ECON 170: Healthcare Economics
December 1, 2019

A Cost-Benefit Analysis of Private Hospital Consolidation Since 1990

Consuming one out of every six dollars earned in the United States, national healthcare expenditures (NHE) are rapidly growing as a portion of the GDP and are putting increasing financial strain on the U.S. economy and households (Figure 1).[1] Every year, Americans collectively spend $3.5 trillion, or about $10,339 per capita, on their healthcare, with national spending exceeding the next ten largest countries combined.[2] Despite the disproportionally high healthcare spending relative to other OECD countries, the United States is equal or worse-off in most outcome metrics.[3] In efforts to control these costs, contemporary political discourse has centered around 'big pharma,' which comprises 11.6% of NHE, and insurance companies, which exert a net cost on the economy of 1.2% of GDP (2016).[i, 4] However, a principal component of increasing healthcare costs is private hospitals—a market which has seen considerable consolidation since 1990 and is a key facet of understanding healthcare spending. The rise of integrated health systems,[ii] which span multiple hospitals and practices, has been both celebrated as a major accomplishment of the modern health system and decried as monopolistic enterprises exploiting their communities. Such conflicting views on the benefits and costs of conglomerate systems has left policy makers at a crossroads in regard to market consolidation. Overall, despite the benefits and economies of scale attributed to large health systems, the unchecked consolidation of local hospitals into health systems since 1990 has led to uncompetitive markets, lower quality care, and oligopolistic pricing, which has exerted an unsustainable economic rent on the U.S. healthcare market.

Approximately twice the size of the U.S. automobile manufacturing industry, hospital expenditures are the largest component of NHE and totaled $1.2 trillion in 2018, representing 5.8% of the U.S. GDP.[5] Hospitals have historically claimed over 38% of all personal healthcare expenditures and on average collect 15% of the median household income.[6] Despite the immense size of the hospital care

[i] Insurance's economic net cost is calculated as the current year's premiums paid less the current year's medical benefits paid
[ii] 'Health systems' or 'systems' in this paper refer to local multi-hospital systems and two or more hospitals in the same local market with common ownership. National health systems operating in different geographic markets are not considered.

market, it has undergone a dramatic shift since 1990 due to changing patterns in mergers and acquisitions. Once a market predominately populated by independent religiously affiliated hospitals, the market has shifted into a field dominated by secular, multi-facility integrated health care systems often characterized by a local monopoly. The major systems consist of a central hospital associated with a research university surrounded by spokes of community acute hospitals and other physician facilities. Today, the average regional market has between three and five health systems, with the typical system having 3.2 separate facilities.[7] Among systems, there is a significant variation in size: The largest, Universal Health Services, has 173 member hospitals, while 40% of U.S. hospitals remain independent.[8] Since 2003, although, 7% of the nation's hospitals joined an integrated health system, which is the result of a flurry of M&A activity.[9]

Hospital merger activity prior to 1990 was largely characterized by a low volume of acquisitions in different geographic areas to achieve administrative cost synergies.[10] However, mounting fiscal pressure from the advent of managed care and health maintenance organizations (HMOs), increased shifts towards outpatient care, and the change to Medicare Prospective Payment Systems in 1984 altered hospital's behavior, as observed by Dranove et al. (2002). He noted that hospitals directly responded to the altered market conditions by consolidating with local competitors to form horizontal monopolies.[11] The adjustment was instant: By 1995, hospital M&A was 900% of its 1990 level.[12] According to the American Hospital Association, there were 1,412 hospital mergers from 1998 to 2015. From 2010 to 2015 alone, there were 561 such deals, or approximately one every three days (Figure 2). Moreover, half of these mergers were between hospitals in the same region, which is significant because hospital competition is confined to local markets.[13] The era of independent, community hospitals subsided to a marketplace dominated by large, multi-facility systems with expanded capabilities and pricing power.

