologists versus optometrists) and by physician age.

Second, we used a difference-in-differences event study to examine differential changes in practice size, numbers of ophthalmologists and optometrists, and physician turnover rates in PE-acquired practices relative to matched controls. PE-acquired practices were matched to controls in 2015, the first year of acquisitions in our sample. Non-PE control practices were never acquired by PE firms. They were identified using 2:1 caliper matching without replacement that required exact match on state and a match within one standard deviation for preacquisition practice size, defined as the total number of unique clinician NPIs associated with a practice. Overall, 200 PE-acquired practices matched to 403 control practices (93.8 percent match rate).

We compared preacquisition characteristics for acquired practices and matched controls by examining parallel trends in preacquisition differences. In the event study analyses, event time 0 denoted the year of acquisition. We used data from four years before acquisition (for example, event time −4 through −1) through four years after (for example, event time 1 through 4), with the year before acquisition (event time −1) as the reference period. The unit of analysis was the practice-year. A linear difference-in-differences regression compared changes in the outcomes of interest in PE-acquired practices relative to matched controls, before and after acquisition. For outcomes of interest, we calculated the adjusted differential change in percentage terms by dividing the difference-in-differences estimate by the unadjusted preacquisition mean of the outcomes among PE practices. All regressions included practice and year fixed effects, and standard errors were clustered at the level of the matched cohort (each PE-acquired practice and its matched controls).

In sensitivity analyses, we examined parallel trends using joint *F*-tests for the null hypothesis that all pretreatment coefficients were equal to 0. We used robust estimators to assess the sensitivity of our findings to differential timing of acquisitions and heterogeneous treatment effects.[25] We also estimated results excluding the practices that changed TINs after acquisition.

Primary outcomes at the practice-quarter level included the practice size or total number of clinicians, total number of ophthalmologists (physician specialty 18), and

Medicare Data on Provider Practice and Specialty). We estimated physician turnover as instances when an ophthalmologist's NPI separated from one or more group practice affiliations from one year to the next. This definition follows previous studies of workforce mobility and physician turnover.[19,26,27] To estimate the physician turnover rate, following previous research, the denominator was defined as the number of unique NPI and practice TIN combinations. We calculated the rate of turnover as the annual proportion of physicians who were separated from their group practice affiliation in each year window from 2015–16 through 2020–21.

Finally, in descriptive analysis, we examined the characteristics of physicians exiting practices, including sex, age, and the distance that exiting physicians needed to move for their subsequent practice affiliation. This distance was calculated as the distance between the ZIP code of the practice (TIN) exited by the physician and the ZIP code of the subsequent practice (TIN) that the physician became affiliated with, using data from the National Bureau of Economic Research ZIP Code Distance Database.

Limitations

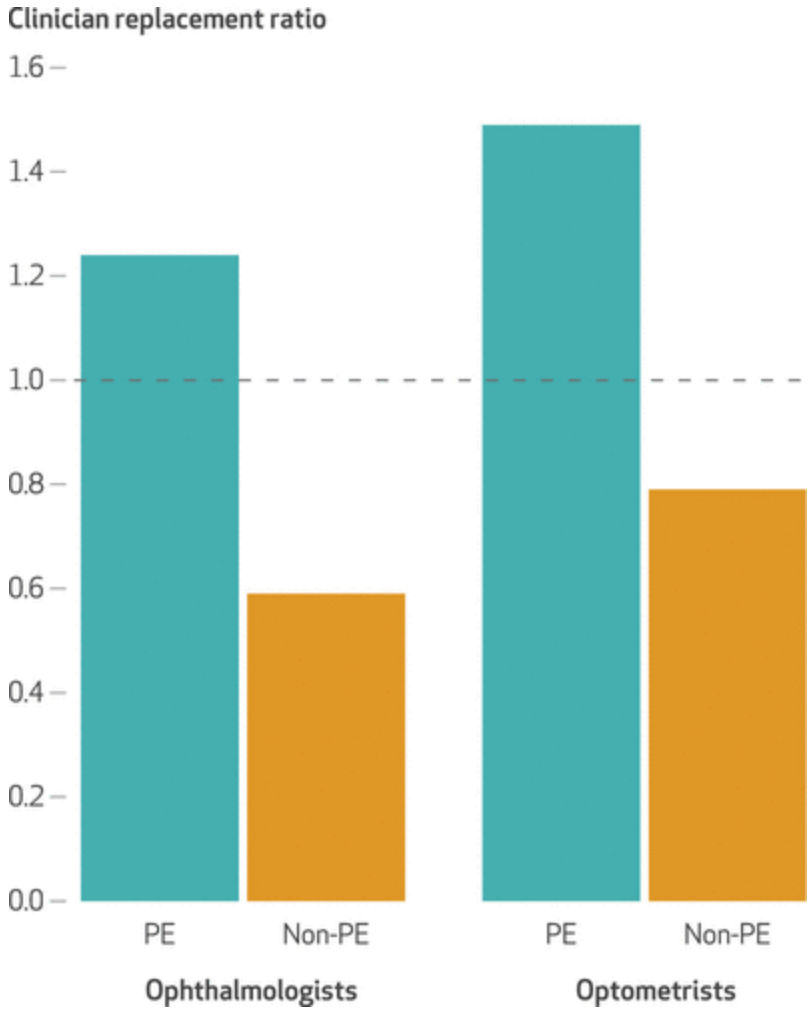
Several limitations are worth noting. First, our data might not have captured all PE acquisitions. Second, we were limited to Medicare data, so our estimates did not account for physicians who did not see Medicare beneficiaries, although this is uncommon within ophthalmology. Third, we were unable to determine reasons for turnover and could not specify whether physician turnover was driven by retirement, termination resignation, or transition to other careers. Future research can separately examine physicians who leave a practice because of retirement, physicians who moved from one practice to another for alternative employment, and those who stopped practicing entirely, following an alternative methodology outlined by Amelia Bond and colleagues.[28] Fourth, it is also possible that a clinician could have changed practice affiliation in the Medicare Data on Provider Practice and Specialty in years after an acquisition but still be employed within the same parent organization. In the event of incomplete parent ownership data, it is possible for clinicians to have been incorrectly identified as exiting in these cases. Finally, the Medicare Data on Provider Practice and Specialty were only available through 2021, precluding analysis of recent acquisitions, the role of the COVID-19 pandemic, effects of subsequent buyouts, and other trends that might have exacerbated the observed trends.

