

# HOSPITAL CONSOLIDATION AND MONOPSONY POWER IN THE LABOR MARKET FOR NURSES



BY CHRISTINA DEPASQUALE<sup>1</sup>



<sup>1</sup> Department of Economics, Emory University; Carey Business School, Johns Hopkins University.

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## I. INTRODUCTION

Over the past 75 years, the United States has faced a persistent shortage in the market for nurses. For example, in 2007, the American Hospital Association reported a vacancy rate of 8.1 percent, or a shortage of 116,000 nurses.<sup>2</sup> Such shortages would be unexpected in the setting of a competitive market, where the forces of supply and demand should work to eliminate them. Their persistence suggests that pervasive market frictions prevent this labor market from clearing. This article explores a leading explanation for their persistence: the particular role that monopsony power plays in the apparent failure of the market to reach equilibrium.

Monopsony power arises when there are few competitors on the demand side of a market.<sup>3</sup> With little to no competition, a monopsonist has the ability to take advantage of, or exploit, the seller. In any labor market where the employees face a disproportionate share of frictions to job mobility, employers will have monopsony power. These frictions usually arise in the form of geographic mobility constraints and/or search costs associated with finding a new job. The labor market for nurses may be particularly susceptible to such frictions because hospitals employ a majority of nurses and evidence suggests that nurses are less mobile than the average worker (Kovner, Corcoran, & Brewer, 2011; Rosenberg et al., 2011).<sup>4</sup>

Even if hospitals are not pure monopsonists — that is, they face some level of competition in the labor market — they are likely not operating in perfectly competitive markets. The lack of competition typically stems from the relative immobility of nurses and hospitals' ability to exhibit a degree of differentiation in caseload mix and nursing tasks as compared to other nursing jobs. No matter the reason for the lack of competition, an imperfectly competitive market gives the hospital monopsony power and allows it to pay wages below the worker's value. Thus, while a hospital would be willing to hire additional nurses at its current offered wage, it is not willing to raise that wage since it would have to increase wages for all currently-employed nurses. When this cost outweighs the benefits of the additional nurses, a shortage arises. In a standard model, the hospital consistently reports vacancies and an observed chronic shortage results.

The idea that hospital monopsony power contributes to the persistent and widespread shortage of nurses has been well studied over the past 50 years (Hurd (1973), Yett (1975), Hirsch & Schumacher (2005), and

<sup>2</sup> American Association of Colleges of Nursing: <https://www.aacnnursing.org/News-Information/Nursing-Shortage-Resources/About>.

<sup>3</sup> For a textbook discussion on monopsony see: Roger D. Blair & Jeffrey L. Harrison, *Monopsony in Law and Economics* (2010).

<sup>4</sup> Kovner, Christine T., Sean P. Corcoran, & Carol S. Brewer. 2011. The Relative Geographic Immobility of New Registered Nurses Calls for New Strategies to Augment That Workforce? *Health Affairs* 30: 2293-2300. Rosenberg, Marie-Claire, Sean P. Corcoran, Christine Kovner, & Carol Brewer. 2011. Commuting to Work: RN Travel Time to Employment in Rural and Urban Areas. *Policy, Politics, & Nursing Practice* 20: 1-9.

Staiger et al. (2010)).<sup>5</sup> A new problem, however, may be exacerbating the shortage of nurses: hospital consolidation. A well-documented “merger wave” began in the hospital sector during the 1990s and continues today, further decreasing competition among hospitals. As hospitals consolidate into one hospital, system, and/or network, the number of competitors on the demand side of the labor market decreases as well. As a result, hospital consolidations can serve to increase employer bargaining power in the labor market and allow hospitals to squeeze worker wages. These effects have received dramatically less attention in the literature than the price effects of hospital mergers in the healthcare market. This article endeavors to fill the gap by using theory and initial evidence to describe the monopsonistic effects of hospital consolidation. Ultimately, antitrust authorities and policymakers should be concerned about the labor market effects of consolidation.

