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REVIEW

The Risks and Benefits of Physician Practice Acquisition and Consolidation: A Narrative Review of Peer-Reviewed Publications Between 2009 and 2022 in the United States

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Abstract: The objective of this narrative review was to assess current literature regarding acquisition and consolidation of physician practices in the United States (US). The acquisition and consolidation of physician practices is a trend affecting patient care, quality of services, healthcare economics and the daily practice of physicians. As practices are acquired by fellow physician groups, private equity investors and entities such as hospitals or large healthcare systems, it is important to better understand the underlying forces driving these transactions and their effects. This is a narrative review of peer-reviewed publications to determine what current literature has covered regarding the acquisition and consolidation of physician practices in the US regarding risks and benefits of this trend. Sources included the SCOPUS, Medline- PUBMED and Web of Science databases. Peer reviewed publications from 2009 to 2022 were included for initial review and curation for relevance using the search terms "physician" and "practice" with either "acquisition" or "consolidation". Synthesis conducted after narrowing down of relevant articles did not use quantitative measurements, but instead examined overall trends, as well as risk and benefits of ongoing acquisition and consolidation in a narrative format. Journal articles focused on physician consolidation in the US often reported increases in physician numbers with decreases in numbers of individual practices. Private equity quantitative analyses reported rapidly accelerating acquisitions driven by these investors, and vertical integration scholarly work reported frequent geographic consolidation of nearby practitioners. Risks associated with these transactions included such items as decreased physician autonomy and higher cost of care. Benefits included practice stability, improved negotiation with insurers and improved access to resources.

Keywords: healthcare economics, physician practice, physician practice acquisition, systematic review

Introduction

The acquisition and consolidation of physician practices is a well-documented phenomenon in the United States (US) that is likely closely associated with an ever-increasing web of legal and regulatory hurdles confronted by medical practitioners.[1–3] Physician practices may be acquired by hospitals and healthcare systems, private equity investors,[4–6] or practice management groups, who will directly employ the medical practitioners, and assume responsibility for financial and administrative matters.[7]

Numerous potential consequences of this trend have been identified including increased market power with associated antitrust concerns,[8–10] increased healthcare spending on a per-patient basis,[11–16] modifications to physician compensation[17] and productivity,[18] and changes in referral patterns.[19,20] With the introduction and passage of the Affordable Care Act in 2009 and 2010, there were significant changes, and effects on, physician practice patterns both in clinical care and in the business of medicine.[21–23] The United States is unique in that it is the only high-income country in the world without a guaranteed right to healthcare access, and spends significantly more per citizen than comparable

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countries with worse outcomes in life expectancy at birth, maternal and infant mortality and suicide rates.[24] In the wake of the financial crisis in 2008 and 2009, financial pressures on all stakeholders in the healthcare system in the US caused an acceleration in the rise of corporate medicine, resulting in mergers and acquisitions of medical institutions and physician practices.[25]

Physicians in acquired practices report unique stressors, such as the loss of clinical autonomy,[20,26] though many also reported improved work environments, improved psychological safety, and decreased rates of burnout in the new practice model.[27] Alternatively, some studies have found no effect on healthcare spending or use of specialty-specific procedures, suggesting no additional pressure on clinicians to meet performance standards following acquisition.[28] Physicians may be offered such incentives as higher pay with lower workloads to promote acquisition.[29] It is unclear if quality of care is affected by this trend.[30,31]

The purpose of this review is to assess the current literature regarding consolidation of physician practices, and to effectively outline associated risks and benefits identified in these various investigations, seeking common elements.

Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines were used to guide the conduct and report of this review.[32] A comprehensive search was conducted in SCOPUS, Medline-PUBMED, and Web of Science for all scholarly work including the search terms "physician" and "practice" with either "acquisition" or "consolidation" from 2009 to 2022. The beginning year of 2009 was chosen due to the passage of the Affordable Care Act, which was hypothesized by the research team to have significantly affected the overall trends regarding physician practice acquisition and consolidation. Search criteria was evaluated in the titles, abstracts and keywords of all included papers. The search was conducted on August 15, 2022, and results were exported into a library in Microsoft EndNote. All duplicate papers were then removed from the search results prior to further analysis.

