Foisted: The Spillover Effects of Hospital Mergers on Costs and Utilization

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Extended Abstract

Standard economic models of market concentration show firms with market power reduce quantities to agents with lower willingness-to-pay shift production and services to agents with higher willingness-to-pay. If firms gain market power through mergers and acquisitions, then lower willingness-to-pay consumers could be shifted to market competitors, particularly if in markets with price-inelastic goods and services. However, the spillover effects of consolidation remain largely understudied. In this paper, we examine the spillover effects of hospital mergers on the cost-structures and operations of non-merging hospitals.

For two reasons, a relevant market to examine this question is hospital care. First, hospital markets have consolidated due to mergers and acquisitions. Over the 2009 to 2022 period, over 2,000 hospitals have been acquired. Nearly all U.S. hospital markets are highly concentrated, using standard measures of market concentration (Fulton 2017). Second, hospitals face multiple patient populations with different reimbursement rates (e.g., lower-paying Medicare and Medicaid patients vs. higher-paying privately-insured patients). Unlike many other industries, hospitals have limited ability to price discriminate, and in many cases, are required to provide care, regardless of payment rates.

Also unique to hospitals, and health care in general, is the unique nature of hospital services. Unlike many other settings, consumers, which in this case are specially referred to as patients, require medical services as a necessity. While in other markets, the marginal patients that firms no longer provide services to may simply not consume a good or service, many

patients require care. In the absence of a firm with market power, they will likely go to another firm with less ability to preferentially allocate capacity. In health care settings, these less-preferential firms are commonly safety-net clinics and hospitals. However, the impacts of mergers among non-merging firms is largely unknown.

In this paper, we examine these questions using the universe of hospital mergers over the 2009 to 2022 period. We use data from several sources, including the American Hospital Association's annual survey, which includes information on hospital staffing and capacity, and Hospital Cost Reports, which are reported by hospitals to the Centers for Medicare and Medicaid Services (CMS) and contain information on hospital revenues, finances, and procedure volume. Using a dynamic event-study approach that accounts for staggered treatment effect heterogeneity (Goodman-Bacon 2021; Sun and Abraham 2020), we examine changes in procedure volume, payer mix, and staffing. We examine these outcomes for both merging hospitals, as well as at the market-level to understand impacts on non-merging firms.

We make several relevant findings on hospital and market-level service delivery following a hospital merger. First, among merging hospitals, care delivery, measured by both the number of services and care capacity, measured through the number of beds declines. Following a merger, total patient discharges at the merging hospital decline by approximately 5% and the number of beds declines by nearly 10%. The reductions in discharges are concentrated among public-paying patient populations (Medicare and Medicaid), which commonly have lower-reimbursement rates than privately-insured patients, where see an increase in patient volume. We accordingly see reductions in procedure volume, including surgeries, as well as labor and delivery services. The reductions in labor and delivery services are consistent with reductions in public-paying patients, as approximately 50% of US hospital births are covered by Medicaid. In

part due to their large Medicaid coverage, labor and delivery services are also commonly less profitable than other hospital procedures. Consistent with existing research, merging hospitals reduce full-time employment by nearly 15% (Prager and Schmitt 2021). Reductions in employment are equally borne by both physicians and nurse practitioners—the share of clinicians who are physicians does not change. Overall, these results are consistent with merging hospitals exploiting market leverage to reduce capacity among lower-paying patients and services.

Where do these patients and workers go? Particularly among labor and delivery services, it is unlikely that clinical needs go unmet. Likewise, the clinician labor market is tight, and workers have many competing options. We find almost one-to-one increases in patient volume among non-merging hospitals in the same geographic markets, which we define using the Dartmouth Atlas Hospital Service Areas (HSAs). Within a market, the total number of procedures, regardless of procedure type, is unchanged. We also do not find any change in market-level labor and delivery services or clinician employment.

Not surprisingly, we find that these both less-profitable services and labor supply are "foisted" to non-merging hospitals in the same community. Among non-merging hospitals in a HAS with a merger, both Medicare and Medicaid patient volume increase by nearly 10%. We find a similarly-sized increase in the number of births at non-merging hospitals. Across all non-merging hospitals, full-time-equivalent workers increases by approximately 5%. We also find larger increases among non-merging safety-net hospitals.

Collectively, these results suggest that the reduced capacity and service delivery among merging hospitals is offset by increased capacity, hiring, and care delivery among non-merging hospitals in the same communities. Because these shifted patients and services are less

profitable, this dynamic can place financial strain on the non-merging hospitals. We correspondingly find an approximately two percentage-point reduction in hospital operating margins. These reductions in margins likely contribute to growing hospital exit and closure.

Overall, our results contribute to a growing literature on hospital mergers. While much of this literature has focused on the effects of hospital mergers on prices (e.g., among many others, (Dafny 2009; Gowrisankaran, Nevo, and Town 2015; Cooper et al. 2018; Dafny, Ho, and Lee 2019; Brot-Goldberg et al. 2024)) or quality of care ((Beaulieu et al. 2020), the impacts on firm performance or market access are less clear. Related studies examine changes in hospital financial performance input cost structure following mergers (Schmitt 2017; Craig, Grennan, and Swanson 2018). The study most closely related to ours uses all-payer discharge data from New York and finds hospital mergers lead to reductions in Medicaid admissions, particularly among labor and delivery services (Desai et al. 2023). Other studies find minimal impact among Medicaid patients (Oh 2024).

However, these studies do not examine the impacts of mergers on hospitals that are not participants of consolidation. A notable finding in our paper is that through shifting the balance of payer-mix and patient inputs, hospital mergers can have meaningful operational and non-financial effects on non-merging hospitals. In contrast to the well-documented increases in price, these spillover impacts on the cost-structures of competing firms have not been studied. Our results suggest hospital mergers impact market competition in ways that extend beyond the boundaries of merging hospitals. These impacts should be considered by regulators and policymakers when evaluating the impacts of firm consolidation, particularly for hospital care.

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