Study Results

Clinician Replacement Ratio

acquired by PE firms during the period 2019–21, including 1,241 ophthalmologists and 739 optometrists (appendix exhibit A2).[23] In aggregate across the entire study period, PE-acquired practices had a higher clinician replacement ratio than non-PE-acquired practices (exhibit 1). Entering clinicians replaced exiting clinicians at higher rates in PE-acquired compared with non-PE-acquired practices (1.32 compared with 0.42; appendix exhibit A3)[23] for both ophthalmologists (1.24 compared with 0.59) and optometrists (1.49 compared with 0.79) (exhibit 1).

Exhibit 1 Clinician replacement ratios in private equity (PE)-acquired ophthalmology practices versus matched controls, 2014–21



SOURCE Authors' analysis of data from PitchBook and the Medicare Data on Provider Practice and Specialty. NOTES The clinician replacement ratio is the cumulative number of entering clinicians during the period 2014–21 divided by the cumulative number of exiting clinicians and is calculated at the ownership level. A ratio greater than 1.0 suggests more entering than exiting clinicians. "Matched controls" are non-PE-acquired practices, with the matching procedure described in the text.

physicians in both PE-acquired and non-PE-acquired practices (appendix exhibit A3).[23] Among physicians younger than age forty, the replacement ratio in PE-acquired practices was 2.28, compared with 1.08 in non-PE-acquired practices. For physicians ages 40–60, the replacement ratio was 1.09 in PE-acquired practices, compared with 0.42 in non-PE-acquired practices. The only group for which the number of exiting clinicians exceeded the number of entering physicians in PE-acquired practices was physicians older than age sixty, with the replacement ratio for PE-acquired practices equal to 0.74, compared with 0.35 in non-PE-acquired practices.