Two researchers working independently subsequently evaluated the titles of all remaining journal articles to remove any items deemed out of scope for the evaluation of physician practice acquisition and consolidation. Out of scope papers included those unrelated to physician practice acquisitions and consolidations. All papers that were written outside the United States were also removed. The determination was made to include all papers on this topic that included a quantitative assessment of physician practice and consolidation, thereby removing all papers that included only a qualitative assessment and those that provided only commentary (without data) on acquisition. Also removed from analysis were papers that assessed resultant effects of consolidation, and analyzed regulations or considerations related to purchase of practices. The full text of the remaining articles were then retrieved by the research team. The full text was then reviewed to determine if they met the above criteria.

Peer-reviewed research included were then assessed for the following information: specialty examined, type of study, data sources, time period evaluated, outcomes, risk and reporting of bias, and risks/benefits of consolidation. Bias was extracted by assessing the stated limitations or bias in each paper analyzed. This data was compiled into spreadsheets using Microsoft Excel, and all assessments conducted by at least two members of the research team.

Results

Following a comprehensive search in SCOPUS, Medline-PUBMED and Web of Science, 2321 records were found to meet the selected keywords, and 539 duplicate records were subsequently removed (Figure 1). The remaining 1782 articles were screened and 210 articles were excluded for dates of publication prior to 2009, and 1457 were removed because they were deemed out of scope for the study. Full text was obtained for the resultant 115 scholarly publications. After review of the full text, 89 articles were excluded for such reasons as description of a qualitative (instead of quantitative) analysis,[7,26,29,33] evaluations of post-acquisition considerations,[34–39] and a narrow focus on governmental regulations.[40–44]

Twenty-six (26) articles remained for inclusion into the systematic review, and their resultant characteristics are located in Figure 2, including type of analysis, specialty analyzed, and years of data reviewed. Fifteen of these articles analyzed physician consolidation, or the change in number of physicians and distinct number of practices in a given specialty.[45–59] All of these investigations revealed an increase in the number of physicians practicing, with all but one[54] showing a decrease in the number of practices during the study period. Articles are located in Supplementary Table 1 and outcomes of the investigation