Accompanying this wave of horizontal mergers is a documented increase in hospital's pricing power in the healthcare market. From 1990 to 2000, the Herfindahl-Hirschmann Index (HHI)—a common measure of market concentration[iii]—has increased from a mean of 3,665 to 4,391, indicating that the

[iii] The Herfindahl-Hirschmann Index ranges from 0 (perfectly competitive markets) to 10,000 (a perfect monopoly). The value is the sum of the squared market share multiplied by 10,000

average hospital market concentration increased by 20% over a ten year span (Figure 3).[14] According to the Federal Trade Commission and Department of Justice, any market with an HHI over 2,500 is "very concentrated," and any increase in HHI in excess of 100 is anticompetitive and, by statute, illegal.[15] To put the shift in the hospital market in perspective, the change in the ten years following the beginning of the merger wave exceeds this legal threshold by 726%. As a result, nine out of ten metropolitan statistical areas are "highly concentrated" according to the FTC. [iv, 16] Unsurprisingly, according to a 2018 report by the AMA's Council on Medical Service, "Hospital markets are concentrated largely due to consolidation," most notably the anticompetitive tendency to acquire regional competition.[17] In short, the high concentration in the hospital market over the past 30 years is largely due to the consolidation of local competitors.[v]

The wave of hospital consolidation into regional monopolies and subsequent spike in the average hospital's market power enables these organizations, both non-profit and for-profit alike, to extract economic rents from a community via oligopolistic pricing. Economic theory dictates that while demand for healthcare is inelastic, the demand for a particular facility's services is relatively elastic where there are multiple firms in a competitive market. Local consolidation reduces the number of firms, giving the remaining providers more pricing power. The consequent shift in the balance of power between private payers and providers hinders insurers' negotiating abilities to secure advantageous prices. In the current system, providers and insurers negotiate hospital prices and the extent that a hospital is included in the insurer's managed care network. Outside of the insurer's HMO agreements, however, a patient has no coverage for non-emergency care. When there are two or more substitutable providers in a competitive market, the hospital's bargaining power is minimized. That is, the insurance company has optionality in the market to substitute away from a provider if its costs are inflated. However, if the two providers merge, the insurance company has no choice but to accept the combined system's prices. In the words of

[iv] A metropolitan statistical area (MSA) is defined as a city and its surrounding region with similar social and economic characteristics.
[v] In addition to local horizontal mergers, hospitals are undergoing vertical acquisitions, further bolstering their market power. From 2004 to 2011, hospital-owned physician practices doubled from 24% to 49% of practices. However, this trend and its ramifications are beyond the scope of this paper.

Patrick Conway, the chief executive of Blue Cross and Blue Shield of North Carolina, "If you're the single hospital system in an area, you essentially can set your price, because you're a monopoly. We literally have to have them in network."[18] The higher costs charged to insurance companies and self-insured employers is then passed onto consumers in the form of higher premiums, lower benefits, and slower wage growth. The evaporation of competition among hospitals is therefore likely a significant motivator for the ballooning national health expenditures.

The empirical data confirms that hospitals operating in more consolidated markets generally extract higher prices from their community, but there are mixed findings on the degree of increase. The results are summarized in Appendix A (Figure 4). On an aggregate, estimates for post-merger price increases in concentrated markets range between 20% and 30%, with escalations of 50% being observed.[19] The most recent available analysis estimates a 40% price increase following a hospital merger; however, estimates as low as 5% have been noted. [20] Consolidation amongst hospitals geographically close have more profound effects, with price increases of 40% or more.[21] Within these rises, specific items can see individual markups: Cutlet et al. (2013) determined that five of the most common procedures cost 44% more in markets with above-average market concentration.[22] For example, a coronary angioplasty cost on average $32,411 in a concentrated market and $21,646 in a competitive market (Figure 5). For preexisting monopolies, average hospital prices are 15% higher than in markets with four or more competitors.[23] However, the increase in prices can vary by the characteristics of the hospital: A 1995 study of regional HHIs estimates that a merger of two hospitals would increase net prices by 8.7% for for-profit, 4.1% for non-profit, and 2.5% for government hospitals.[24] In short, although the price increase statistic varies widely between studies, there is a definitive positive correlation between hospital market concentration and the price of administered care.