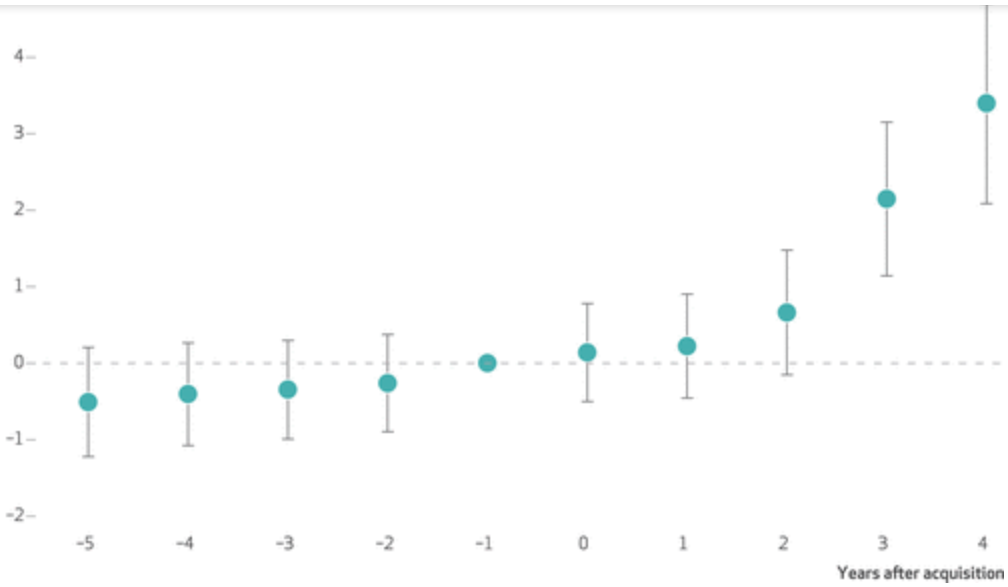
Changes In Outcomes After Acquisition

Appendix exhibit A4 presents descriptive statistics for the 200 PE-acquired practices and their matched controls in 2015.[23] In the preacquisition period, practices acquired by PE had a greater number of clinicians relative to non-PE-acquired practices (6.29 clinicians in PE-acquired practices relative to 1.85 clinicians in non-PE-acquired practices). Preacquisition trends were parallel among primary outcomes (appendix exhibit A5),[23] supporting the identifying assumption that group differences would have remained constant in the absence of acquisition.

Exhibit 2 presents adjusted event study estimates. It shows differential changes in the practice sizes of PE-acquired and non-PE-acquired practices before and after acquisition. After PE acquisition, acquired practices demonstrated a consistent differential increase in practice size by 2.70 clinicians per practice, or 46.8 percent, through three years postacquisition (exhibit 3). The number of ophthalmologists increased by 1.48 physicians, or 30.7 percent, and the number of optometrists increased by 1.15 optometrists, or 36.2 percent, through three years postacquisition (exhibit 3 and appendix exhibit A6).[23]

Exhibit 2 Effect of private equity (PE) acquisition on ophthalmology practice size, relative to matched controls, 2014–21

BACK



SOURCE Authors' analysis of data from PitchBook and the Medicare Data on Provider Practice and Specialty. NOTES Each point in the figure represents the coefficient obtained by estimating an event study regression, in which we compared practice size (total number of clinicians) in PE-acquired practices with that of matched controls up to 4 years after acquisition. The unit of analysis was the practice-year, with event time 0 denoting the year of acquisition. Event study regressions included practice and time fixed effects, and standard errors were clustered at the level of the matched cohort, as explained in the text. "Matched controls" are non-PE-acquired practices, with the matching procedure described in the text. Whiskers represent 95% confidence intervals.

Exhibit 3 Differential changes in outcomes in private equity (PE)-acquired ophthalmology practices and m controls, before and after acquisition, 2014–21

	PE acquired		Non-PE-acquired		Difference in differences[a]		
	Pre	Post	Pre	Post	Unadjusted	Adjusted	% change
Practice size (no. of clinicians)	5.77	9.78	4.58	5.02	3.57	2.70	46.8
No. of ophthalmologists	4.81	7.14	4.29	5.28	1.34	1.48	30.7

BACK

	PE acquired		Non-PE acquired		Difference in differences[a]		
	Pre	Post	Pre	Post	Unadjusted	Adjusted	% change
No. of optometrists	3.17	5.15	3.31	3.09	2.20	1.15	36.2
Turnover rate	4.93%	22.22%	7.74%	8.84%	16.19[b]	13.04[b]	264.5%

SOURCE Authors' analysis of data from PitchBook and the Medicare Data on Provider Practice and Specialty. NOTES Unadjusted and adjusted differential changes in outcome variables were averaged at the practice level for PE-acquired practices and matched controls (non-PE-acquired practices, with matching described in the text). Adjusted regression coefficients were estimated using a linear difference-in-differences model that included practice and time fixed effects. Standard errors were clustered at the level of the matched cohort, as explained in the text. Adjusted percentage differential change (the column labeled "% change") was calculated by dividing the adjusted differential change obtained from the difference-in-differences regression by the preacquisition mean for PE-acquired practices.