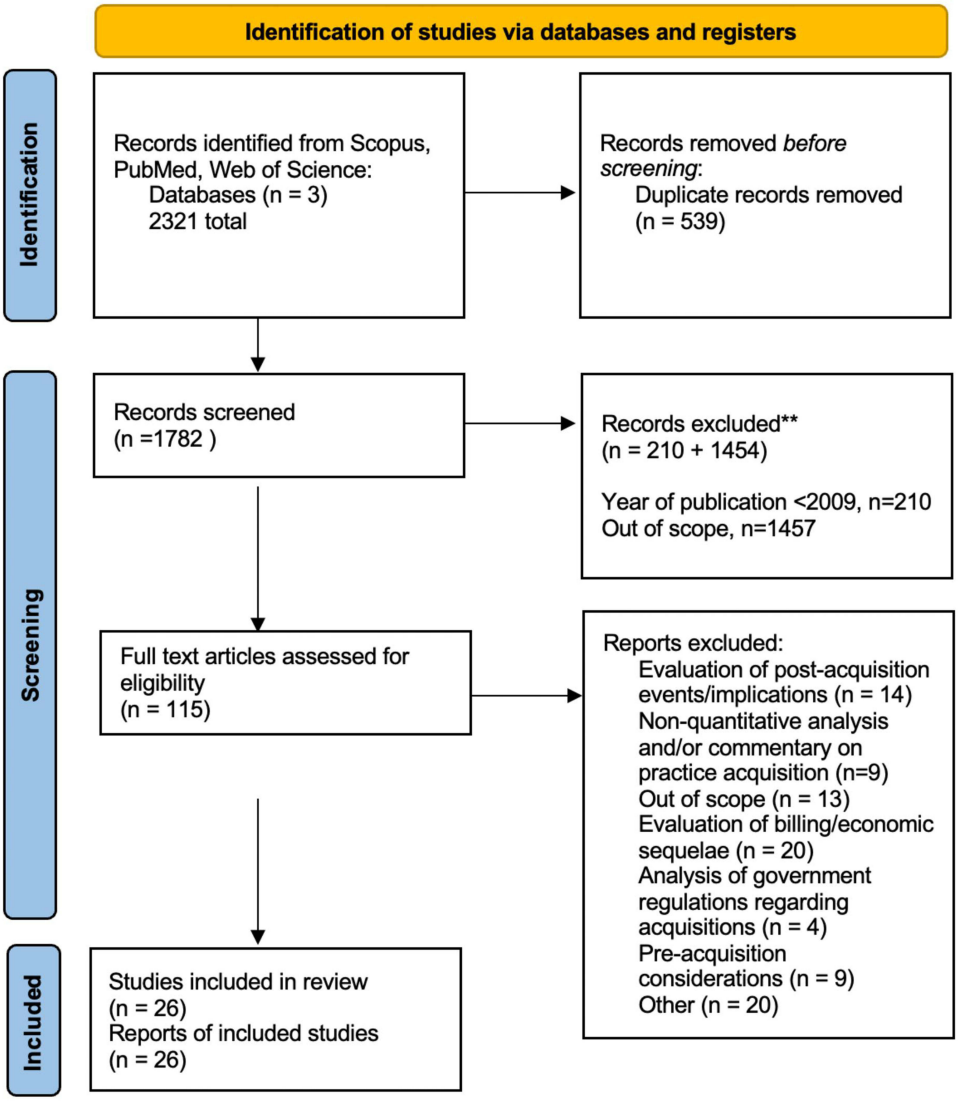

Figure 1 PRISMA 2020 flow diagram for systematic review in which records were identified from 3 scholarly databases and narrowed for selection and evaluation. Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.[32]

are delineated therein, including the rates and numbers of physician practice acquisition and consolidation by study. For example, Anderson et al report that between 2012 and 2020, despite an increase in numbers of general surgeons by 3%, the number of discrete practices decreased by 21%.[45] Further data in Supplementary Table 1 outline the potential risk of bias and reported bias, and any stated risks and benefits of consolidation.

Six of the articles analyzed the acquisition and consolidation conducted by private equity firms.[60–65] These included a review of PE acquisitions in orthopedic surgery, urology, dermatology, multispecialty practices, and two studies in ophthalmology. The number of acquisitions analyzed during the respective study periods ranged from 41 by Boddapati et al[60] to 355 by Zhu et al.[65] The number of firms purchasing practices ranged from 17 to 34 in each specialty analyzed. One publication describing PE acquisition of ophthalmology practices did not report specific numbers of acquisitions or PE firms,[63] and Zhu et al[65] did not report the number of PE firms involved in their analyzed purchases.

The remaining 5 studies assessed practice consolidation via vertical integration, or the acquisition of physicians into a hospital system or larger healthcare entity.[66–70] All but one of these studies detailed multispecialty practice vertical integration, with one paper including data for surgical oncologists.[68] These scholarly works often reported vertical integration on a percentage basis, such as the percentage increase in consolidation,[66,67,69] percent change in employed

