

Phase based economic and predictive revenue models characterize private equity buyouts of specialty medical practices

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Abstract

Introduction:

Private equity (PE) is increasingly reshaping procedural specialties that combine medical and self-pay services, yet the literature lacks a unified framework linking PE ownership stages to practice revenue, organizational change, and workforce consequences. This study develops a phase-based economic framework and revenue calculator to characterize how PE may alter specialty practices over the full investment life cycle.

Methods:

We identified phases of PE ownership and synthesized published evidence on prices, utilization, consolidation, and physician turnover into a unified conceptual model. Using published data, we developed an expected percent change in revenue calculator to estimate phase-specific revenue trajectories. The model incorporates both self-pay and medical claims-based revenue streams and links change to financing, governance, operational, and labor market mechanisms across ownership phases.

Results:

We define four phases of PE ownership: pre-acquisition, post-acquisition, pre-exit, and post-exit. PE may generate short term revenue growth through leveraged roll ups, governance restructuring, operational intensification, add on acquisitions, and multiple expansion before exit. The revenue calculator offers a structured approach to estimating changes in total practice revenue. However, the same mechanisms associated with revenue growth also contribute to consolidation, physician turnover, and workforce instability in the post exit period, with potential risks to continuity of care and organizational stability.

Discussion:

This phase-based framework and calculator link PE driven financial strategies to downstream revenue and workforce effects across procedural specialties. We discuss how these effects may differ across physician career stages. The framework provides a foundation for future policy simulations examining whether limits on serial buyouts, greater transparency around turnover, and protections for continuity of care may reduce risk as PE penetration increases.

Introduction

Private equity (PE) has rapidly expanded from real estate and industrial sectors into healthcare, reshaping how physician practices are owned, operated, and valued.¹ We focus explicitly on revenue because growth in a practice's revenue is not financially neutral in healthcare; it is the mirror image of

higher spending by patients, employers, or payers. From that perspective, PE's emphasis on revenue enhancement is central to understanding how buyouts can increase system costs. Parallels to the housing market are increasingly salient: short-horizon buyouts can raise rent and price increases 17–30% in the near term and also risk longer-term instability and displacement.^{2,3} A similar pattern may emerge in healthcare as short-cycle acquisitions drive front-loaded revenue growth at the potential cost of sustainability and professional stability. In procedural specialties, such as dermatology, ophthalmology, and plastic surgery, where practices often blend cosmetic and medically indicated care, these dynamics create a particularly attractive target for investors while raising concerns for patients, physicians, and regulators.

In this context, a PE life cycle for procedural specialty practices contains four phases: pre-acquisition baseline, post-acquisition (years 1–3), pre-exit scaling, and post-exit (years 1–2).⁴ Pre-acquisition, fragmented physician-owned practices operate with locally influenced charges, encounter volumes, and referral patterns. Post-acquisition, PE firms typically execute leveraged roll-ups, consolidating multiple small practices and installing governance structures that intensify revenue generation through performance-linked compensation, centralized oversight, and coding and procedural growth incentives. Growth capital is deployed to fund add-on acquisitions and platform expansion, while operational efficiencies like centralized billing, bulk purchasing, and utilization management are layered onto clinical workflows. In the pre-exit phase, revenue and valuation often peak via multiple arbitrage, followed by an exit phase characterized by secondary buyouts, practice reorganization, and potential instability in physician staffing and service lines.³ Prior work has described pieces of these phases and shown post-acquisition shifts in practice behavior, including higher charges, allowed amounts per claim, encounter volume, and new-patient volume in dermatology.⁵ Yet existing studies do not provide a full-cycle economic model that connects these financial strategies to long-term changes in practice performance and physician careers.

This study aims to address that gap by developing a phase-based economic life-cycle framework for PE investment in combined cosmetic-medical specialty practices and introducing a new quantitative prediction tool.

