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Does Private Equity Have Any Business Being in the Health Care Business?

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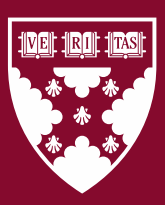

Harvard Business School

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Introduction

Private Equity ("PE") is increasingly under scrutiny by lawmakers, clinicians, and the public for its health care investments. These include acquisitions of hospitals, physician practices, nursing homes, hospice facilities and other health care providers. Investigations are mounting from federal and state legislators. Congressional committees have been established seeking to safeguard patients and societal resources from the potential impacts of PE acquisitions in health care. State legislators are following suit.[i]

These efforts share concerns around the consolidation of health care providers run as "for profit" entities, with consequences spanning from staffing cuts, patient harm, and increased prices for payers, employers and patients.[ii]

This increased scrutiny of PE in health care has been predictable, as stories of patient harm (deaths in nursing homes and hospitals) have been tied to staffing shortages and equipment following acquisition. Corporate failures generate provocative headlines. Some of the PE firms may have been somewhat tone deaf as to the impact they have had subsequent to their acquisitions and how they might be perceived. That being said, these anecdotal reports typically tell the story of an individual failed transaction but do not represent the industry as a whole. Most PE investments are successful.

As described below, the primary driver of bankruptcies after acquisition has been the leveraging by the PE firms in acquiring health care providers and then often subsequently adding additional leverage enabling a distribution to the PE firms known as a "dividend recap" (recapitalization). It

[1] Nori Gerardo Lietz, Senior Lecturer, Harvard Business School, teaching Starting a Private Investment Firm, Real Estate Private Equity and taught Venture Capital/Private Equity; Zirui Song, Associate Professor of Health Care Policy and Medicine, Harvard Medical School and Massachusetts General Hospital, Faculty Director of Research, Harvard Medical School Center for Primary Care, teaching Health Policy to Harvard medical students, dental students, and Mass General Brigham internal medicine residents.

appears unfair to outsider observers for PE firms to benefit from a transaction, often substantially, if there is harm to patients and local communities by subsequent bankruptcies.

Senator Warren, in particular, has targeted PE executives to possibly be jailed for patient deaths in acquired hospitals that were "looted" by their firms.[iii] Under the Corporate Crimes Against Health Care Act, PE executives could receive up to a six year jail term if they were "unjustly enriched" resulting in a patient's death.

This focus on PE health care acquisitions has been driven by the recent reports of high profile bankruptcies such as Hahnemann Hospital[iv], Delaware County Memorial Hospital[v], and the Steward Health Care System[vi]. It has been reported that PE firms were involved in 17 and Venture Capital accounted for an additional 12 or 36% of the 80 total health care bankruptcies in 2023 and more are anticipated in 2024.[vii] See, Exhibit 1.

The characterization of PE and VC firms as essentially vampires working at the blood banks has become quite commonplace[viii], although a more nuanced treatment of the evidence is required for policy modifications. In situations where profit motives have resulted in patients put in harm's way, whether through injury, staffing layoffs due to cost cutting, or failure to pay bills to vendors, PE's intentions deserve scrutiny. On the other hand, in situations where PE brings otherwise unavailable capital to finance improved ways to deliver care or innovative health care products, the view of their intent is more complex.

There is a net positive if these firms finance new and clinically beneficial ideas, products and treatments; provide growth capital for promising health care companies; and consolidate companies to provide economies of scale, which might allow physicians to focus their time more on providing patient care. The focus on PE's association with negative outcomes potentially ignores those positive consequences PE investments have also generated, although rigorous evidence of the latter remains sparse. Ultimately, on balance the question is how the documented clinical and financial harms of PE in health care measure up against the benefits of their investments.

Most recent critiques of PE highlight the concerning clinical effects and financial consequences for patients and payers, though less has been written on potential constructive solutions that might enhance patient outcomes or clinician wellbeing under the expanding footprint of PE in health care. This has understandably led to push back from the PE industry, which has defended the purported positive impacts of their investments (for example, that PE investments are saving struggling health care facilities). But this pushback has been limited by the lack of systematic data that substantiate those positive effects in a rigorous way (for example, newer evidence shows that PE firms acquired financially healthier, rather than less healthy, hospitals). What often results is a heated debate that pits conjecture against evidence, rather than a coordinated effort across the academic and industry communities to identify and prevent the harms attributable to PE.

In the past five years, the evidence base on PE investments in health care using more rigorous and statistical methods has grown. Much has been published in the past year or so. However, each study typically focuses on a particular subsector of health care acquired by PE firms. These include acquisitions of hospitals, specialty practices, nursing homes, or hospice care. [ix] They generally base their conclusions using data from public payers (notably Medicare), which reflects only a portion of a provider's patient mix. More studies need to be done on the implications for quality of

care, patient outcomes, health care spending, and patient access after PE investments occur; in short more information is needed across the care trajectory. Despite the current data gaps, when one steps back and reviews the spectrum of data collected, one can reach directionally consistent conclusions as virtually all the papers reach similar findings. This analysis attempts to offer several overarching policy recommendations concerning PE involvement in health care.

History of PE Acquisitions in Health Care

Prior to 2006 there were comparatively few PE investments in health care due to concerns over the regulatory environment. However, health care expenditures represent approximately 18% of US GDP and the market size piqued PE's interest.[x] Then came the mega Hospital Corporation of America ("HCA") acquisition by Bain Capital, KKR and Merrill Lynch Global Private Equity in 2006. HCA was and remains a for-profit hospital chain. Each of the firms contributed $1.2 Billion of equity and borrowed $16 Billion and assumed $11.7 Billion of existing debt.[xi] Additional acquisition costs raised HCA's total market capitalization to nearly $33 Billion. Fundamental to their acquisition strategy was recoding their billing systems to increase top line revenues resulting in materially increased Medicare and Medicaid reimbursements. HCA's interpretation of the services recoding was provided to, though appears not to have been challenged by the Medicare program.[xii]

The level of HCA's Medicare medical reimbursements post-acquisition increased materially by recategorizing patient services in the higher categories.[xiii] This had the impact in 2009 of increasing adjusted earnings from $75 Million to $100 Million in a single quarter.

Concurrent with the top line revenue growth was a program of restructuring the less profitable emergency rooms. Reportedly, HCA instructed ER physicians to turn away "non-emergency" patients if they had no health insurance or have them pay up front.[xiv]

They also embarked on a program that appeared to admit more patients via the ER room, presumably patients who had insurance or could pay. HCA was investigated by Federal authorities for this allegation. The RAND Corporation reviewed HCA practices in Florida over the life cycle of the investment and after liquidation. They found:

> **"While the ownership transitions did not obviously erode HCA hospital quality, affected patients were potentially burdened with higher out-of-pocket spending due to clinically questionable hospitalizations. Impacted insurers presumably faced higher medical spending as well but appeared unable or unwilling to stem the sharp increase in HCA emergency department visits converted into an (often short) inpatient stay- even years later [after the subsequent HCA IPO]."**[xv]

Interestingly, the authors found that the potential excess costs billed were the result of "managed care failures," meaning the insurers, not "market failures," were to blame. [xvi] Or, perhaps, stated differently, HCA increased their billings because they could as they were not challenged for them.