## II. BACKGROUND ON NURSE EMPLOYMENT AND HOSPITAL CONSOLIDATIONS

Hospitals are the primary setting for nursing jobs, employing 55.7 percent of the nursing workforce.<sup>6</sup> The fact that so many nurses are employed by hospitals exposes them to the possibility of monopsonistic exploitation. These concerns are heightened when hospitals consolidate. In justifying their consolidations, hospitals generally point to better efficiency and lower overhead — savings that could be passed on to the consumer.<sup>7</sup> This focus ignores the potential impact on labor markets.

In addition to being the primary employer of nurses, hospitals are major players in labor markets overall. In 2011, hospitals were the second largest source of private sector jobs behind restaurants, employing over 5.4 million people.<sup>8</sup> Moreover, because hospitals employ various kinds of specialized labor, they could wield monopsony power in multiple labor markets. While their monopsony power may be very general, existing research suggests that nurses are particularly susceptible to exploitation.<sup>9</sup> Due to socioeconomic factors, nurses are likely to be less mobile than the average worker, limiting their ability to find multiple buyers for their labor. Additionally, even though non-hospital employers also hire nurses, hospitals offer different caseloads and task mixes, leading to a distinction between the two types of jobs. Thus, hospital mergers could have significant effects on labor markets, especially the market for nurses.

## III. DIFFERENT TYPES OF HOSPITAL CONSOLIDATION

In the economics literature, hospital consolidations are largely treated as homogenous, despite there being many types of consolidations, e.g. traditional 1-1 hospital mergers vs. a hospital joining a large system or a network (what we will refer to as “system-joiners”). In other words, there exists a spectrum of consolidations. This section differentiates between these two consolidations as defined by the American Hospital Association (“AHA”).

Hospital mergers, as defined by the AHA, occur when two hospitals combine to operate under a single license. While these hospitals typically continue to keep their existing buildings, they are regarded as one entity post-consolidation. In addition, more than half of hospitals that merge are within 1 mile of each other. These hospitals, therefore, are easily within the same labor market.<sup>10</sup>

5 Hurd, Richard W. 1973. Equilibrium vacancies in a labor market dominated by non-profit firms: The shortage of nurses. *Review of Economics and Statistics* 55: 234-40.

Yett, Donald E. 1975. *An economic analysis of the nurse shortage*. Lexington, MA: Lexington.

Hirsch, Barry T., & Edward J. Schumacher. 2005. Classic or new monopsony? Searching for evidence in nursing labor markets. *Journal of Health Economics* 24: 969-89.

Staiger, Douglas O., Joanne Spetz & Ciaran Phibbs. 2010. Is there monopsony in the labor market? Evidence from a natural experiment. *Journal of Labor Economics*, Vol. 28, No. 2, *Modern Models of Monopsony in Labor Markets: Tests and Estimates*. Papers from a Conference Held in Sundance, Utah, November 2008, Organized by Orley Ashenfelter.

6 2017 National Nursing Workforce Study.

7 For a review of the hospital merger literature, see: Williams, Claudia H., William B. Vogt, & Robert Town. 2006. How has hospital consolidation affected the price and quality of hospital care? *Research Synthesis Report No 9*. Robert Wood Johnson Foundation.

8 American Hospital Association, 2011: <https://www.aha.org/system/files/content/11/110909-employer.pdf>.

9 See (Hurd, 1973; Sullivan, 1989; Staiger, et. Al., 2010) as a sampling of papers that discuss monopsony in the nurse labor market.

Hurd, Richard W. 1973. Equilibrium vacancies in a labor market dominated by non-profit firms: The shortage of nurses. *Review of Economics and Statistics* 55: 234-40.

Sullivan, Daniel. 1989. Monopsony power in the market for nurses. *Journal of Law and Economics* 32: S135-78.

Staiger, Douglas O., David I. Auerbach, & Peter I. Buerhaus. 2012. Registered Nurse Labor Supply and the Recession: Are We in a Bubble? *New England Journal of Medicine* 366: 1463-65.