Methods

We developed a phase-based analytic framework to characterize how financing, governance, operational, and labor-market mechanisms may function across successive phases of private equity ownership. We then constructed an illustrative expected percent change in revenue calculator that combines cosmetic and medical revenue estimates into a single, phase-specific revenue trajectory. The calculator synthesizes published estimates of changes in medical and cosmetic revenue into a unified phase-specific revenue trajectory, using reported changes in charges, allowed amounts, encounters, and new-patient volume as contributors to practice-level revenue. Finally, we applied this framework to physician workforce and patient care considerations, examining how private equity ownership may shape job opportunities, turnover, and continuity.

Results

Expected Percent Change in Revenue Calculator

Recognizing that many procedural subspecialty medical offices, including but not limited to plastic surgery, dermatology, ophthalmology, otolaryngology, and dentistry, derive a substantial fraction of income from both insurance-billed and self-pay services, we modeled practice revenue as the sum of 2 distinct streams: (1) claims-based medical revenue and (2) cash-pay cosmetic revenue.^{6,7} At baseline, total annual revenue was defined as $R_{\text{total}} = R_{\text{med}} + R_{\text{cos}}$, where R_{med} denotes insurance-billed services and R_{cos} denotes cosmetic or self-pay services. We specified a baseline cosmetic share $c = R_{\text{cos}}/R_{\text{total}}$, informed by existing literature on revenue composition in aesthetic-heavy practices.

For medical claims, we developed an illustrative “expected percent change in revenue” calculator to synthesize published estimates of claims-based changes after PE acquisition into a single summary trajectory. This calculator is a heuristic modeling tool rather than a re-estimation or replication of the original regression models. It is designed to make the magnitude and timing of PE-associated changes in practice economics more interpretable over the investment life cycle.

Expected %Δ Revenue = ($\beta_1 \times \% \Delta \text{charges}$) + ($\beta_2 \times \% \Delta \text{allowed amounts}$) + ($\beta_3 \times \% \Delta \text{encounters}$) + ($\beta_4 \times \% \Delta \text{new patients}$)

β_1 = weight on % change in charges per claim

β_2 = weight on % change in allowed amount per claim

β_3 = weight on % change in encounters

β_4 = weight on % change in amount of new patients

First, we treat practice-level revenue as jointly influenced by four empirically observed components: (1) percentage change in charges per claim, (2) percentage change in allowed amounts per claim, (3) percentage change in total encounters, and (4) percentage change in new-patient volume. We use published difference-in-differences estimates from Berquist Klarnet and Dafny as inputs for these four components and interpret them as indicative effects on each margin in procedural practices post-acquisition.³ Because the original study models each outcome separately, we do not assume that these effects are statistically independent or that they can be combined into a single structural revenue equation.

Because claims data do not directly observe pure cash-pay cosmetic activity, we modeled cosmetic revenue using a separate, scenario-based adjustment. For each phase of the PE life cycle (pre-acquisition baseline, post-acquisition years 1–3, pre-exit scaling, and post-exit years 1–2), we

specified a cosmetic growth factor, representing the expected percentage change in cosmetic revenue associated with PE-driven marketing, branding, and service-line expansion.

Finally, we combined the two streams to obtain a phase-specific expected change in total practice revenue:

$$\text{Expected \% } \Delta \text{Revenue}^{\text{total, phase}} = (1 - c) \text{Expected \% } \Delta \text{Revenue}^{\text{med, phase}} + (c) \text{Expected \% } \Delta \text{Revenue}^{\text{cos, phase}}$$

For example, if cosmetic services account for 40% of baseline revenue ($c = 0.4$), medical revenue increases by 20% in a given phase, and cosmetic revenue increases by 30%, the expected total revenue increase in that phase would be 24%.

$$\text{Expected \% } \Delta R^{\text{total, phase}} = (0.6 \times 20\%) + (0.4 \times 30\%) = 12\% + 12\% = 24\%.$$

This formulation makes explicit that our quantitative framework produces (1) a claims-based estimate calibrated to published coefficients and (2) an overlay of cosmetic revenue dynamics based on transparent, individualized assumptions. All resulting trajectories are intended as stylized, testable predictions rather than precise forecasts and should be interpreted in light of the underlying data limitations for cosmetic encounters.