Also, HCA opted for more "dynamic" employment practices by reducing or increasing the number of nurses based upon anticipated patients they would have each day.[xvii]

The strategy worked financially. In 2010 HCA did a dividend recap and distributed $1billion in dividends to each of the PE firms. In 2011 HCA went public again. Each of the three firms sold

$500 million then recouping their entire initial investment while still owning a significant percentage of HCA. Merrill Lynch's remaining share was purchased for $1.5 billion later that year. Bain Capital and KKR received subsequent dividends and their residual position resulted in a total return of ~3.5x on their initial investment. Specifically, Bain Capital collected $1.2 billion on their initial equity investment of $64 million while their investors reaped $3.14 billion on their $956 pro rata equity investment.[xviii]

In short, the strategy of increasing top line revenues, cutting costs thereby increasing EBIDTA (earnings before interest, depreciation, taxes and amortization), and adding substantial debt to the company's balance sheet became the playbook for subsequent PE health care acquisitions. The fundamental question becomes whether this "playbook" created misaligned incentives among the PE firms and health care management teams versus their patients, insurers, and US taxpayers who fund the health care spending in Medicare, Medicaid and private insurance.

Other PE firms followed HCA's example. In 2010, Cerberus acquired Steward Health Care, converting it to a "for profit" hospital chain and Blackstone acquired Vanguard Health Systems, already a for profit hospital chain. In short order, these firms and others went on an acquisition spree following the PE playbook established by KKR and Bain Capital. Today, over 400 of the nation's roughly 5000 hospitals are owned by PE, and 100 of those are in non-urban areas.[xix] Thirty percent of these hospitals are now "for profit"."[xx]

It is estimated that PE firms have invested over $1trillion (aggregate value of the companies) in health care over the past decade.[xxi] While the pace of health care acquisitions has slowed in recent years[xxii], in 2021 over $200 billion was invested in health care, often in the form of follow-on investments.[xxiii] However, it was estimated that the total market share of PE in overall health care is quite small or approximately 4% of the total revenues generated in the sector based on the inventory of transactions within a given year.[xxiv] One can quibble as to the precise extent of PE's involvement in health care to date, but the fact remains that PE has had active involvement in hospital acquisitions and physician "roll up" strategies.

Across hospitals, nursing homes and physician practices, the overarching strategy has been a consolidation of market power in a certain segment of health care, typically in a particular geographic area. These PE firms then implemented the HCA financial "playbook" to increase revenues and reduce costs. The stated objective was to increase economies of scale via operating efficiencies created by the increased size. For physician roll ups most frequently the PE firms focused on higher margin physician practices such as dermatology, gastroenterology, ophthalmology, cardiology, and OB/GYN, in which high-priced, fast, outpatient procedures are common. However, the salient question becomes: is bigger better or is better better?

In larger brick and mortar acquisitions, PE firms also availed themselves of sale/leasebacks in which they sold the physical facilities and then became renters instead of owners. The practice freed up capital that was typically distributed to the PE firms and their investors and layered on an additional expense line item for the hospital or practice. One of the primary capital purveyors in health care sale/leasebacks are real estate investment trusts (REITs) such as Medical Property Trust (MPW). As recent press coverage has elucidated, MPW participated in financing Cerberus' acquisition of Steward Health Care.

What Happened to Hospitals and Medical Practices after PE Acquisitions?

Key questions regarding PE involvement in the health care industry are: (i) do the PE firms actually provide benefits by creating substantive operating efficiencies and innovation? (ii) if yes, who receives these benefits, meaning do these efficiencies and innovations make the costs lower for the patients, insurers, or employers, or do they simply benefit the PE firms and their investors? and (iii) most importantly, what happens to the quality of patient care post-acquisition?

As referenced above, there have been a proliferation of news articles decrying the egregious results concerning PE investments in health care. Beyond these individual stories, it is important to review studies based on larger scale data to draw meaningful conclusions for the policy community.

In two separate articles, doctors documented an overview of PE health care acquisitions from 2003 through 2017[xxv] and their operating results. In the first piece, the authors reviewed 42 transactions involving 282 hospitals. This study did not focus on physician practice rollups. In their conclusions, the authors found PE increased for-profit hospitals from 73.4% to 92.3% over the time frame. Among the non-acquired hospitals in 2017 only 25.3% had a for-profit designation. The acquired hospitals were significantly larger in terms of the number of beds than non-acquired hospitals and were in more urban as opposed to rural areas.

The operating metrics from 2003 to 2017 are shown in Exhibit 2. These metrics show material differences from 2003 to 2017 between PE acquired hospitals and non-acquired hospitals. Specifically, the identified changes between PE versus non-PE acquired hospitals were in the number of RN Staffing (+20.8% vs +31.1%), all staffing (-0.4% vs +5.6%), operating expenses per discharge (+4.4% vs +21.1%), charge-to cost ratios (+105% vs +54.2%), and operating margins (+7.37% vs -3.8%).

Two separate studies explored PE acquisitions of hospitals from 2005 through 2017, focusing on economic and operational outcomes. In the first piece, the authors examined 204 hospitals that were acquired by PE compared to 532 similar hospitals not acquired by PE.[xxvi] The authors found that PE acquisition was associated with a 27% increase in net income, explained in part by a 7-16% increase in charges (hospital list prices). Acquisition also led to a reduction in the share of patients admitted who were insured by Medicare, with no change in the Medicaid patient mix, implying an increase in the share of patients admitted who were insured by commercial insurers. Commercial insurers of course pay hospitals higher prices per unit of service compared to public payers.

Another empirical study using 2003 through 2017 data reached very similar conclusions on the resulting operating metrics of PE acquired hospitals versus non-acquired hospitals.[xxvii] The PE acquired hospitals experienced substantial improvement in their top line revenues and operating margins compared to the non-acquired hospitals. However, the authors noted that PE investors acquired larger hospitals with heathier margins at acquisition. They concluded the PE firms boosted profits by "restraining growth in cost per patient, in part by limiting staff growth"."[xxviii]

In short, of the hospitals surveyed, the PE acquired hospitals experienced substantial improvement in their operating margins compared to the non-acquired hospitals.

Without access to the balance sheets and income statements of the acquired companies, the preponderance which are privately held, it is unclear how much of that improvement was

attributable to increased revenues versus cost cutting measures. In all probability it was a combination of both. Whether the improved operating results produced any new innovations or patient benefits was very unclear. It would appear that the improvements were more likely attributable to financial engineering and those benefits would be passed along to the PE firms and their investors, not the ultimate customers, the patients.