In addition to increased costs, hospital market consolidation has been shown to reduce the quality of care. Eight of the most recent ten studies examining the direct impact of market consolidation on quality found an inverse relationship. The studies found that there is a negative correlation between

market consolidation and angioplasty mortality, heart failure mortality, unsuccessful kidney transplants, and general risk-adjusted mortality rates.[25] The most striking of the studies, Kessler et al. (2000) found that patients in highly concentrated markets had a risk-adjusted mortality probability that is 1.46% higher when compared to competitive markets ($p < 0.05$).[26] While some studies find that there is no correlation, the general consensus of existing literature points towards decreasing quality of care metrics. Economic theory supports these findings and dictates that as demand for a hospital's services becomes more elastic due to increased competition, the firms must compete on either price or quality to attract customers. In the case for Medicaid and Medicare, where there is minimal price competition between firms in the same market due to the fixed reimbursement rates, hospitals mainly compete on a basis of quality of healthcare. Therefore, as hospitals consolidate as they have over the past three decades, not only will prices within local markets increase, but, *ceteris paribus*, the quality of care will simultaneously stagnate or decrease.

Despite the economic rent and reduced quality of care resulting from hospital mergers, consolidated care systems have demonstrable benefits. A survey of hospital executives reveals that the most common rationales for an acquisition is to strengthen the organization's financial position, achieve operational efficiencies, and consolidate duplicate services.[27] Health systems experience economies of scale to reduce administrative costs, excessive capacity, regulatory burdens, and wasteful duplication, which represent savings that can theoretically then be passed onto patients. Additionally, larger health organizations are better suited for spreading out high-cost investments over a greater population and accepting risk-based payment. The management of a large population under a single operator can also improve coordination and integration of care, which has historically been a shortfall of the U.S. system.[28]

Despite these claims by hospital executives, recent empirical analysis of cost reductions and economies of scale from consolidation do not substantiate these arguments, although the results are mixed and divided along sponsorship lines.[vi] The majority of studies find that a hospital's prices increase after a merger, and that there is no significant cost savings even after four years of combined operations.[29]

[vi] Patterns in the available literature show that industry-sponsored studies predominately found cost savings, while independent studies found minimal efficiencies.

Harrison et al. (2010) found that although theoretical cost savings are undeniable, ex-ante efficiency potential rarely materialized into post-merger savings due to a lack of realized integration and consolidation.[30] The study notes that the observed merged hospitals continued operations without administrative or facility cost reductions and that the clearer motivator for consolidation was to increase market power. Weil et al. (2010) supported this conclusion but asserts that the failure to generate cost synergies is a result of management failing to consider differences in culture, values, and goals.[31] On the contrary, there is some evidence that certain consolidations decrease cost for hospitals. Most notably, mergers of two independent hospitals have been observed to generate cost synergies over a two-year horizon.[32] For example, the combined entity can operate under a single license, bypass state regulations pertaining to shifting inpatients across facilities, and can eliminate administrative redundancies. Although costs may be reduced for hospitals, researchers at Drexel University found that even when hospitals experience costs efficiencies, prices still rose a minimum of 2% for consumers.[33] It is evident that cost efficiencies likely exist that are difficult to quantify and may increase the social surplus for hospitals, but these benefits are not felt in the communities that these institutions are meant to serve.