Economic Life Cycle Framework

To contextualize the revenue model, we define four phases of PE ownership: pre-acquisition baseline, post-acquisition, pre-exit scaling, and post-exit (Fig. 1). These phases organize mechanisms reported in the literature into a temporal structure relevant to procedural specialties that provide both medically indicated and self-pay services. Unlike studies that focus only on immediate post-acquisition utilization changes, this framework considers the full ownership cycle and its downstream implications for practice operations and physician careers. Revenue is the focal quantitative outcome of the calculator because it is the clearest operational pathway through which PE creates enterprise value and, by extension, raises costs elsewhere in the healthcare system.

Across these phases, four interacting mechanisms shape how value is generated and redistributed: financing, governance, operations, and labor-market response. Financing refers to leveraged acquisition and roll-up strategies used to generate equity returns. Governance refers to ownership control, incentive design, and managerial oversight. Operations refers to practice-level changes in coding intensity, pricing, encounter volume, referral capture, service mix, and add-on acquisitions that increase revenue and EBITDA. Labor-market response refers to the downstream effects of these strategies on physician retention, autonomy, turnover, and movement across practice settings. Together, these domains provide a mechanism-based structure for understanding how PE ownership may convert organizational change into near-term revenue growth and longer-term instability.

In the post-acquisition phase, leveraged financing and roll-up strategies translate into strong incentives to increase near-term EBITDA. Operational levers like higher charges per claim, increased allowed amounts, and growth in encounter and new-patient volume may be activated to expand top-line revenue and justify higher valuation multiples at exit.^{3,5} These revenue gains are economically important not only because they increase practice income, but also because they imply higher spending elsewhere in the healthcare system. Event-study estimates suggest that PE acquisition of dermatology practices is associated with roughly 10%–26% increases in charges and allowed amounts per encounter and 8%–11% increases in total and new patients over the early post-acquisition period.^{5,8} In the pre-exit scaling phase, additional growth may be achieved through add-on acquisitions and continued utilization expansion, further increasing EBITDA and supporting multiple arbitrage opportunities when the platform is sold to a larger PE fund.³ In the post-exit phase, however, the same resale-oriented logic may manifest as physician turnover, organizational restructuring, and disrupted continuity. A summary of prior examples in the literature is provided in Table 1. Our revenue calculator, therefore, should be interpreted as the economic counterpart to these downstream labor-market effects, not as a stand-alone measure of practice success.

Table 1
Summary of Reported PE-Associated Changes in Pricing, Utilization, and Physician Turnover

Study	Setting	Estimates reported	What the estimates reflect	Key modeling assumptions
Braun et al.	Dermatology	3% to 5% higher routine visit prices; 4.7% to 17.0% higher patient volume per dermatologist after acquisition	Changes in pricing and utilization in dermatology practices after PE acquisition	Assumes claims-based routine visits capture a meaningful share of dermatology activity; estimates are averaged over the post-acquisition period and do not separately model cosmetic cash-pay revenue
Singh et al.	Dermatology, gastroenterology, ophthalmology	20.2% higher charges per claim; 11.0% higher allowed amounts per claim; 16.3% higher encounter volume; 25.8% more unique patients; 37.9% more new patients	Cross-specialty post-acquisition changes in billing and utilization from a difference-in-differences design	Assumes claims data reflect payer-billed utilization; outcomes are estimated separately and are not a structural total-revenue equation; specialty-level effects may differ from pooled estimates
Berquist, Klarnet, and Dafny	Physician practices sold by PE owners	16.5 percentage points higher likelihood of working elsewhere within 2 years after sale; 10.1 percentage points higher likelihood of joining a large practice after leaving	Physician turnover and consolidation after PE exit	Assumes matched controls in the same local markets and specialties provide a valid counterfactual; uses panel data from 2014–2020; focuses on post-exit movement rather than acquisition-stage effects
Woolhandler et al.	Ophthalmology practices acquired by PE	46.8% increase in clinician headcount and 265% increase in physician turnover relative to controls	Workforce growth and turnover after PE acquisition in ophthalmology	Assumes claims-linked practice data and nonacquired practices provide a valid comparison group; estimates reflect post-acquisition change relative to controls and may not separate specialty mix changes from staffing churn