Another major recent study focused on PE acquisitions of individual physician practices. They examined the time period of 2012-2021.[xxix] They examined 10 physician specialties and reviewed the market penetration of consolidation within Metropolitan Statistical Areas ("MSAs").[2] They found that PE physician acquired practices increased from 816 in 2012 to 5,779 in 2021 across 307 MSAs. Single PE firms had a 30% market share of the physician owned practices in 108 MSAs and exceeded 50% in 50 of those markets. They found "By 2021, the highest concentrations of collective PE market share that exceeded 50% were found in the South and the Northeast regions."[xxx]

Building on that study, another paper looked at pricing in those MSAs which had greater than 30% market penetration by a single PE firm. When examining 10 specific practices they found price increases in 7 specialties. They found that:

> **"The price results in our regression models are consistent with prior studies that found acquisitions by PE firms were associated with price increases for physician services. We also found particularly large 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."[xxxi]**

The Federal Trade Commission ("FTC") took notice. These individual acquisitions are generally too small to invite FTC scrutiny at the individual transaction level. However, their collective impact on a local market could be profound. In March of this year the FTC, the Department of Justice and the Department of Health and Human Services announced an "inquiry on the impact of corporate greed in health care" following the White House statement using the same language.[xxxii] Again, the message is clear. The White House, DOJ and FTC are collectively concerned about the impact of practice consolidations on health care pricing, with a heightened focus on corporate acquisitions.

States have similarly stepped up scrutiny and review. California, for example, will review health care acquisitions over $25 million.[3] Their department of Office of Health Care Affordability can now conduct a cost and market impact review of each transaction.[xxxiii]

It is too soon to tell what all this regulatory activity will mean for PE firms and investors, as it has only come to the fore in the past six months. Undoubtedly it will lead to greater scrutiny over the care and oversight of PE merger and acquisition activity. In all probability, PE firms will have to give

[2] The specialties were Gastroenterology, Dermatology, Urology, Obstetrics-Gynecology, Radiology, Oncology, Orthopedics, and Primary Care. Other studies in the same specialties have found them to be among the most lucrative in healthcare. See, the endnotes within the citation of Endnote viii for a listing of many comparable articles.

[3] Other states implementing new review processes are Connecticut, Illinois, Indiana, Massachusetts, Minnesota, Nevada, New York, Oregon and Washington.

some assurances as to the economic outcomes of the transactions, which may limit their options to implement their traditional playbooks.

Part of the pressure put on PE firms investing in health care is the rising number of bankruptcies of health care companies in the past two years and those at risk in 2024. While COVID undeniably stressed the entire health care system, those entities that were highly leveraged were more likely to struggle afterwards. As Exhibit 3 illustrates, PE backed health care bankruptcies increased significantly in 2023. In November 2023, Moody's reported 45 health care companies had a rating of B3 negative or lower (a high probability of default indicator) and all but three (93%) were owned by PE firms.[xxxiv] The reported data does not include the bankruptcies that have already occurred in 2024, including Cano Health and Steward Health Care. See, Exhibit 4 for the "at risk" PE health care investments.

PF firms use a high level of debt in their acquisitions and management of portfolio companies. Bain & Company (as distinguished from Bain Capital) in their annual PE report stated that debt ratios in 2022 for all buyouts were 7.1 x EBIDTA, a 15 year high.[xxxv] Comparable average debt-to-EBIDTA ratios for non PE owned publicly traded companies were approximately 3x during the time period.[xxxvi]

The impact of these bankruptcies has the potential to reduce available care to patients should these facilities close. The access issue for patients is especially acute in more rural communities where less profitable facilities could close after PE acquisitions and where fewer alternatives for care exist. Indeed, in many rural communities, a hospital is the only one in town. These hospitals represent critical infrastructure in these areas, and the combined effects of bankruptcies and facility closures should give rise to policy concerns about adequate health care access.

The final and perhaps the most important question is what is the impact of PE acquisitions ultimately on patient care? There is a paucity of empirical studies analyzing this question. One metric to consider is the composition of care givers (physicians versus advanced practitioners, physicians assistants and RNs) available for patients. In a review of the empirical studies, one recent paper focused on the workforce composition post-acquisition/consolidation by PE firms. The study found that "**Relative to non-PE acquired control practices, [they] found significant yearly increases in the number of advanced practice providers at PE-acquired practices [versus registered nurses] after acquisition.**" In short, in this study there was evidence of "down sourcing" of work from higher-paid forms of clinician labor to lower-paid forms of clinician labor. However, the study only focused on three specialty practices and used only commercial insurer data.[4] More studies are needed in this area on an industry wide basis.

Two national studies of the impact of PE nursing home acquisitions had differing conclusions.[xxxvii] The first study reviewed mortality rates and patient wellbeing post-PE acquisition. Mortality rates increased slightly in certain instances and more significantly by other measures. Overall, they found there was a decline in hours per patient/per day from the nursing assistants who represent the front line of care in nursing home facilities. In terms of wellbeing the authors found a decrease in patient mobility, an increase in ulcer development, and an increase in pain intensity. They also found a shift to lower risk patients being accepted in their facilities, which they speculated led to

[4] The practices were dermatology, ophthalmology, and gastroenterology.

the more mixed conclusions they could draw regarding mortality rates. But they found **"Our results suggest that, on average, PE acquisitions of nursing facilities lead to adverse health outcomes for some patients."**[xxxviii]

The second study found that PE owned facilities during COVID-19 had fewer deaths or supply shortages as compared to non-PE owned facilities or PE previously owned facilities. Previously PE owned nursing facilities had the worst reported outcomes, possibly suggesting a post-sale financial structure (perhaps analogous to the Steward Health Care situation) that limited their resources. However, out of the 13,398 facilities included within their analysis, 391 were PE owned or only 2.9%. Previously PE nursing owned facilities represented 9% of the total facilities. The authors acknowledged that the non-PE owned facilities were twice as likely to report confirmed cases and COVID deaths among residents as compared to PE owned nursing homes.[xxxix] The data in the paper by the PE owned firms were self-reported. The authors acknowledged the need for additional research.

The economic incentive to use advanced practice providers as opposed to physicians is clear. This cost cutting measure will augment EBIDTA growth. Whether there is a negative impact on patient care across multiple practice specialties remains to be fully studied.

Two comprehensive national studies analyzed the impact on patient outcomes in PE acquired hospitals. They reached differing conclusions using different methodologies. The importance of these studies warrants elaboration.