10 DePasquale, Christina. 2019. *Heterogeneity in Hospitals*, Working Paper.

System-joiners, on the other hand, are hospitals that operate within the same system identification number, e.g. Providence Health & Services. These system-joiners vary widely in terms of location and actual consolidation level. That is, there exists a wide range of integration at the time of the system-joiner. Some system joiners may essentially imitate a merger, e.g. changing ownership, fully integrating administration, closing duplicate departments, while some system-joiners are simply a re-branding. Furthermore, more than half of hospitals that join a system are more than 52 miles away from the closest hospital within the same system.<sup>11</sup>

Although both considered “consolidations,” these differences among mergers and system-joiners make it unlikely that they will yield the same effect on the labor market. Therefore, from a policy perspective, it is important to examine if monopsony effects differ depending upon the type of consolidation. The empirical evidence of monopsony power discussed in the following section differentiates among mergers vs. system-joiners.

## IV. EVIDENCE OF MONOPSONY POWER FOLLOWING HOSPITAL CONSOLIDATIONS

While prices, costs, and quality of care have received considerable attention in the hospital merger literature, labor effects have been largely overlooked. However, early empirical evidence examining monopsony power and hospital consolidation shows that it does, in fact, exist. This evidence is compelling in making the case that hospitals wield monopsony power because the effects are particularly associated with certain types of consolidation. DePasquale (2020) describes the theoretical underpinnings of this thinking, showing that firms that operate in an oligopsony will lower wages and decrease employment as market concentration increases.<sup>12</sup> This paper's empirical results, along with those reported in two related papers, show that monopsonistic effects are most clear when focusing on mergers as compared to system-joinings and on markets that already exhibit a high level of concentration.<sup>13</sup>

Our understanding of the differential effects of consolidation can be especially sharpened by distinguishing the impacts of mergers from “system-joinings.” In the prior hospital consolidation literature, full horizontal mergers are treated the same as “system-joiners,” the labor market impacts show that there are important differences between them. The labor market effects of consolidation are starker when two hospitals merge than when a hospital joins a healthcare system. The effects of merging vs. system-joining differ for almost all outcomes examined, including (but not limited to) labor outcomes for nurses, admissions, departmental services, costs, and severity of admitted patients' conditions. This difference is intuitive, as the impacts of consolidation on the hospital's role in the labor market are markedly different. For example, “system joiners” exhibit huge variability in how close they are to the nearest system hospital, how much they fully integrate with other hospitals, and what departments they condense post-consolidation. These differences do not seem to be driven by distance to existing system hospitals or other hospitals in mergers. In short, the labor market effects of consolidation are most clear for mergers, the type of consolidation that is most likely to lead to an increase in market power.

The labor market effects of consolidation also vary with the pre-consolidation conditions in the nurse labor market. In particular, the negative effects of consolidation on nurse employment and wages are specific to markets with fewer than seven hospitals. These effects only continue to intensify as concentration increases. Again, these are the conditions under which one would expect a marked uptick in hospital market power and is consistent with hallmarks of monopsony power. This evidence is unique in that it is able to exploit changes in market concentration and finds statistically significant evidence of monopsonistic behavior.

It should be noted that, while these results speak to important effects of hospital consolidations, the net welfare effects of mergers and system-joinings are ambiguous and likely heterogeneous. Regulators should clearly consider all effects of consolidation, including price effects, labor market impacts, and how these contribute to patient outcomes. Whether or not changes in labor market power has an impact on patient outcomes is an open question. The existing results show no evidence of consolidation on admissions or number of registered nurses per admission, so it is possible that hospital power in the labor market may not specifically impact the patient.

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<sup>11</sup> DePasquale, Christina. 2019. Heterogeneity in Hospitals, Working Paper.

<sup>12</sup> DePasquale, Christina. 2020. Monopsonistic Exploitation: Theory and Evidence, Working Paper.

<sup>13</sup> The results discussed in this section can be found in: DePasquale, Christina. 2019. Heterogeneity in Hospitals, Working Paper. DePasquale, Christina. 2019. Hospital Consolidation and the Nurse Labor Market, Working Paper. DePasquale, Christina. 2020. Monopsonistic Exploitation: Theory and Evidence, Working Paper.

