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Private equity and healthcare firm behavior: Evidence from ambulatory surgery centers

Haizhen Lin [a], Elizabeth L. Munnich [b], Michael R. Richards [c], Christopher M. Whaley [d e], Xiaoxi Zhao [d]

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Highlights

- Study examines private equity (PE) investments in ambulatory surgery centers (ASCs).
- ASC healthcare delivery is largely unchanged after PE involvement.
- Charges for services do increase over time.
- Physician equity stakes in ASCs sharply and substantially increase after PE invests.
- Physician and PE investors exist their ownership positions simultaneously.

Abstract

Healthcare firms regularly seek outside capital; yet, we have an incomplete understanding of external investor influence on provider behavior. We investigate the effects of private equity investment, divestment, and an initial public offering (IPO) on ambulatory surgery centers (ASCs). Throughput is unchanged while charges grow by up to 50% for the same service mix. Affected ASCs witness declines in privately insured cases and rely more on Medicare business. Private equity increases physician ASC ownership stakes, and

both simultaneously divest when the ASC is sold. Our findings appear more consistent with private equity influencing the financing of ASCs, rather than treatment approaches.

Introduction

Raising capital for firm expansion, productivity enhancements (e.g., technology adoption), and/or improved financial position is a regular occurrence for businesses in a variety of industries across the US economy and has been for most of its corporate history. However, a notable shift has taken place over the past 25 years, with private markets overtaking public markets as the predominant sources of external funding (Mauboussin and Callahan 2020). For example, in 2017, US companies received $3 trillion in financing from private markets compared to only half that (i.e., $1.5 trillion) from traditional public markets (Mauboussin and Callahan 2020). Private market investment vehicles' global fundraising has also resumed its upward trend following the retreating pandemic risks from COVID-19––with $700 billion in newly available capital (i.e., "dry powder") for North American funds in 2021 alone (McKinsey and Company 2022).[1]

Although private market funders include various investment industries (e.g., venture capital, real estate trusts, etc.), private equity (i.e., "PE") firms, specifically, are often some of the most highly capitalized and influential entities in this space. Views on private equity's presence and performance in different sectors of the economy have long been mixed, however. Some argue that these firms improve company efficiencies, productivity, and valuations (Jensen 1986, 1988; Agrawal and Tambe, 2016; Davis et al., 2019) as well as spur beneficial job creation (Davis et al., 2014); yet, others contend that key groups are harmed—particularly exposed workers (Shleifer and Summers 1988; Olsson and Tag 2017; Antoni et al., 2019). Associated controversies, coupled with the continued growth of private equity activity, have prompted concerns from industry stakeholders, regulators, as well as policymakers––especially as private equity begins playing larger roles in sensitive industries, such as those belonging to the healthcare sector.

Private equity dealmaking in US healthcare, specifically, has approached nearly $800 billion over the most recent decade, with many anticipating a continued climb (Scheffler et al., 2021). A confluence of factors is likely adding to private equity's affinity for healthcare investments (e.g., demographic trends, chronic disease burden, widespread insurance coverage, technology developments, etc.), but even historically, industry estimates suggest that the private equity returns on healthcare investments have outperformed those made in other sectors of the economy (Bain and Company 2022). Moreover, contemporary physicians are having to navigate an increasingly complex and expensive practice environment in terms of health information technology, insurer contracting sophistication, regulatory compliance, and other business costs that must be covered in order to maintain (much less grow) a financially stable enterprise. These circumstances are making outside investors/owners, including private equity, more attractive options for many physician practices as well as other smaller, more thinly capitalized healthcare firms (Strongwater 2022).

Private equity's recent acceleration within US healthcare has not gone unnoticed, however, and has led to a host of questions and concerns among interested parties (e.g., see Scheffler et al., 2021; Newitt 2022a, 2022b). Many of the concerns can be distilled down to a fundamental unknown: do private equity investors change how healthcare firms provide care or do they simply provide financing and business support

functions to these firms? The latter scenario would not obviously invite regulatory interference and could even benefit providers and patients through expanded and/or more efficient care delivery. However, the former could raise concerns over consumer welfare if, for example, private equity business strategies undermine patients' best interests and therefore lead to more expensive and/or lower quality care going forward. Such undesirable behavior changes could also have dramatic consequences in a $4 trillion sector of the US economy where a lot of private as well as public spending takes place––not to mention where quality erosion could translate to greater risks of permanent harm, and even death, for consumers. Yet, *a priori* arguments favoring either scenario are indeterminate, which makes empirical evidence crucial to better inform ongoing debates around private equity's involvement in US healthcare.