One was conducted by Harvard Medical School and published in the Journal of the American Medical Association ("JAMA") last December had disturbing conclusions (the "HMS study").[xl] The authors compared hospital-acquired adverse events defined using Medicare definitions and compared the results of 51 PE acquired hospitals against the results of 259 non-PE owned matched control hospitals from 2009 through 2019. The hospitals were located across the country. The doctors compared the Medicare Part A claims from 662,0895 patients in PE owned hospitals against comparable data for 4,160,720 patients in the control group. Hospital acquired events included falls, central line associated blood infections, surgical site infections, and others. They found an overall 25.4% increase in these preventable hospital adverse patient events for patients in the PE acquired hospitals following acquisition, relative to the control group.

Specifically, the study reported PE-owned hospitals had a 27.3% increase in falls, a 37.7% increase in central line associated bloodstream infections despite placing 16.2% fewer central lines, and a doubling of surgical infections (10.8% to 21.6%) despite an 8.1% fewer surgeries performed after acquisition. The rates of both types of infections decreased within the control group over the same time period. In-hospital mortality rates were roughly comparable, but slightly lower for the PE owned hospitals. This was likely due to PE hospitals admitting patients who were "modestly" younger and less likely to be eligible for both Medicare and Medicaid (in other words lower-risk clinically and socioeconomically). Also, PE hospital patients were more often transferred to other acute care hospitals after shorter stays. Interestingly, the difference in mortality dissipated by 30 days after discharge.

The doctors' conclusions were telling as to how the PE operations may have affected patient outcomes in their hospitals:

> **"Furthermore hospital-acquired adverse events have been shown to be sensitive to staffing ratios and composition, specifically among nurses. [xli] Given that private equity firms have reduced staffing and changed the clinician labor mix at acquired hospitals and clinics,[xlii] and analogous cost cutting strategy in our sample may help explain the increase in hospital-acquired conditions, which highlights the clinical importance of this evidence."[xliii]**

The other study ("Gao et.al study") conducted by academics reached different conclusions.[xliv] They examined 1,218 hospital mergers and acquisitions which involved 610 hospitals, 419 of which were PE owned hospitals with the other of the 610 being for-profit. The authors found significant staff reduction in the administrative functions, not the essential care providers (doctors, nurses, pharmacists). There was an overall 10% work force reduction in administrative overhead and a 11% wage reduction over the time period measured primarily in the administrative functions[xlv]. The wages of the core health providers did not decrease, but it was not reported that they increased either. They observed an increase in acquired hospital profitability without what they concluded was a negative impact on patient outcomes.

The Gao study examined impacts on patient outcomes as measured by mortality rates in three categories (heart attack, heart failure and pneumonia) and hospital readmissions within 30 days post PE acquisition. They found fewer positive results for heart attacks and more favorable results for the other two categories as compared to the other hospitals against which they were compared.

However, quality of hospital care is not reflected solely through mortality and readmission rates. Much can happen to patients short of death or readmission, including the types of adverse events that the first study examined. As the prior study stated, "These [adverse] events are more common than mortality and can emerge without changes in mortality or readmissions. They may also provide a more complete picture of quality of care or patient experience."[xlvi] It should be noted that the Gao study examined patients with three clinical conditions while the HMS study examined 100% of the Medicare hospitalizations nationwide. Further, the Gao paper did not use patient-level or service-level claims within hospitals but relied on hospital-level summary data, likely rendering it more difficult to support sweeping conclusions about hospital quality of care. Other questions have been raised concerning their methodology.[xlvii]

Policy Implications

The recent, burgeoning evidence base using large data and rigorous statistical analyses raises a number of red flags about the corporatization of health care. The issues raised should prompt a robust policy discussion as to how PE firms should invest in health care. The focus should be on where and how they are adding value, and where they are potentially detracting from patient care and/or increasing patient and societal costs (including costs to public payers like Medicare and Medicaid, whose spending is ultimately largely financed by taxpayers).

- **Greater Transparency of Industry Practices**

Many of the articles call for greater transparency concerning PE health care investments. The question is greater transparency of what? There is virtually no publicly available information as to PE portfolio investments as these have been shielded from public scrutiny from Freedom of

Information Act requests on the basis that the information is proprietary and confidential. However, if health care is in many cases a public good and part of the critical US infrastructure, then arguably legislators and researchers should have access to this data.

There are several reasons why this industry segment should be an exception. Acquiring a hospital, nursing home, hospice facility, or physician practice is not analogous to buying and consolidating fast food outlets, auto parts companies or other commercial industries subject to PE's rollup strategies. Health care is heavily subsidized by US taxpayers to an extent not seen in other industries. Health care is, at times, about life and death where access and quality come with higher stakes than those of more discretionary goods and services. Medicare, Medicaid, employers and private insurance (ultimately through taxes or workers' wages) fund the preponderance of medical expense reimbursements as opposed to out of pocket payments by patients at the point of care. As an example in the case of nursing homes, authors found 75% of revenue streams were paid by the government (Medicare and Medicaid).[xlviii] A portion of the profits that were paid to the PE general partners and their investors were ultimately subsidized by payments made by US taxpayers.

The PE roll-up business model on its face may be misaligned with the health care objectives of providing safe, timely, patient-centered and cost-effective health care. The PE model ultimately incentivizes profits for the PE firms and their investors. The model does not necessarily align with the consumer/patient and those who pay for the services: taxpayers.

There is the undeniable incentive to increase revenues by "massaging" the coding system of services rendered and increasing the volume of services. Cost cutting is also part of the traditional PE roll up model that may come at the expense of patient outcomes. Continued rigorous analysis of the data could confirm, put to rest, or better quantify the extent to which these practices are occurring.

Specifically, PE general partners should provide on-going operating metrics of all their portfolio health care companies, be they public or private:

- Revenues and comparisons of pre/post-acquisition revenue characteristics; specifically, a delineation as to the sources of revenue increases (price, volume, coding/increases, etc.)
- Tracking data of patient outcomes
- Historical pricing historical data concerning services provided
- Cost cutting measures implemented
- Staffing turnover and composition changes
- Structure of the acquisition including the terms of financing, debt and liquidity

How this monitoring will occur, by whom and who will pay for it needs to be addressed by policy makers and the industry. The question also then becomes what penalties should be imposed on those PE acquired firms who actually increase their own profits at the expense of patient care?

Supporting Rigorous Studies of PE Impacts in Health Care

Policy solutions should be based on evidence, comprising objective data and peer reviewed analyses from the academic, policy, and medical communities. Despite the contributions of studies to date, much remains unknown with further improvements in knowledge readily possible with the support of public agencies (e.g., NIH and FTC) and private foundations engaged in improving the health care system.

Existing studies have primarily focused on subsets of hospital or physician specialties, with additional aspects of the delivery system as yet unexplored. Study samples have been based on public information around acquisitions; other acquisitions have been difficult or impossible to track down. They have thus gone unexamined. Clearly, more complete disclosure would improve the evidence base.