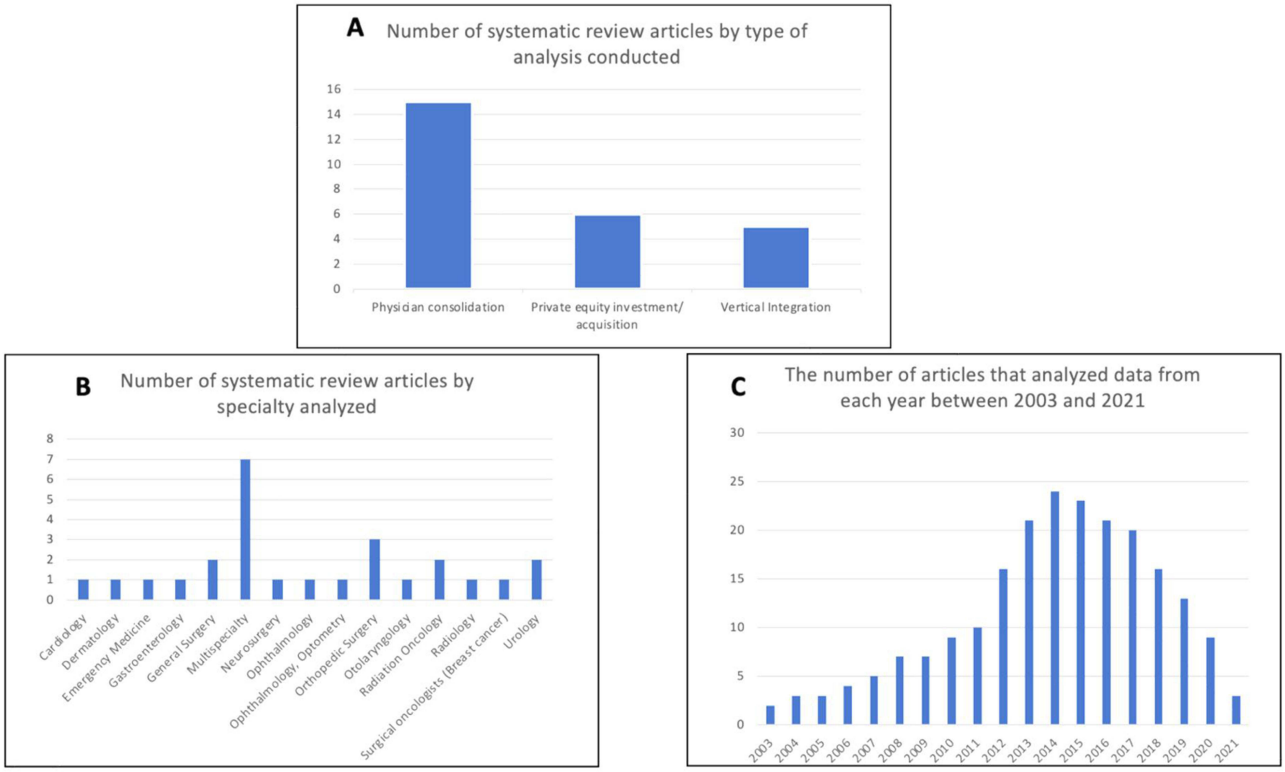

Figure 2 Identifying factors regarding the 26 scholarly works included for systematic review. **A**- breakdown of papers into three categories by type of acquisition analyzed; **B**- summary statistics regarding specialties examined; **C**- summation of years in which data was obtained from review articles included.

physicians in a particular specialty,[68] or percent acquisition by different entities such as hospital systems or larger practice groups.[70]

Many of the studies that assessed physician consolidation outlined similar reporting bias due to their use of the same data source- The Centers for Medicare and Medicaid Services Physician Compare Database. This source limits analysis to physicians participating in Medicare, affecting the ability to include data on doctors who primarily practice in pediatric populations. Risks of bias in this cohort often included difficulty assessing group dynamics or structures, limited assessment due to focus on a single specialty, no determination of resultant effects of consolidation, and limitations due to use of CMS data which may not elucidate the effects of multispecialty practices.