The existing literature devoted to private equity in healthcare is relatively new and largely confined to hospitals, nursing homes, and physician practices (e.g., Braun et al., 2020; Gandhi et al., 2020; Braun et al. 2021a, 2021b; Gao et al., 2021; Gupta et al., 2021; Offodile et al., 2021; Singh et al., 2022; Bruch et al., 2023; Richards and Whaley 2023). While these investments are important and can be individually large, they still represent an incomplete view of aggregate private equity activity across the sector. The impact of other common private equity healthcare investments remains virtually unknown. We therefore extend the literature by focusing on an influential and growing dimension of care (outpatient surgery) and key contributing industry (ambulatory surgery centers: ASCs) where private equity has been aggressive (Newitt 2022c), but as far as we are aware, only limited research has been pursued.

At this time, a rapidly growing share of all medical services has been migrating to outpatient delivery for many years (Munnich and Parente 2018; Baker et al., 2019)––forcing even the hospital industry to adapt to this new normal, as its inpatient and outpatient revenue streams are now roughly equal in size (AHA 2020). ASCs, however, rival hospitals and often compete away profitable cases belonging to traditional Medicare and privately insured patients (MedPAC 2021). The ASC industry currently captures 60% or more of all outpatient procedural care (Frack et al., 2017) and is composed of over 5000 individual firms spread out across the US (Munnich and Richards 2022). Industry insiders estimate that it has a total market value approaching $30 billion,[2] and unlike hospitals, ASCs are also overwhelmingly privately held, small, and for-profit firms. These latter ASC industry features suggest particularly attractive investment opportunities for private equity, which may differ from many other prominent healthcare companies and products. With only one-to-few owners, a typical ASC is likely to have limited capital reserves, which can restrain growth and investment potential and consequently invite outside financial resources to achieve such objectives. Additionally, the ASC industry is unique within the US healthcare sector in that it is composed of firms that are overwhelmingly independent (i.e., non-integrated). Other major healthcare industries (e.g., hospitals, physician practices, dialysis centers, pharmacies, etc.) have undergone waves of consolidation; meanwhile, the ASC industry remains more fragmented.[3] Prospective private equity investors therefore face an industry where integration and aggregation remain relatively rare and modest capital infusions could capture a meaningful ownership stake––and hence control––in a given firm. At the same time, physician ownership of ASCs and its subsequent effects on physician agency remain a source of concern (e.g., Casalino et al., 2003; Mitchell 2010; David and Neuman 2011; Yee 2011; Hollenbeck et al., 2014; Howard et al., 2017; Carey and Mitchell 2019; MedPAC 2019). Recent research also shows that financial interests directly influence physicians' medical decision-making tied to outpatient surgical care setting choices, with implications for consumer welfare (e.g., Munnich et al., 2021; Richards et al., 2022; Geruso and Richards 2022).

Given these market attributes specific to ASCs and to shed new light in this broader research area, we combine several unique data sources to conduct a novel investigation into ASC behavior before and after the introduction of outside investors. Specifically, we leverage all-payer data from Florida spanning more than 15 years, detailed ASC ownership information from a freedom of information act (FOIA) request to the Centers for Medicare and Medicaid Services (CMS), and corporate structure information from several sources to identify private equity owners among ASC investors. We then examine three related, but distinct, financial events tied to private equity involvement in the ASC industry.

First, we explore the impact of new private equity ownership stakes in standalone ASC firms. Importantly, we capture ASC behavior changes over the full life cycle of private equity investment (i.e., investment as well as divestment decisions), which spans 6–12 years in our analytic data––consistent with private equity investment time horizons in other industries. Second, we leverage the 2010 wholesale private equity acquisition of a large ASC chain, Surgery Partners. This additional set of analyses allows us to compare and contrast the effects of private equity investments on an ASC chain (i.e., a collection of horizontally integrated ASCs) relative to the individual (non-chain) ASCs that comprise our initial empirics. Additionally, the wide window belonging to our analytic data allows us to subsequently investigate any behavior changes once the private equity-owned chain becomes a publicly traded company via its initial public offering (IPO) in 2015––a more traditional path for private equity portfolio companies and a departure with the divestment behavior pertaining to individual ASCs noted above––i.e., selling ownership stakes to other private parties, such as ASC chains, hospitals, or provider management companies. Since both the initial private equity investment and the taking on of public shareholders differ from the smaller scale investments by private equity firms in our first analyses, we benefit from data and empirical approaches that facilitate such comparisons of the clinical and financial influences across these different sources of ASC investments. Examining these potentially disparate effects is also critical to better understanding the role of public and private equity holders on healthcare firm performance. The risks of perverse financial incentives leading to suboptimal physician agency and/or other negative outcomes are not necessarily unique to private equity investments and may exist following other sources of capital as well.