Current data have focused on specific sectors of the delivery system, but what if patients traverse from a PE owned hospital to a PE owned nursing home and/or to a PE outsourced outpatient practice? The system wide impacts of PE in health care have yet to be analyzed. Such data would enable policy makers to develop a more holistic perspective of the current corporate landscape in the US health care system.

Further, the mechanisms by which PE firms affect decision-making *within* the hospital, nursing home, physician practice or hospice facility remains poorly understood. For example, the practice of "upcoding" or "recoding" should be more rigorously studied. The RAND study and Liu paper referenced above suggested that the poor oversight of these practices and negotiating skills of public and private payers was a contributor to the increased costs. Patient selection (such as selecting healthier patients or transferring sicker patients to other providers, with subsequent effects on those providers) should also be more closely examined. There have numerous allegations by doctors that the requirements of "quotas" of additional transactions and recoding have been advocated by the new owners. However, these allegations have not been substantiated in a rigorous, systematic manner.

Academics and policymakers should analyze not just provider level or facility level changes in key outcomes, but also market level outcomes. For example, at a reasonable level of geography such as MSAs, researchers could examine the impact of PE penetration on the costs and quality of patient care versus MSAs with less PE concentrations.

- **Practical Guardrails Should be Placed on PE Investments to Reduce the Risk of Later Defaults**

The spate of recent and potential bankruptcies is attributable to multiple factors. COVID clearly impacted multiple businesses and industries including health care (though rescue grants and loans from the government offset a substantial portion of that impact). However, the debt levels incurred in health care acquisitions undeniably stressed the financial operations of these companies. Entity bankruptcies coupled with the closure of less or marginally profitable rural facilities result in reduced patient access, which policy makers have an interest in protecting.

PE firms should not be able to acquire a consortium of hospitals or practices and then shed the unprofitable ones leaving the states and federal agencies to pick up the pieces to ensure adequate health care access to local residents. This again places a disproportionate burden on taxpayers to fund these costs while the PE firms retain their ability to generate profits and receive carried interest payments. It is a legitimate question as to the level of subsidized profits PE firms should garner on these investments via the reimbursements they receive from federal programs paid for by US taxpayers from Medicare, Medicaid, and other subsidized plans in the Affordable Care Act.

Reasonable regulations to reduce the risk of economic failure are in the best interests of those who actually pay for the services. While no PE firm wants any of its investments to fail, the question is who bears the risk of loss if they do fail? The PE investors will lose their capital investment but will likely mitigate this risk with a diversified portfolio of investments. The PE firm would lose their 1-2% capital investment, which they would have recouped from the management fees they charged. PE general partners have effectively transferred the risk of loss to those least able to mitigate the risks: the patients and those paying for the services if care declines and costs increase. In addition, a recent study found that when hospital costs increase, the local community sees an increase in job losses.[xlix] Again, those affected have no tangible means to mitigate these risks.

Many of the concepts currently discussed to curtail the undesirable effects of PE health care investments simply are not practical. Many such proposed policies, if they came to pass, would likely face litigation. Proving harm will often be incredibly challenging. In the extreme, the proposal to jail PE executives for actions taken within their portfolio companies in which a patient is harmed may garner public support, but proving causation in a court of law would be exceedingly difficult.

Requiring a reduced leverage (LTV) ratio and imposing restrictions on dividend recapitalizations is a policy that should be considered. The LTV ratio post-acquisition should be low enough that the Moody's rating of the company be higher than Baa and/or there should be a clawback of distributions from the GP and their investors in the event of default within three years of any distribution.

PE firms should reconsider how they approach investments in health care. Perhaps they should consider them infrastructure investments in lieu of traditional PE investments. Infrastructure investments (which are often heavily regulated) typically have lower risk/reward profiles and lower expected returns. Delevering these investments would go a long way toward derisking them. Again, linking the company's Moody's rating post transaction would substantially reduce default risks.

However, the consolidation strategies would have to be defined and differentiated from more traditional VC/PE investments providing growth equity capital for new innovations such as new technologies, products, equipment, treatments or drugs. These types of transactions involve very different business models and strategies than the "roll ups" of providers described above. These growth equity investments should be encouraged.

Two recent articles, in the JAMA Health Forum and Health Affairs, proposed some potential policies.[l] One suggestion was that PE firms should be required hold their investments longer (10 years) before taking out potential profits. Another suggested the elimination of the "carried interest loophole".[li] The duration of the investment or the tax treatment of carried interests are separate investment and tax policy issues unrelated to the essential issue of patient care. Moreover, forcing

a PE firm to hold an investment in which it is providing lower quality patient care would not serve the public interest. Monitoring the quality of that care post-acquisition and providing safeguards so that care quality is not diminished could be considered a more first-order priority aligned with public policy interests. To accomplish this, the Health Affairs paper suggested certain protective measures that would enhance patient outcomes such as establishing minimum staffing ratios (and who the staff would be) for hospitals, nursing homes and outpatient practices.

Another suggestion was that PE firms establish an escrow account funded by their management fees or other payments to related companies be placed in an escrow account. In the event of a bankruptcy, they proposed that the escrow account would then revert to the state. This concept is somewhat analogous to "clawbacks" mentioned above. However, the key is the amount that would be paid into the escrow account. A traditional clawback could generate more proceeds, as it relates to all of the distributions received by the PE firm, as opposed to only a portion, such as the PE firm's1.5% management fee.

Other suggestions included profit caps on distributions to the PE firms and "payer or plan-specific out-of-pocket limits for common services analogous to recent reforms for prescription drugs".[lii] Price caps have historically been poor alternatives to solve financial issues unless the business is nationalized and/or heavily subsidized. Hyperregulated companies often become unattractive to traditional PE investors due to the fact their profits are not set by market forces. That could be the ultimate societal decision which would effectively preclude PE investments in health care, though the implications, intended and unintended, of such a policy direction require careful assessment. PE firms may have to modify their investment strategies to prevent this type of policy result.

- **Vulnerable Constituencies Should be Protected**

In any society there are vulnerable constituencies that should not be exploited for profit when they are unable to protect themselves. PE firms should exhibit extreme caution concerning investments that generate carried interests off the backs of these individuals, particularly if the classic "roll up" model of enhancing revenues, cutting costs, or shedding the less profitable parts is used. These areas of the health care system might include hospice, nursing homes, rehab facilities, substance use disorder treatment facilities, patient transportation services, women's health practices, primary care clinics, autism clinics, and childcare, among others.

Some states are proposing legislation that would require the attorney general's preapproval of changes in control of health care facilities. While that might be helpful, this strategy does not address what happens post-acquisition. Vigorous and effective ongoing monitoring is required to evaluate the outcomes of PE investments in health care. Monitoring patient outcomes is essential to protect the vulnerable.

PE firms must recognize they have a responsibility to vulnerable constituencies not present in their more traditional acquisitions. Their interests are inextricably linked with the outcomes of the patients they serve. A focus on patient outcomes in terms of the effectiveness of care as well as their costs needs to be incorporated into their investment analysis.