## V. UNIONIZATION OF NURSES AND COUNTERVAILING POWER

It is important to also consider how unionization of nurses may affect monopsony power. In the simplest theoretical framework, the formation of a union creates a monopolist on the supply side. In the face of a monopsonist on the demand side, this yields a bilateral monopoly. In a bilateral monopoly, the union and employer bargain over wages, not employment levels, and surplus is divided. Ultimately, the competitive and efficient level of employment results. Therefore, it is plausible that a strong union presence should work to protect nurses against monopsony power.<sup>14</sup> Empirically, however, we do not see evidence of this protection. Although approximately 20 percent of nurses are unionized<sup>15</sup> — well above the national average of 10 percent for all workers<sup>16</sup> — employment and wages of nurses decrease as employer competition decreases. While unionization may help at the margin, it is not enough to eliminate monopsonistic exploitation.

## VI. POLICY IMPLICATIONS AND CONCLUSION

The evidence described in this article has important implications for ideal regulation and policy. A continuing shortage of nurses puts the country at risk for understaffed hospitals, possibly to the detriment of patient care. If shortages are driven by hospitals' monopsony power, the policy approach is straightforward: make the labor market for nurses more competitive. One of the most concrete ways to implement this approach involves the antitrust response to hospital mergers.

In reviewing mergers, antitrust agencies are generally focused on healthcare prices, which directly affect consumers. The analysis described herein indicates that it is also important to consider effects on labor markets. Labor market impacts affect workers directly and, potentially, consumers indirectly. The state of the nurse labor market suggests that the existing attention paid to these impacts is insufficient to prevent hospitals from gaining labor market power. The legal basis for preventing mergers that enhance market power can be found in Section 7 of the Clayton Act, which has been in force throughout almost the entire history of modern nurse shortages. More recent years have seen steps toward specific emphasis on regulating monopsonies. In particular, this can be seen in the 2010 Horizontal Merger Guidelines, which, for the first time, addressed the importance of limiting monopsony power.<sup>17</sup> However, little focus is given to the role of monopsony in labor, as opposed to product, markets. As indicated by the results and theory described in this article, there is considerable scope for labor monopsonists to negatively affect welfare.

Existing frameworks for antitrust regulation can be easily adapted to approach the issue of monopsony in nurse labor markets. Antitrust authorities and the merger guidelines use the Herfindahl-Hirschman Index (“HHI”) to classify industries into three categories — unconcentrated, moderately concentrated, and highly concentrated. In its simplest form, where a market is made up of N firms of the same size, the index is calculated as  $1/N$ . An HHI between 0.15 and 0.25 is moderately concentrated and an HHI over 0.25 is highly concentrated. The empirical results discussed in this article are consistent with the guidelines classifications: monopsonistic effects appear when the labor market decreases below 7 hospitals, at which point HHI rises above 0.16 and is moderately concentrated. Therefore, it may be important to especially scrutinize the labor effects of mergers in markets with fewer than 7 firms.

The American Nurses Association reports that, by 2022, more than 100,000 nursing jobs will be available.<sup>18</sup> Whether these jobs will be filled, remains to be seen. The average age of registered nurses continues to increase, and more than 500,000 registered nurses are expected to retire. The Bureau of Labor Statistics estimates that, in order to avoid a shortage, there will need to be 1.1 million new registered nurses for “expansion and replacement of retirees.”<sup>19</sup> As this paper explains, however, a supply of nurses is not enough — wages need to also be high enough to encourage nurses to accept positions. Ensuring a positive outcome may require additional action on the part of regulators.

14 For a longer treatment of the effects of unionization in the market for nurses, see: Blair, Roger D. & Christina DePasquale. 2010. Monopsony and Countervailing Power in the Market for Nurses. *Antitrust Healthcare Chronicle* 24(2), 2-7.

15 Paton, Frieda, “Nurse Unions Pros and Cons: Should You Join?” November 25, 2019, <https://nurseslabs.com/nurse-unions-pros-cons/>.

16 Bureau of Labor Statistics Economic News Report, January 22, 2020, <https://www.bls.gov/news.release/union2.nr0.htm>.

17 2010 Horizontal Merger Guidelines, Department of Justice and the Federal Trade Commission.

18 American Nurses Association: <https://www.nursingworld.org/practice-policy/workforce/>.

19 American Nurses Association: <https://www.nursingworld.org/practice-policy/workforce/>.

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