To estimate the effects of private equity investment and divestment into standalone ASCs, we pursue a difference-in-differences strategy that relies on stacked event study estimation to address the differential timing of private equity ownership across firms in the data (Goodman-Bacon2021). We then compare the behavior of affected firms against out-of-market firms that are never exposed to private equity involvement over our analytic period. Our identification strategy for our second set of analyses targeting the Surgery Partners private equity acquisition and eventual IPO makes use of a traditional difference-in-differences event study framework since the timing of market events is uniform across members of the ASC chain. For both sets of estimations, we benefit from observing affected ASCs for at least 10 quarters prior to the private equity investment event to assess the appropriateness of the parallel pre-trends assumption since there could be anticipatory behavior on the part of ASCs and/or targeting of unique ASCs by private equity––either of which could distort inferences.

We ultimately find that ASCs do not increase their total case volume after experiencing a private equity ownership stake. On average, these firms maintain the level of throughput demonstrated prior to private equity involvement––though, it is worth noting that ASCs targeted by private equity appear to be higher volume at baseline. They do, however, begin charging much more per case. The increases are gradual but by

4 to 5 years following private equity investment average charges per case are approximately 50% above their baseline levels. The pattern of charging more per service is also common across payers (i.e., Medicare Advantage, private, traditional Medicare, and all others), which is consistent with ASCs setting chargemaster (i.e., "list prices") at the firm level.[4] Interestingly, while these firms are charging more for the care provided, they are not performing more intensive clinical care. The number of procedures performed per case declines by roughly 13% over time, with the effect driven by cases in the Medicare market where unbundling procedures could, in theory, increase revenue generation from the public payer. Moreover, the level of case complexity is stable before and after the private equity investment is made. Put differently, we fail to detect any evidence that ASCs shift toward more complicated––and hence expensive––procedures once private equity is involved. At the same time, the ASC's payer mix experiences a shrinking of privately insured business and an expansion of traditional Medicare patients after a private equity firm takes an equity stake. One interpretation is that charging more for the same care could lead price-sensitive private insurers and enrollees to seek out other provider options via their network and/or benefit (e.g., cost-sharing obligations) designs. When examining within-market competing ASCs in a supplementary analysis, we do not find that these firms demonstrate similar increases in charges or shifts in payer mix as those receiving private equity investments (i.e., no evidence of market-wide trend changes).

Our sharpest ASC behavior changes following private equity investment belong to ownership decisions by individual physicians. Private equity does not substitute for physician ASC ownership (and hence capital), and instead, appears to encourage physician equity holdings in the targeted ASCs. The effect is not immediate but instead takes place 1.5 to 2 years after private equity has taken an ownership stake in the ASC. At that point, the ASC is 40% more likely to have at least one physician owner (extensive margin) and has 300% more total physician owners (intensive margin) relative to baseline. The number of unique providers performing cases in the ASC and the rate of new providers at the ASC are both unchanged––indicating that providers with a pre-existing relationship with the ASC are now being converted into equity investors once private equity has been introduced. This effect also aligns with a private equity strategy observed in other industries, where remaining managers are required to invest in the company following a private equity takeover (Kaplan 1989; Muscarella and Vetsuypens 1990; Leslie and Oyer 2008; Bernstein 2022). Besides potentially increasing the amount of equity invested into the ASC (and hence financial capital accessible), this strategy can also credibly tie valuable human capital to the firm in the lead up to selling their investment stakes. An ASC's intangible assets in the form of reputation and existing referral networks attached to the physicians already working within the ASC are arguably more valuable to prospective buyers than the tangible assets (e.g., the building and equipment) available. Relatedly, the physician and private equity owners appear to coordinate their divestment decisions. There is a simultaneous reversal of the physician equity stakes at the point the private equity firm liquidates its ownership position. The physicians continue working at the ASC, however, and the residual ASC owners (i.e., those remaining post-private equity divestment) almost uniformly involve corporate healthcare entities.