A prominent case study of horizontal hospital consolidation adversely impacting a regional market can be found in New Haven, Connecticut. Up until 1995, all hospitals in Connecticut were independently operated, but the market has come to be dominated by two large health systems that control the flow of 80% of inpatients (Figure 6).[34] State policies such as Medicare and Medicaid shared saving programs, changes in reimbursement policy, and mandated technological improvements in tandem with the national phenomenon of M&A has driven these consolidations, which have led to high healthcare inflation without a markable increase in quality. In the New Haven area, the Yale New Haven Health System (YNHH) acquired the only other competing hospital and has expanded aggressively down the Connecticut coastline into inner cities and wealthy Fairfield County towns alike. The YNHH consists of Bridgeport Hospital (acquired in 1995), Greenwich Hospital (1998), Northeast Medical Group (2010), Lawrence and Westerly hospitals (2015), and Yale New Haven Hospital, founded in 1826.[35] YNHH is

the second largest employer in the state, with 25,199 employees, has a local service area encompassing half of Connecticut's population, and it controls 76% of the inpatient market share of Greater New Haven region (Figure 7).[36] The monopolistic pricing power of the system enables it to extract higher prices from the community above what would exist in competitive markets. With an HHI of just below 8,500 out of a possible 10,000, the price of a hospital admission in the New Haven region was 300% higher in 2012 than other comparable parts of the state (Figure 8).[37] Then, in the two years from 2012 to 2014, prices increased by 25%, 3.5 times higher than the 7% increase observed throughout the rest of the state.[38] Hospital expenditures in the state have increased as well, from $3.9 billion in 1991 to $9.3 billion in 2009. YNHH is the archetype of consolidated hospital networks: an academic-affiliated research hospital amassed all local competition into an integrated health system, which has accompanied a substantial increase in market power and hospital prices. As Connecticut's and the nation's provider care gets taken over by conglomerate hospital systems, insurers, businesses, and patients will be expected to carry the increased financial burden of an anticompetitive healthcare market.[vii]

The unprecedented concentration and associated net costs of health systems mergers has driven discussions on policy remedies to disincentivize private provider consolidation. The most common is antitrust legislation to block high-profile mergers. The Sherman Antitrust Act of 1890 prohibits activity that "may be substantially to lessen competition, or to tend to create a monopoly," meaning that mergers, by law, are considered illegal if suspected to result in elevated market power and prices.[39] Despite the abundant wealth of literature that connects hospital M&A and quantifiable price hikes, the DOJ and FTC have only pursued eleven antitrust suits out of 1,412 deals to block acquisitions since the initial merger wave in the 1990s.[40] It is difficult to know the correct balance of antitrust activity, but increased enforcement is required to safeguard the remaining competition in private provider markets and the negotiating power of insurance companies. Since healthcare is a market-based economy, promoting

[vii] Since 2013, the Connecticut legislature passed two consumer protection laws to control the impact of hospital monopolies and maintain a fair market. This legislation will limit further hospital consolidation in the state.

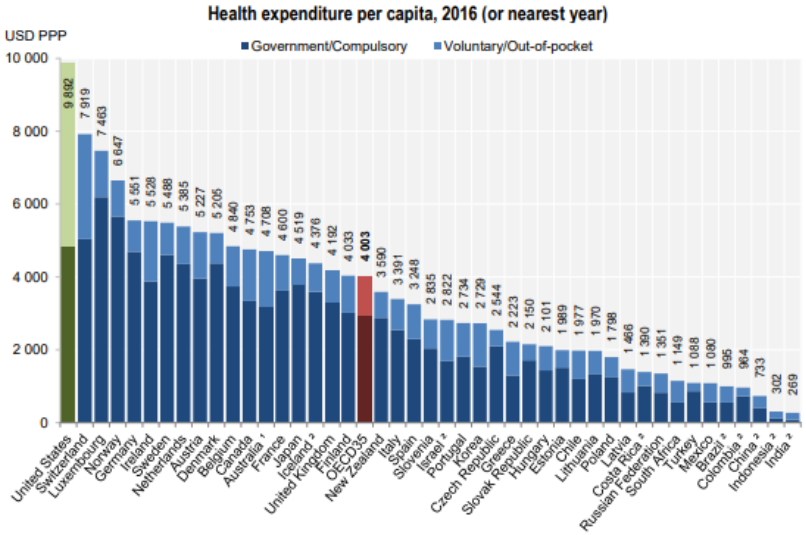
competition and reversing the tide of consolidation has the potential to slow the price increases and create a more efficient market. Other policy recommendations range in their level of proposed intervention. Cutler et al. (2013) suggest incentivizing voluntary divestment by capping private reimbursement at the Medicare Advantage rates in highly concentrated markets and allowing market-pricing to continue where hospitals are competitive.[41] Other plans point to deregulation, such as eliminating state "certificate of need" requirements, banning gag and anti-steering clauses, and prohibiting secret contracts between hospitals and insurers. Some claim that moving to a single-payer system could also remedy the rising costs. Despite their intentions, each policy recommendation is not without their own risks and unintended consequences. However, one thing is for certain: Policymakers need to address the lack of competition among hospitals so that future reform at any level is not built upon a dysfunctional market.