Conclusion

Health care investments are fundamentally different than traditional PE investments in industries like manufacturing and other consumer goods. Health care is part of the US's critical infrastructure, representing ~18% of GDP, and more akin to a public good that is heavily subsidized by federal and state taxpayer revenues. Health care investments have garnered increased attention given the news of bankruptcies coupled with the fact that PE firms still recouped significant cash distributions. The media's and public's reactions have focused on the role of profit incentives over patient wellbeing. PE firms ignore these criticisms at their peril.

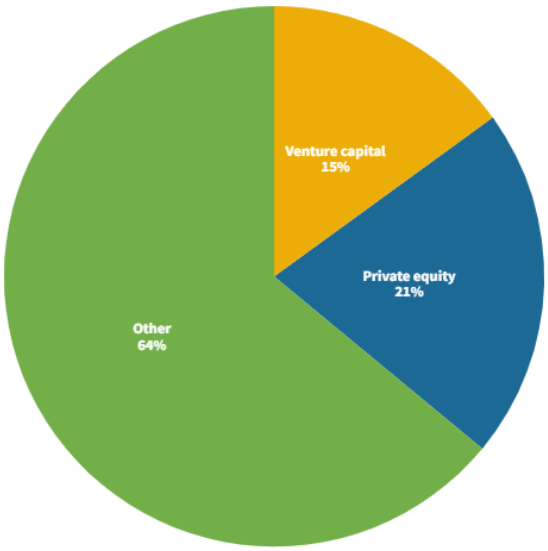
The preliminary research suggests that PE involvement in health care has generated higher costs for society with potentially worse patient outcomes. Further, given the subsidies PE firms receive in terms of the revenue source (ultimately taxpayer dollars), the end result should not be increased costs for health care services. There should be, at a minimum no impact, but ideally a reduced cost structure to the patients as a result of the operating efficiencies PE firms purport to bring to the companies they acquire.

Without PE firms modifying their tactics, federal and state policymakers will likely intervene. From the perspective of the PE industry, that intervention may be heavy handed. Moreover, intervention may have the unintended consequence of precluding attractive societally beneficial investments in the health care sector that could advance care, reduce waste, and improve patient outcomes. To date, however, PE investments in health care services that deliver these benefits in a convincing way have generally not been documented or studied. That does not mean they don't exit, but the lack of supporting evidence for PE's benefits does leave the evidence of patient and societal harms more concerning and unchallenged. Normatively, there should be a robust policy debate as to the extent to which the profits PE firms receive should be financed by Medicare, Medicaid, and other heavily taxpayer-subsidized insurance programs.

Going forward, the measure of success for PE health care investments cannot simply be the internal rate of return and cash proceeds generated to the PE firm and their investors. Pure profit maximization logically results in pressures to increase revenues and decrease costs which contrasts with the societal objectives of ensuring adequate access to affordable and effective health care. The ultimate impact on potential patient outcomes must be incorporated into the investment analysis. PE firms should integrate the medical maxim of *primum non nocere* or "do no harm" into their approach to health care investments.

There has been sufficient evidence across multiple studies in different contexts that PE firms have increased costs to patients and insurers (including employers and state and federal governments), and in certain circumstances their financial engineering strategies have plausibly contributed to negative patient outcomes. The burden of proof of "doing no harm" should now shift to PE firms to demonstrate that they are not.

Exhibit 1: 2023 Health Care Bankruptcies by Ownership.



Source: Private Equity Stakeholder Project, https://pestakeholder.org/reports/private-equity-health care-bankruptcies-are-on-the-rise/, accessed 14 June 2024.

Exhibit 2: Characteristics of Private Equity–acquired Versus Nonacquired Hospitals Before Acquisition in 2003 and After Acquisition in 2017

			2017			
	2003		Private equity (n=233)		Non-private equity (n=1,168)	
Characteristics	**Private equity, mean (n=233)**	**Non-private equity, mean (n=1,158)**	**Mean**	**Change (%)**	**Mean**	**Change (%)**
Hospital operations						
Bed size (no. of beds)	225.7	188.5***	231.3	+2.5	185.7***	-1.5
Total discharges	10,673	9,424*	11,412	+6.9	9,303***	-1.3
RN staffing (FTE hours per 1,000 patient days)	5.84	5.75	7.06	+20.8	7.54	+31.1
All staffing (FTE hours per 1,000 patient days)	20.14	23.4****	20.07	-0.4	24.7****	+5.6
Financial status						
Net patient revenue per discharge	$10,287	$9,535*	$11,051	+7.4	$11,595	+21.6
Total operating expenses per discharge	$9,596	$9,656	$10,018	+4.4	$11,690***	+21.1
Percent operating margin	4.42	-1.20****	7.37	+66.5	-1.24****	-3.8
Charge-to-cost ratio	3.77	3.13****	7.72	+105.0	4.82****	+54.2
Percent of discharges paid by Medicaid	14.1	15.6*	20.3	+44.1	18.6*	+18.9
County characteristics averaged at hospital level						
Per capita income	$42,092	$40,744*	$49,229	+17.0	$47,967	+17.7
Population (no. of people)	1,012,305	1,205,553	1,165,051	+15.1	1,197,772	-0.6
Percent uninsured	19.2	18.7	12.7	-33.7	11.8**	-37.2
Beds per 1,000 residents	3.30	3.34	2.81	-15.1	2.72	-18.8
Herfindahl-Hirschman Index (by HRR)	0.144	0.113	0.164	+14.0	0.131****	+15.9

Source: Data extracted from Centers for Medicare and Medicaid Services Health care Provider Cost Reporting Information System reports or American Hospital Association Annual Survey in 2003 and 2017.

Note: Values represent means; significance denotes two-sample t-tests. RN is a registered nurse. FTE is full-time equivalent. HRR is a hospital referral region. *p < 0:10 **p < 0:05 ***p < 0:01 ****p < 0:001