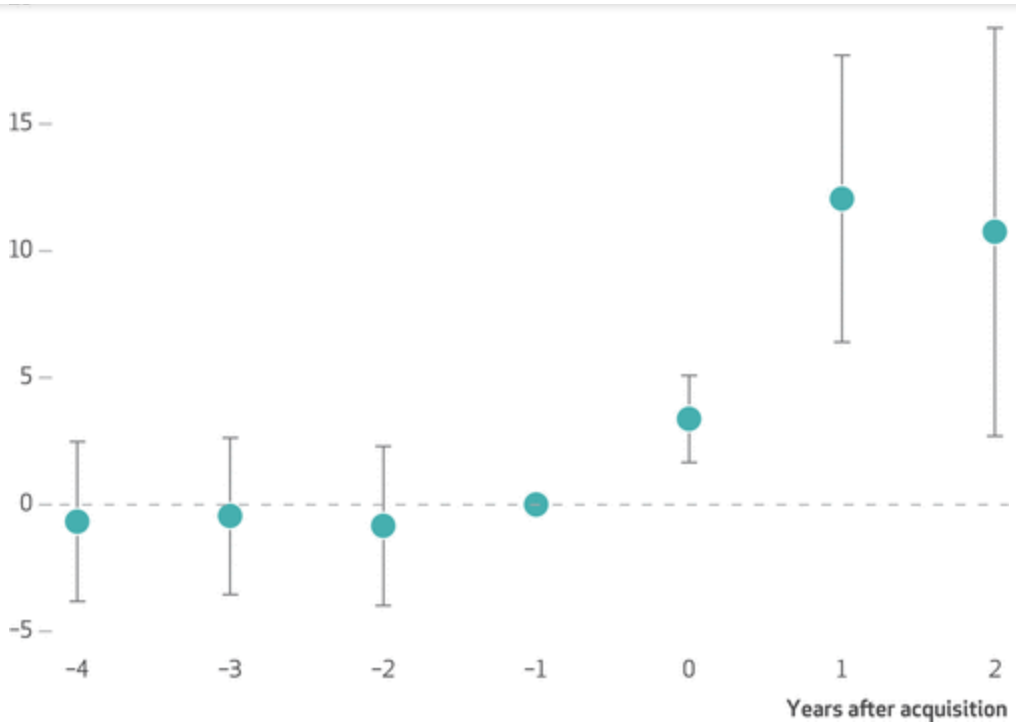
a Difference in differences between PE-acquired practices and matched control practices or the differential change.

b Percentage points.

Compared with controls, PE-affiliated practices demonstrated differential increases in physician turnover rates after acquisition (exhibit 4). Across the postacquisition period (exhibit 3), physician turnover rates increased by 13.04 percentage points in PE-acquired practices, or 264.5 percent, relative to baseline.

Exhibit 4 Effect of private equity (PE) acquisition of ophthalmology practices on physician turnover, relative to matched controls, 2014–21

BACK



SOURCE Authors' analysis of data from PitchBook and the Medicare Data on Provider Practice and Specialty data. NOTES The physician turnover rate is defined as the annual proportion of clinicians who were separated from their group practice affiliation in each year window from 2015–16 through 2020–21. Each point in the figure represents the coefficient obtained by estimating an event study regression, in which we compared outcomes in PE-acquired practices with those of matched controls up to 3 years after acquisition. The unit of analysis was the practice-year, with event time 0 denoting the year of acquisition. Event study regressions included practice and time fixed effects, and standard errors were clustered at the level of the matched cohort, as explained in the text. "Matched controls" are non-PE-acquired practices, with the matching procedure described in the text. Whiskers represent 95% confidence intervals.

Preacquisition trends were parallel among primary outcomes (appendix exhibit A7).[23] Results were consistent using the 2021 estimator from Brantly Callaway and Pedro Sant'Anna[25] to account for the staggered timing of acquisitions and potential heterogeneous effects (appendix exhibit A8) and after excluding TINs that changed after acquisition (appendix exhibit A9).[23]

Characteristics Of Physicians Exiting Practices

Appendix exhibit A10 presents descriptive statistics for 300 physicians exiting PE-acquired practices and 791 physicians exiting non-PE-acquired practices.[23] Physicians exiting PE-acquired practices were more likely to be ages 40–60

mostly younger than age 40 (59.2 percent). In addition, physicians exiting PE practices were less likely to be female (26.0 percent of physicians exiting PE practices relative to 40.6 percent of those exiting non-PE-acquired practices) and older (average age of physicians exiting PE practices was 49.8, relative to 42.1 among those exiting non-PE-acquired practices). Finally, physicians exiting PE-acquired practices moved 103 miles, on average, for subsequent employment, relative to 91 miles for those exiting non-PE-acquired practices, although this difference was not statistically significant.