Study	Setting	Estimates reported	What the estimates reflect	Key modeling assumptions
Our revenue calculator	Procedural specialties, mixed medical and cosmetic	Weighted expected % change in revenue derived from the above components	Synthesizes claims-based and cosmetic revenue changes into a phase-specific revenue trajectory	Assumes revenue can be approximated as a weighted combination of charges, allowed amounts, encounters, and new patients, with a separate cosmetic revenue component

Discussion

Exit-Phase Workforce Instability and Continuity Risks

It is important to note that post-exit dynamics introduce significant labor-market and quality concerns for both patients and physicians. Private equity firms commonly target practices held by physicians approaching retirement age. A 60-year-old physician, for example, may be offered a substantial fee for the sale of their practice during the five-year “investment phase”. During this, the physician/owner is offered a handsome salary to continue their practice. But that contract is typically not renewed as the investors enter the “harvesting phase”. Experienced office staff and non-physician providers are replaced with lower-cost employees, resulting in a potentially less capable workforce. Similarly, although PE buyouts may substantially enrich equity-holding partners, those financial gains are often not shared across the broader physician group. As senior partners exit after their earnout period, the downstream effects of the transaction become more apparent to remaining physicians through workforce attrition, operational hollowing, and reduced professional autonomy, creating the conditions for a form of post-acquisition ‘buyer’s remorse.’ These post-exit changes may all place patients at greater risk. Large-scale evidence from nursing homes, for example, shows that private equity ownership is associated with roughly a 10% increase in short-term mortality, declines in nurse staffing and regulatory quality measures, and higher public spending per episode of care.⁹ This suggests that aggressive cost reallocation and profit-maximizing strategies can produce detectable harm even when conventional quality metrics fail to capture these changes in the short term.

Evidence from physician practice acquisitions points in a similar direction. In a study of ophthalmology practices, Woolhandler and colleagues found that clinician turnover more than doubled in PE-acquired practices over the three years after acquisition, with a roughly 265% increase in the proportion of physicians leaving year-to-year, even as net headcount grew and the replacement rate rose sharply.¹⁰ The Berquist et al case-control study suggested that physicians in PE-owned practices that subsequently exited were 16.5% more likely to be working elsewhere within two years and 10.1% more likely to join very large practices (> 120 physicians), corresponding to about a 27% relative reduction in retention.⁴

This pattern suggests a churn-and-consolidate dynamic in which the exit phase can convert earlier revenue expansion into workforce disruption and aggregation into larger platforms. In mixed cosmetic and medical specialty practices, where value depends heavily on longitudinal relationships, specialized procedural skill, and local reputation, that instability may have clinically meaningful consequences on outcomes, patient access, continuity, and professional autonomy. This is particularly true with increased turnover as practices are grown and resold to achieve higher exit prices.

Private equity firms may also contribute to market concentration by “rolling up” multiple practices within a specialty and across geographic regions, which can reduce local competition. In dermatology specifically, Tan et al. found that PE-backed practices expanded their geographic footprint over time in some regions and accumulated substantial market share that could allow a single firm to exert dominant influence in the local market.¹¹ This consolidation can contribute to higher prices, with additional cost implications passed onto patients. Although our revenue calculator represents the clearest mechanism by which private equity creates value within a practice, that revenue growth necessarily implies higher costs and tradeoffs elsewhere in the healthcare system, consistent with Uwe Reinhardt’s “Iron Law of Healthcare Economics” that one person’s revenue is another person’s cost.¹²

Private equity’s expanding role in mixed insurance and self-pay specialty practices raises fundamental questions about whose interests ownership structures are designed to serve. Taken together, the emerging evidence and our life-cycle modeling reinforce the view that PE’s core objective is to optimize enterprise value at exit, rather than maximize long-run clinical quality or professional stability. Our concern is therefore not simply that PE raises revenue, but that it does so through mechanisms that may increase system spending while shifting operational and workforce risks onto practices, clinicians, and patients. Our life-cycle framework makes these dynamics explicit by showing how financing (leverage), governance (incentive design and control), operations (utilization and pricing), and labor-market responses (turnover and physician exit) are sequenced over time to support resale at a higher price, even when the implications for patients and clinicians are uncertain or adverse.