Exhibit 3: PE-Backed Health care Bankruptcies Since 2019

Company	Filing Type	Filed date	Year-Qtr	Backing	Investors	Company Type	Assets	Liabilities
Air Methods Corporation	Chapter 11	10/24/2023	2023-4Q	PE	American Securities	Air medical transport	$1,000,000,001-$10 billion	$1,000,000,001-$10 billion
Akumin Inc.	Chapter 11	10/22/2023	2023-4Q	PE	Stonepeak Partners	Diagnostic imaging		
Biocept, Inc.	Chapter 7	10/13/2023	2023-4Q	PE	Ally Bridge Group	Laboratory Services		
RevitaLid Pharmaceutical Corp	Chapter 11	10/12/2023	2023-4Q	PE	Athyrium Capital Management	Pharmaceuticals		
Legacy-Xspire Holdings, LLC	Chapter 11	9/26/2023	2023-3Q	PE	HealthEdge Partners	Pharmaceuticals		
SmileDirectClub	Chapter 11	9/19/2023	2023-3Q	PE	Clayton Dubilier & Rice	Dental		
American Physician Partners	Chapter 7	8/21/2023	2023-3Q	PE	Brown Brothers Harriman Capital Partners, Brentwood Capital Advisors	Staffing	$100,000,001-$500 million	$500,000,001-$1 billion
Center for Autism and Related Disorders. LLC	Chapter 11	6/11/2023	2023-2Q	PE	Blackstone Group	Autism services	$50,000,001-$100 million	$100,000,001-$500 million
Genesis Care Pty Ltd	Chapter 11	6/1/2023	2023-2Q	PE	KKR	Oncology	$1,000,000,001-$10 billion	$1,000,000,001-$10 billion
Capcium	Chapter 7	5/19/2023	2023-2Q	PE	Fulcrum Capital Partners	Pharmaceuticals		
Envision Health care Corporation	Chapter 11	5/15/2023	2023-2Q	PE	KKR	Staffing	$1,000,000,001-$10 billion	$1,000,000,001-$10 billion
Jenny Craig	Chapter 7	5/5/2023	2023-2Q	PE	H.I.G. Capital, The Sterling Group	Weight management		
Si02 Medical Products, Inc.	Chapter 11	3/29/2023	2023-1Q	PE	Oaktree Capital, Novartis, MPM Capital, JMC Investment	Medical supplies	$100,000,001-$500 million	$500,000,001-$1 billion
Williamston Hospital Corporation	Chapter 7	3/20/2023	2023-1Q	PE	Davidson Kempner Capital Management, GoldenTree Asset Management	Hospital		
Tehum Care Services. Inc (Corizon)	Chapter 11	2/14/2023	2023-1Q	PE	BlueMountain Capital Management, Flacks Group	Correctional health care	$1,000,001-$10 million	$10,000,001-$50 million
Delphi Behavioral Health Group, LLC	Chapter 11	2/6/2023	2023-1Q	PE	Halifax Group	Addiction treatment	$1,000,001-$10 million	$10,000,001-$50 million
Pharmacy Development Services	Chapter 7	1/23/2023	2023-1Q	PE	Millpond Equity Partners, New Canaan Funding	Pharmacy consulting		
Pipeline Health System. LLC	Chapter 11	10/2/2022	2022-4Q	PE	Deerfield Management, Davidson Kempner Capital Management, and Stanton Road Capital	Hospital	$500,000,001-$1 billion	$500,000,001-$1 billion
Level Four Orthotics & Prosthetics, Inc.	Chapter 11	8/29/2022	2022-3Q	PE	Penta Mezzanine Fund	DMEPOS	$10,000,0001-$50 million	$10,000,0001-$50 million
Carestream Health, Inc.	Chapter 11	8/23/2022	2022-3Q	PE	Onex Partners	Diagnostic imaging	$1,000,000,001-$10 billion	$1,000,000,001-$10 billion
CFX CDO co., Inc.	Chapter 11	1/11/2022	2022-1Q	PE	L Catterton	Pharmaceuticals	$500,001-$1 million	$10,000,001-$50 million
Watsonville Hospital Corporation	Chapter 11	12/5/2021	2021-4Q	PE	Leonard Green & Partners, Halsen Health care	Hospital	$10,000,001-$50 million	$10,000,001-$50 million
Gulf Coast Health Care, LLC	Chapter 11	10/14/2021	2021-4Q	PE	Barrow Street Capital, Blue Mountain Capital, EagleArc	Nursing homes	$10,000,001-$50 million	$100,000,001-$500 million
CMC II LLC	Chapter 11	3/1/2021	2021-1Q	PE	Formation Capital	Nursing homes	$100,000,001-$500 million	$100,000,001-$500 million

Community Intervention Services, Inc.	Chapter 11	1/5/2021	2021-1Q	PE	H.I.G. Capital	Behavioral health	$100,000,001-$500 million	$100,000,001-$500 million
American Purchasing Services, LLC d/b/a American Medical Depot	Chapter 11	12/11/2020	2020-4Q	PE	Clayton Dubilier & Rice	DMEPOS	$10,000,001-$50 million	$50,000,001-$100 million
Adeptus	Chapter 7	12/1/2020	2020-4Q	PE	Deerfield Management	Urgent care	$1,000,001-$10 million	$100,000,001-$500 million
Benevis (Kool Smiles)	Chapter 11	8/2/2020	2020-3Q	PE	FFL Partners, Littlejohn & Co, Tailwind Capital	Dental	$100,000,001-$500 million	$100,000,001-$500 million
Interactive Health Solutions, Inc.	Chapter 7	6/14/2020	2020-2Q	PE	FFL Partners	Health management		
IntegraMed Management of Mobile, LLC	Chapter 7	5/20/2020	2020-2Q	PE	Sagard Capital Partners	Reproductive endocrinology	$100,001-$500,000	$100,000,001-$500 million
Cedar Haven Acquisition. LLC	Chapter 11	8/2/2019	2019-3Q	PE	Stone Barn Holdings	Nursing homes	$1,000,001-$10 million	$10,000,001-$50 million
THG Holdings LLC	Chapter 11	7/30/2019	2019-3Q	PE	Riverside Partners, Monroe Capital	Diagnostic services	$0-$50,000	$100,000,001-$500 million
Center City Health Care. LLC	Chapter 11	6/30/2019	2019-2Q	PE	American Academic Health System	Hospital	$100,000,001-$500 million	$100,000,001-$500 million
Joerns WoundCo Holdings, Inc.	Chapter 11	6/24/2019	2019-2Q	PE	Quad-C Management, NexPhase Capital, PineBridge Investments, Littlejohn & Co	DMEPOS	$100,000,001-$500 million	$100,000,001-$500 million
Memory Care America LLC	Chapter 11	6/4/2019	2019-2Q	PE	Cibolo Creek Partners	Nursing homes	$1,000,001-$10 million	$10,000,001-$50 million
Laser Spine Institute	Chapter 7	3/1/2019	2019-1Q	PE	EFO Private Equity, Sheridan Capital Partners	Surgical		
Sheer Strength Labs, LLC	Chapter 11	2/18/2019	2019-1Q	PE	Baymark Partners, PurpleRock Capital Partners	Nutrition supplements	$500,001-$1 million	$10,000,001-$50 million
Trident Holding Company, LLC	Chapter 11	2/10/2019	2019-1Q	PE	Formation Capital, Frazier Health Care Partners	Laboratory services	$0-$50,000	$500,000,001-$1 billion

Source: Private Equity Stakeholder Project, https://pestakeholder.org/reports/private-equity-health care-bankruptcies-are-on-the-rise/, accessed June 14, 2024.