Discussion

In these national estimates of physician turnover in PE-acquired physician practices, we documented several notable trends in physician employment after PE acquisitions in ophthalmology. First, consistent with previous research,[22] we found clinician replacement ratios higher than 1.0 under PE ownership versus ratios lower than 1.0 under non-PE-acquired practices (matched controls), suggesting that PE-acquired practices hired physicians at a higher rate than the rate at which physicians exited relative to matched controls. Second, using a difference-in-differences design, we found a statistically significant increase in practice size after PE acquisition, driven by increases in hiring of both ophthalmologists and optometrists. Finally, we found a statistically significant increase in the physician turnover rate after PE acquisition. These are important insights into how the growth of PE is reshaping the physician workforce, suggesting a need for further research into the implications for continuity of care.

“Our findings provide new evidence to contextualize the effects of PE on the clinical workforce.”

Our finding that PE acquisitions increased overall practice size through growth in numbers of both ophthalmologists and optometrists provides new evidence to contextualize the effects of PE on the clinical workforce. Although prior research has found that PE acquisitions increased the number of advanced practice providers in procedural specialties,[9,22] an important question that remained unanswered was whether the growth in advanced practice providers reflected a substitution away from physicians or a complementary addition to the physician workforce. By documenting

acquisition, our findings suggest that PE acquired practices in ophthalmology view ophthalmologists and optometrists as complementary providers, rather than substitutes. As states consider expanding the scope of practice for optometrists, an important area to examine will be whether the effects of PE acquisition vary across state-specific regulation, including scope-of-practice expansion.[29] Equally important will be an examination of how PE acquisition affects the clinical workforce across different specialties, including areas such as primary care that face a growing role for advanced practice providers.

To our knowledge, our study was the first analysis to examine and quantify the increase in physician turnover after PE acquisitions of physician practices. Our estimate of baseline physician turnover rates in non-PE-acquired practices was around 9 percent, consistent with previous research.[19] Our analysis found that PE acquisitions increased physician turnover rates by 13 percentage points, or 265 percent, relative to baseline. PE firms may increase physician turnover by altering performance incentives, practice conditions, physician autonomy, and job satisfaction.[5,30] At the same time, other factors including burnout, earning potential, and retirement may influence a physician's decision to leave their practice.[19] Although we were unable to differentiate between physicians who moved from one practice to another versus those who stopped practicing entirely, future research can examine factors that lead to higher physician turnover after PE acquisition, including physician retirement.[28]

Our findings also highlight differences between generations of physicians that may shape physician turnover: Younger physicians were more likely to switch positions, possibly to optimize their work-life balance, whereas older physicians remained with an employer, possibly for loyalty and leadership.[19] In addition, younger physicians were less likely than older physicians to be a partner-owner of the practice at the time of acquisition, which may have limited their financial benefit from the acquisition itself. In contrast, partner-owners typically receive large financial payouts at the time of acquisition that might encourage retirement decisions. Overall, many physicians hold negative perceptions of PE firms, highlighting potential challenges with the longer-term retention and recruitment of clinicians at PE-acquired practices.[30]

There are some similarities, but also a few key differences, between the present analysis and a related study by Joseph Dov Bruch and colleagues that also examined workforce composition in PE-acquired physician practices.[22] First, although Bruch and coauthors examined workforce composition in fifty-six PE-acquired

extended the window of analysis to capture more recent acquisitions and a longer follow-up period. A richer data set also allowed us to examine longitudinal changes to physician turnover, using an event study design.[17] Second, our reliance on the Medicare Data on Provider Practice and Specialty data set provided visibility into the optometry workforce, an increasingly important group of clinicians within ophthalmology that had been omitted in earlier work.[31]

"Our study has important implications for the ophthalmology workforce, with broader takeaways for the physician workforce."

Our study has important implications for the ophthalmology workforce, with broader takeaways for the physician workforce. PE's "platform and add-on" strategy that results in increased market share in certain geographic areas[2,3] can influence the availability of employment opportunities in desirable locations and require physicians to move farther distances in search of non-PE employment. Consistent with the limited availability of non-PE-acquired practices in certain geographic areas,[2] we found that physicians exiting PE-acquired practices needed to move farther distances in search of alternative employment, although this result was not significant. Several factors can influence where physicians move in search of alternative employment, including noncompete agreements that limit physicians' ability to work for, or establish, a competing practice within a certain geographic radius after separating from a practice.[32] Although data on noncompete agreements are limited because of nondisclosure agreements, anecdotal evidence suggests wide variation in the nature of physician noncompete agreements across ownership types, ranging from a one-year, 35-mile noncompete agreement to a two-year, 100-mile noncompete agreement.[33,34] An important area for researchers and policy makers to monitor is how current efforts to ban noncompete agreements affect the health care workforce.[21] On the one hand, a ban on noncompetes might make it easier for physicians to leave undesirable employment arrangements; on the other hand, these changes might also result in higher turnover in the future.

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