Overall, healthcare costs in the United States is the highest in the world, and measurable steps to reduce hospital expenses—the largest portion of personal healthcare expenditures—can tangibly bend the healthcare cost curve such that spending growth is held at a sustainable level over GDP growth.[viii] Amidst the debate on reform, former President Barack Obama asserted, "By a wide margin, the biggest threat to our nation's balance sheet is the skyrocketing cost of health care. It's not even close."[42] In our country today, there is bankruptcy due to health care costs every 30 seconds while hospital inpatient care costs grew by 42% from 2007 to 2014.[43] Since hospital costs are the largest proportion and fastest growing segment of personal healthcare expenditures, it is imperative to understand the relationship between price and the trend of hospital consolidation. Although apologists claim cost efficiencies, hospital mergers generate lower competition, higher prices, and lower quality of care. To preserve competition, a central tenet of a market-based economy, U.S. policy needs to undergo a dramatic shift in evaluating hospital consolidation to limit growth in healthcare costs, protect consumers, and put national expenditures on a path towards sustainability.

[viii] Sustainable national health care spending is believed to be one percentage point over GDP growth. Bending the cost curve refers to keeping NHE growth at a low level to not crowd out other sectors of the economy in absolute terms.

Appendix A: Facts and Figures

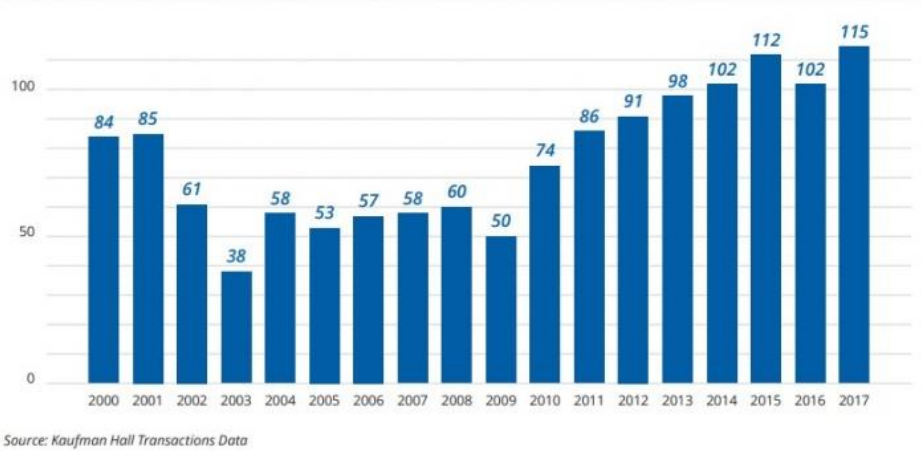
Figure 1: National Healthcare Expenditures per Capita (2016):



The per capita national healthcare expenditures in the United States (green) is the highest in the world and over double the spending of the OECD's average (red), even when adjusting for the cost of living and income.