The private equity acquisition of the ASC chain typically does not produce similar results. Treatment styles and case mix are stable as well as average charges per case. Though, one clear commonality with the prior results is the loss of privately insured patients soon after the private equity takeover. ASCs within the chain maintain the same total volume of cases but attract 17–26% less privately insured business a year or more following the acquisition. However, in the lead up to the IPO, these same ASCs appear to increase their case throughput and charge more per case (especially among payers relying on payment negotiations), which is

consistent with trying to boost revenues, and hence the company's overall valuation, immediately prior to the public offering. Our findings also suggest that many physician owners in these ASCs liquidate their equity stakes roughly a year before the IPO.

Taken together, our findings show that private equity involvement in the ASC industry seems to focus on forms of "financial engineering", rather than altering physician agency and related clinical activity.[5] The results for standalone ASCs are consistent with private equity investors encouraging higher charged amounts for services (i.e., "list prices") as well as new ownership stakes among physicians already operating at the ASC––with the intent of all parties receiving a favorable downstream payout. However, the results from our second set of empirical exercises demonstrate that firms' responses to the arrival of new investors can depend, in part, on the pre-existing organizational structure (e.g., a horizontally integrated chain), source of capital, and the desired financial endpoints (e.g., a public listing). Thus, the implications of greater private equity involvement in US healthcare companies may not be uniform or necessarily unique relative to other financial pressures, even within the same industry.

Section snippets

Brief background on outpatient surgery markets

Outpatient procedures and same-day surgeries are overwhelmingly provided by two types of firms: ASCs and hospital outpatient departments. The organization of these two types of firms is markedly different, however. ASCs are typically small (2–4 operating rooms) and almost exclusively found in more densely populated areas (MedPAC2021). The traditional (fee-for-service) Medicare program spends roughly $5 billion on ASC-delivered care per year (MedPAC2021), and some industry watchers project the …

ASC ownership details

Our key source of data on ASC ownership structure was obtained by a FOIA request to the Centers of Medicare and Medicaid Services (CMS) in April 2019. The data provide a detailed listing of individual owners (primarily physicians) and organizational owners (e.g., a hospital or ASC corporate chain) belonging to a uniquely identified ASC so long as the ASC was certified by Medicare and operational by January 1st, 2005 or later. Additional descriptions of the FOIA data as well as estimates of the…

Analytic sample and outcomes

To focus our main analyses on the ASC firms of most general interest (i.e., individual firms experiencing direct private equity financial investments), we begin by excluding from the treatment group a subset of ASCs that are only found to be indirectly linked to private equity (e.g., through ownership by a parent healthcare company that eventually is sold to or enters into a joint venture with a private equity company). We also set aside ASCs ever belonging to the national chain, Surgery…

Background for ASC chain and private equity acquisition

As previously noted, the ASC chain, Surgery Partners, has features germane to this paper but also distinct from the analyses described in Section 4. We therefore conduct a second set of analyses to examine these horizontally integrated ASCs in isolation and over two separate financial events of interest in order to compare the findings with our prior results for standalone ASCs.

The Surgery Partners chain was founded in 2004 in Florida, and its entire network of ASCs were confined to Florida…

Conclusions

Private equity is not new to US healthcare, but its involvement has been rapidly increasing. The potential misalignment between private equity's financial motivations and physician agency on behalf of patients also raises a variety of stakeholder and regulatory concerns. Theoretical arguments lead to indeterminate conclusions in this context, but sufficiently granular data over long time horizons for robust empirical investigation can also be difficult to obtain. We ultimately benefit from a…

CRediT authorship contribution statement

Haizhen Lin: Conceptualization, Methodology, Resources, Data curation, Writing – original draft, Writing – review & editing. **Elizabeth L. Munnich:** Conceptualization, Methodology, Resources, Data curation, Writing – original draft, Writing – review & editing. **Michael R. Richards:** Conceptualization, Methodology, Resources, Data curation, Software, Formal analysis, Writing – original draft, Writing – review & editing. **Christopher M. Whaley:** Conceptualization, Methodology, Resources, Data curation, …

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