Reporting bias for studies assessing private equity acquisitions is attributed in all studies (reported by their respective authors) to the lack of transparency regarding these deals. They are not publicly reported in their entirety, and obtaining data regarding PE deals is subject to the availability of data in the private databases analyzed. The risks of bias in studies assessing private equity acquisitions is associated with numerous missing PE transactions, small sample sizes, low generalizability of data and lack of data on outcomes of acquisitions. This fact is cited repeatedly in the relevant papers reviewed. Studies assessing vertical integration are affected by reporting bias such as missing national representation of practices, limited geographic areas for analysis and the use of self-reported data. Risk of bias was attributed to small sample sizes, lack of generalizability of data, limited specialties analyzed, and a lack of determination of the status of secondary providers within acquired practices. Utilizing the Oxford Centre for Evidence-Based Medicine: Levels of Evidence, all studies were rated 2C regarding the certainty of evidence.[71]

Finally, a review was conducted regarding the stated benefits and risks of consolidation, as described in each of the review articles included for analysis. Numerous risks and benefits were outlined in the review articles (Supplementary Table 1), and are summarized in Table 1. Stated benefits of the consolidation of physician practices include such considerations as an increased referral base, access to resources, technology, infrastructure, practice stability and improved negotiation with insurers. Potential risks to physician practice consolidation include such items as a decrease in provider autonomy, limit

Table 1 Summary of Risks and Benefits of Physician Practice Acquisition and Consolidation as Reported in the Papers Included for Systematic Review

Benefits of consolidation	Risks of consolidation
Increased referral base	Decrease provider autonomy
Access to resources, technology, infrastructure	Limit access to providers outside network
Practice stability	Higher costs of care
Improved negotiation with insurers	Unclear oversight requirements for secondary providers
Lower costs, increased practice efficiency	Difference in priorities between leaders and providers
Investment in new facilities, equipment, etc	Decreased access to care for underserved populations
Improved ability to navigate complex regulatory issues	Lower income for physicians
Shared burden of costs for equipment, software and personnel	Possibly lower quality of care
Improved access to capital	Higher rates of use of specialized care
Coordinated patient care	Decreased physician competition
Greater control over personal schedule	Financial conflict of interest
Higher practice revenue	Substitution by physician extenders
Centralization of administrative tasks	Pressure to generate higher revenue
Reduced cost of overhead	Standardized care may supersede individualized care
Improved perceptions of workplace, lower burnout	Removal of low-performing physicians
Expanded market reach	Lack of integration of acquired practices

access to providers outside a set network and higher costs to care. Several stated risks and benefits were cited by more than one study, such as financial considerations and access to capital for investment in discussion of benefits. Two of the included papers did not describe potential risks and benefits in their respective discussions.[67,69]

Discussion

The acquisition and consolidation of physician practices is an important phenomenon that affects medical providers, patients, payers and healthcare systems, as well as all stakeholders in the healthcare industry.[37] The purpose of this analysis was to synthesize the current available data regarding practice acquisitions utilizing a quantitative perspective. Three distinct categories of papers were found to fit this criteria including quantitative analyses of physician consolidation, private equity investment/acquisition and vertical integration. These three categories represent three different pathways to consolidation of practices including merging/purchase by another physician group, a private equity investment firm or a hospital/healthcare system.

There is a rapidly accelerating trend in physician practice consolidation, yielding fewer groups of practicing physicians despite increasing numbers of providers, a finding reinforced by this narrative review. Papers discussing physician consolidation reported increasing numbers of physicians with a decrease in practice number in all but one study. The studies which analyzed private equity deals reported increasing number of PE deals in varying specialties, and studies describing vertical integration noted rapid progression of these transactions as well. Although the data strongly supported these trends, very little (if any) quantitative investigation was conducted regarding outcomes following consolidation.