For mixed-revenue specialties, the clearer inference is not that PE necessarily creates uniquely greater patient risk than in all other specialties, but that these practices are especially attractive acquisition targets because they combine high-margin procedural and self-pay service lines. This attractiveness is reinforced by reimbursement systems, including RVU-based payment, that reward procedure-intensive care more heavily than cognitive care. Repeated buy–sell cycles can erode organizational memory and relational continuity, producing staff turnover, shifting coverage patterns, and clinic closures or reconfigurations that disrupt patient care. Early-career physicians face exposure to volatile compensation models, productivity pressure, and limited paths to equity or governance influence. Mid- and late-career clinicians may experience loss of autonomy, forced integration into large platforms, and constrained exit options. Across the career spectrum, the central tension is that PE owners prioritize changes that make EBITDA, revenue growth, and margins look attractive to the next buyer, rather than changes consistent with optimized patient outcomes and stewardship of a professional practice.

These concerns suggest a clear agenda for policy simulation and regulatory design. Scenario-based modeling using our framework could be used to explore how alternative rules, such as limits on serial secondary buyouts, enhanced transparency around debt loads and physician turnover, or protections for continuity of care, may alter both economic and clinical trajectories in PE-dominated markets. The policy concern is acute in mixed-revenue procedural specialties, like dermatology and plastic surgery, as their revenue opportunities are concentrated in payment structures that favor procedures. Understanding and mitigating the effects of rapid financial churn will be essential to ensuring that capital deployment enhances, rather than undermines, the long-term integrity of care.

Conclusion

Private equity ownership of procedural specialty practices follows a recognizable economic life cycle in which leveraged acquisitions, revenue intensification, scaling, and exit create strong incentives for near-term financial growth. We introduce a paired phase-based framework and revenue calculator to characterize private equity-associated changes in practice revenue across this ownership cycle. At the same time, our analysis suggests that value creation for investors contributes to workforce instability and threats to continuity. As private equity continues to expand across specialties that blend insurance and self-pay care, longitudinal evaluation and targeted policy safeguards will be needed to ensure that financial restructuring does not undermine the long-term stability and integrity of patient care.

Declarations

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Not Applicable

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Not applicable.

Consent to Publish Statement: Not applicable.

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Author Contribution

M.D. - Prepared the original draft, made revisions, created the table.C.S. - Edited the original draft, created the figure, conception of idea.D.C. - Provided clinician perspective, made edits throughout for

clarity R.R. - Informed edits, advised additional conceptual direction, recommended additional citations B.K. - Confirmed economic model, advised conceptual direction, confirmed overall accuracy, provided additional citations. All authors reviewed and approved manuscript.

Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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Figures

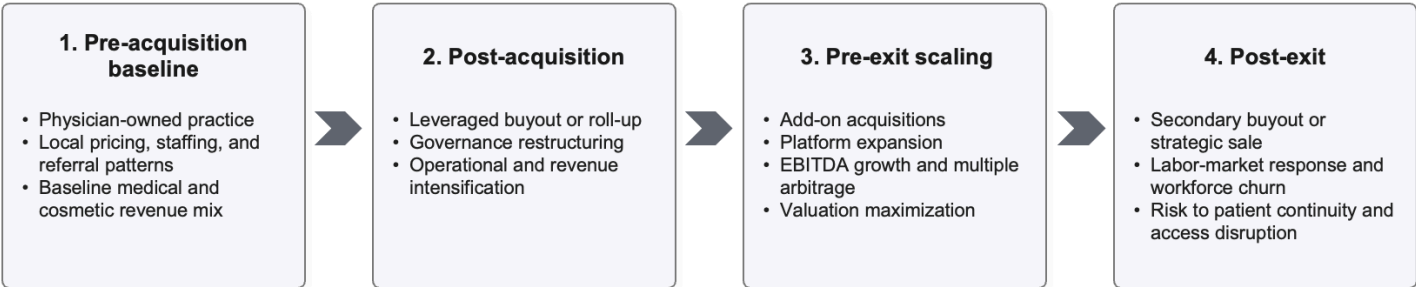


Figure 1

Phase-based economic life cycle of private equity ownership for procedural specialty practices