Exhibit 4: Most Distressed Health Care Companies

Name	DBA Name	PE Ownership?	PE Firm	Probability of Default Rating	Company Type
Alvogen Pharma US, Inc.	Alvogen	Y	CVC Capital, Temasek	B3-PD	Pharmaceuticals
Athletico Holdings, LLC.	Athletico Physical Therapy	Y	BDT Capital Partners, LLC	Caa1-PD	Physical therapy
Avalign Holdings Inc.	Avalign Technologies	Y	Linden Capital Partners, Harvest Partners	Caa1-PD	Medical devices
Aveanna Health Care LLC	Aveanna Health Care	Y	Bain Capital, JH Whitney	Caa1-PD	Home health
Bausch Health Companies Inc.	Bausch Health	N	n/a	Caa3-PD	Pharmaceuticals
BVI Holdings Mayfair Limited	BVI Medical	Y	TPG Capital	Caa3-PD	Medical devices
BW NHHC Holdco, Inc.	Elara Caring	Y	Blue Wolf Capital Partners, Kelso & Company	Caa3-PD	Medical staffing
Cano Health, LLC	Cano Health	Y	InTandem Capital Partners - 34% stake	Ca-PD	Primary care
Carestream Dental Technology, Inc.	Carestream Dental	Y	Clayton, Dubilier & Rice and CareCapital Advisors	Caa2-PD	Dental care
Carestream Health, Inc.	Carestream Health	Y	Onex Partners	Caa1-PD	Medical imaging
CHS/Community Health Systems, Inc.	Community Health Systems	N	n/a	Caa1-PD	Hospitals
Covenant Physician Partners	Covenant Physician Partners	Y	KKR	Caa2-PD	Outpatient care
Curia Global, Inc.	Curia Global	Y	Carlyle Group, GTCR	Caa2-PD	Contract research organization
Emergent BioSolutions Inc.	Emergent BioSolutions	N	n/a	Caa1-PD	Biopharmaceuticals
Exactech, Inc.	Exactech	Y	TPG	Caa2-PD	Medical devices
EyeCare Partners, LLC	EyeCare Partners	Y	Partners Group	Caa2-PD	Eye care
Femur Buyer, Inc.	Orchid Orthopedic Solutions	Y	Nordic Capital	Caa2-PD	Medical devices
FH MD Parent, Inc.	Elevate	Y	Frazier Health Care Partners, Edgewater Funds	Caa1-PD	Revenue cycle management
Global Medical Response, Inc.	Global Medical Response	Y	KKR	Caa2-PD	Emergency medical transport
Gordian Medical, Inc.	American Medical Technologies	Y	One Equity Partners	Ca-PD	Medical supplies
HealthChannels Intermediate Holdco, LLC	ScribeAmerica	Y	Vesey Street Capital Partners	Caa1-PD	Medical scribes
Knight Health Holdings LLC	ScionHealth	Y	Apollo Global Management	B3-PD	Hospitals
LifeScan Global Corporation	LifeScan	Y	Platinum Equity	Caa2-PD	DME
MED ParentCo., LP.	MyEyeDr	Y	Goldman Sachs Group Inc	Caa1-PD	Eye care
Medical Depot Holdings, Inc.	Drive DeVilbiss Health Care	Y	Clayton, Dubilier & Rice	Caa2-PD	DME
National MENTOR Holdings Inc.	Sevita	Y	Centerbridge Partners, Vistria Group	Caa1-PD	Disability services
NMN Holdings III Corp.	Numotion	Y	AEA Investors	B3-PD	DME
OMERS Relief Acquisition, LLC	Gastro Health	Y	OMERS Private Equity	B3-PD	Gastroenterology
One Call Corporation	One Call Care Management	Y	KKR, Blackstone	Caa1-PD	Health network, workers' comp
Pluto Acquisition I, Inc.	AccentCare	Y	Advent International	Caa1-PD	Home health, hospice
Quantum Health, Inc.	Quantum Health	Y	Great Hill Partners, Warburg Pincus	B3-PD	Care coordination
Quorum Health Corporation	Quorum Health	Y	Davidson Kempner Capital Management, GoldenTree Asset Management	Ca-PD	Hospitals
Radiology Partners, Inc.	Radiology Partners	Y	Heritage Group, Whistler Capital Partners	Caa1-PD	Radiology
SM Wellness Holdings	Solis	Y	Madison Dearborn Partners	Caa2-PD	Mammography services

Sound Inpatient Physicians, Inc.	Sound Physicians	Y	Summit Partners, Silversmith Capital Partners, Revelstoke Capital Partners, Optum, Athyrium Capital Management	Caa2-PD	Physician group
Team Health Holdings, Inc.	Team Health	Y	Blackstone Group	Caa3-PD	Medical staffing
Thrive Pet Health Care	Thrive Pet Health Care	Y	Ares Capital, TSG Consumer	B3-PD	Veterinary care
U.S. Renal Care, Inc	U.S. Renal Care	Y	Bain Capital, Summit Partners, Ergo Partners, Revelstoke Capital Partners	Caa1-PD	Renal care
Upstream Newco, Inc.	Upstream Rehabilitation	Y	Revelstoke Capital Partners, Athyrium Capital Management, Stags Participations, Shumway Capital	Caa1-PD	Rehabilitation
US Radiology Specialists, Inc.	US Radiology Specialists	Y	SunGate Capital, Welsh, Carson, Anderson & Stowe	B3-PD	Radiology
Viant Medical Holdings, Inc.	Viant Medical	Y	JLL Partners, Water Street Health Care Partners	Caa1-PD	Medtech
Vyaire Medical, Inc.	Vyaire Medical	Y	Apax Partners	Ca-PD	DME
Wellpath Holdings, Inc.	Wellpath	Y	H.I.G. Capital	Caa1-PD	Correctional health care
Women's Care Holdings, Inc.	Women's Care	Y	BC Partners	B3-PD	Women's health
YI, LLC	Young Innovations	Y	The Jordan Company	Caa1-PD	Medical devices

Source: Private Equity Stakeholder Project, https://pestakeholder.org/reports/private-equity-health care-bankruptcies-are-on-the-rise/, Accessed June 14, 2024.

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[xlvii] First, while the Gao paper followed hospitals from 4 years before to 8 years after acquisition, their inclusion criteria is only 2 years before to 2 years after (p.12), With this inclusion criteria, their sample size pre-acquisition would be smaller than post-acquisition. Their mortality and readmission data in the later years is smaller. Further, with regards to the conclusion that PE acquired hospitals are more likely to survive than non-PE hospitals (Figure 4) is subject to question. The PE targets and the non-PE targets were not matched against each other. They were matched to their own controls. It has been documented that PE firms tend to acquire larger, more urban, already profitable hospitals. Non-PE owned firms include smaller, rural hospitals that have been financially challenged in recent years. The comparisons are not quite apples to apples.

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