There are numerous opportunities for further study including financial ramifications of consolidation. These include determining the changes in charges for patients when a new entity assumes management of a practice, or quantifying referral patterns or overall healthcare expenditures. Past studies attempt to analyze financial consequences utilizing a theoretical framework,[8] or in limited subsets of physicians.[38] More commonly, qualitative analyses are undertaken to assess post-acquisition consequences such as strained relations between leaders and physicians[36,72] or financial pressures and effects on clinician autonomy.[26]

Nonetheless, current trends support a future in which physician practices will continue to consolidate, often using one of the three models of acquisition described herein. Evaluation of the viability of a practice is an important step undertaken by the prospective purchaser prior to a monetary offer, and includes numerous considerations and

a strategic plan.[41,73,74] Consultation with a legal team to ensure no violations of antitrust law is also essential, especially when a hospital system is acquiring physician practices.[40]

Potential alternatives to outright acquisition also exist and are described in the literature, such as private equity investment to unlock new growth opportunities and provide capital to improve clinical best practices amongst a practice's practitioners.[75] Leasing a practice may also be considered, in which physicians continue their ownership, but provide services for another entity, which agrees to provide a set reimbursement for a quantity of work.[76] Also important to consider is the possibility of an acquisition of the purchasing healthcare system, which can be accomplished using a potentially risky maneuver such as a leveraged buyout, which saddles the acquired entity with debt.[77]

Several important limitations should be considered when assessing this review of current literature. Undertaking a quantitative analysis of physician practice consolidation is complicated due to the great difficulty in obtaining data for this ongoing trend in. Studies that detailed physician consolidation often relied on publicly available CMS data, although this data indirectly and incompletely describes the trend in a specific specialty. Group numbers and sizes were estimated using Taxpayer Identification Numbers (TINs), though in each study, a significant limitation is present- namely the fact that data is missing on all providers who do not treat Medicare patients. Furthermore, data on private equity deals is well understood to be difficult to procure, due to the very nature that PE deals are not publicly disclosed. This makes assembly of an accurate picture of PE physician acquisition deals nearly impossible to attain, unless a researcher has access to several costly databases such as Capital IQ, Pitchbook, Factiva, etc, although even with such access, one may not gain comprehensive data. Finally, data on vertical integration is limited in detail, often only providing percentages regarding trends in physician acquisition, or concentration in specific geographic locations.

Limitations also exist regarding the review process. Although the search terms yielded more than two thousand scholarly articles, it is possible that additional studies may have been overlooked and not included. The use of SCOPUS, Web of Science and Medline-PUBMED was selected in order to provide the broadest possible collection of articles for review, but nonetheless may not have yielded a comprehensive collection of search results.

As the trend toward ever-increasing consolidation of physician practices increases and continues, numerous opportunities are present for further research, as well as possible intervention by policy-makers. Given the importance of CMS as a payer for physician services, rules and regulations established by Medicare and Medicaid can have significant impact on clinical practice, and may affect consolidation via antitrust legislation and enforcement. CMS and governmental regulators may also intercede given payer considerations with self-referrals to network providers or utilization of a procedural center in which a shared financial interest is present.

Though not included for synthesis into this systematic review, numerous scholarly works are also available regarding evaluations by both economists[41,73] or legal professionals[40,78] regarding healthcare consolidation. Mergers within healthcare are outside the scope of this review, but can have significant impact regarding patient care and systemic costs.

The results of this review may be used to effectively describe the current state of affairs regarding physician practice acquisition and consolidation in the United States as of 2022. This literature shows an ongoing trend towards consolidation with respect to physician practices, along with a host of associated risks and benefits. Although these results are obtained from the United States, if other nations move towards privatized healthcare systems, these trends have the potential to be observed elsewhere around the globe.

Conclusion

The acquisition and consolidation of physician practices is an important phenomenon that has been studied extensively in the current literature. Three models exist for acquisition, including purchase by fellow physician practices, private equity investment entities and healthcare systems or hospitals. Current literature has enumerated the trends towards consolidation, with increases in numbers of physicians, but decreases in smaller practices. This study represents a unique snapshot regarding current literature that examines the ongoing trend of physician practice acquisition and consolidation, and attempts to delineate risks and benefits that have been identified. Numerous opportunities for further study remain, to further outline the risks and benefits of ongoing physician practice acquisitions and mergers.

Data Sharing Statement

All data relevant to the study are included in the article or uploaded as supplementary Information.

Disclosure

The authors declare no conflicts of interest in this work.

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