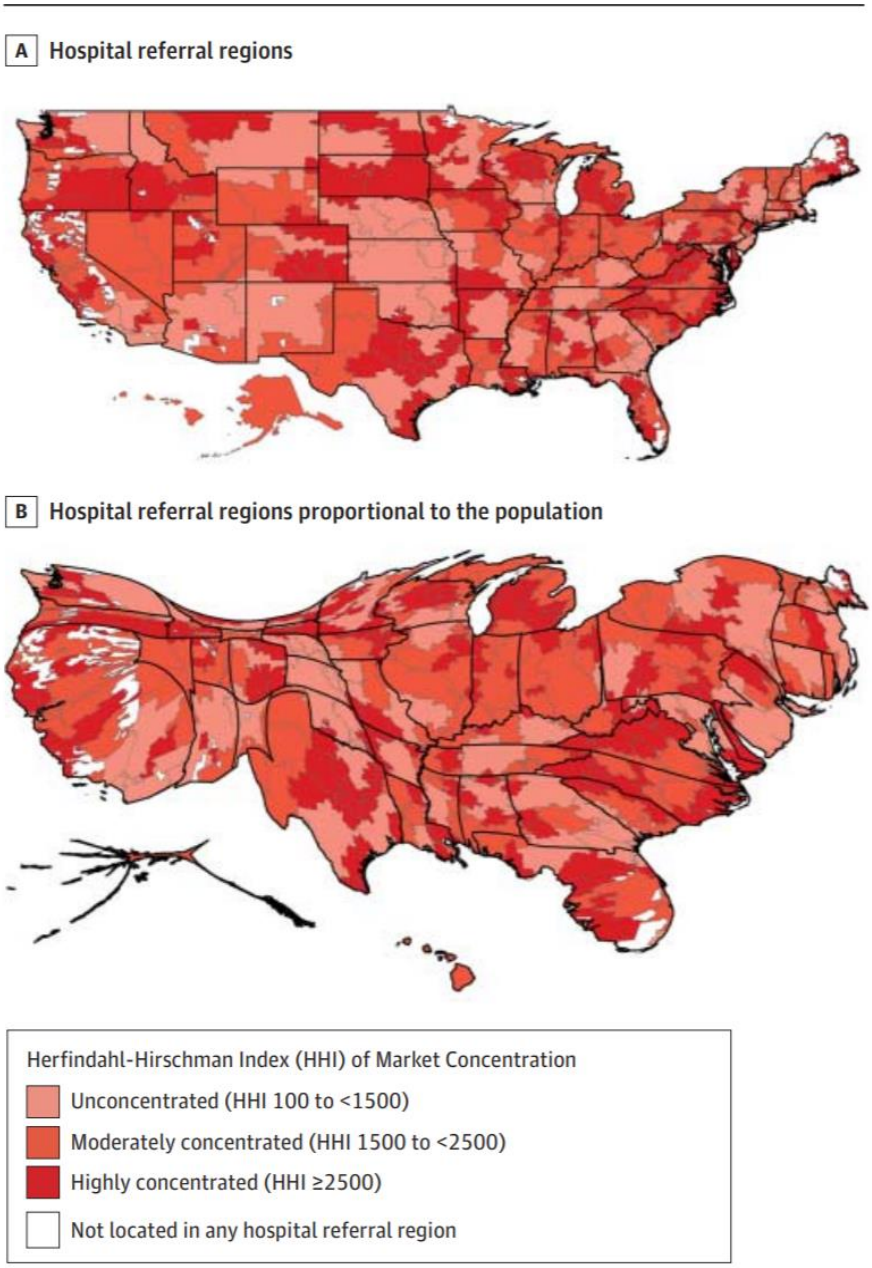
Source: OECD.org

Figure 2: Hospital Merger and Acquisitions Deal Activity from 2000 to 2017:



The wave in healthcare M&A deal activity has exploded since 1990 and maintained a high deal flow. Changes in policies in tandem with a lack of antitrust enforcement has incentivized hospitals to merge with local competitors. Most recently, regulatory changes from the Affordable Care Act has further incentivized consolidation, which is driving a second boom in mergers from 2010-2017. 2017 boasted the highest number of deals, with 115 mergers.

Figure 3: Hospital Market Concentration in the United States by Hospital Referral Region:

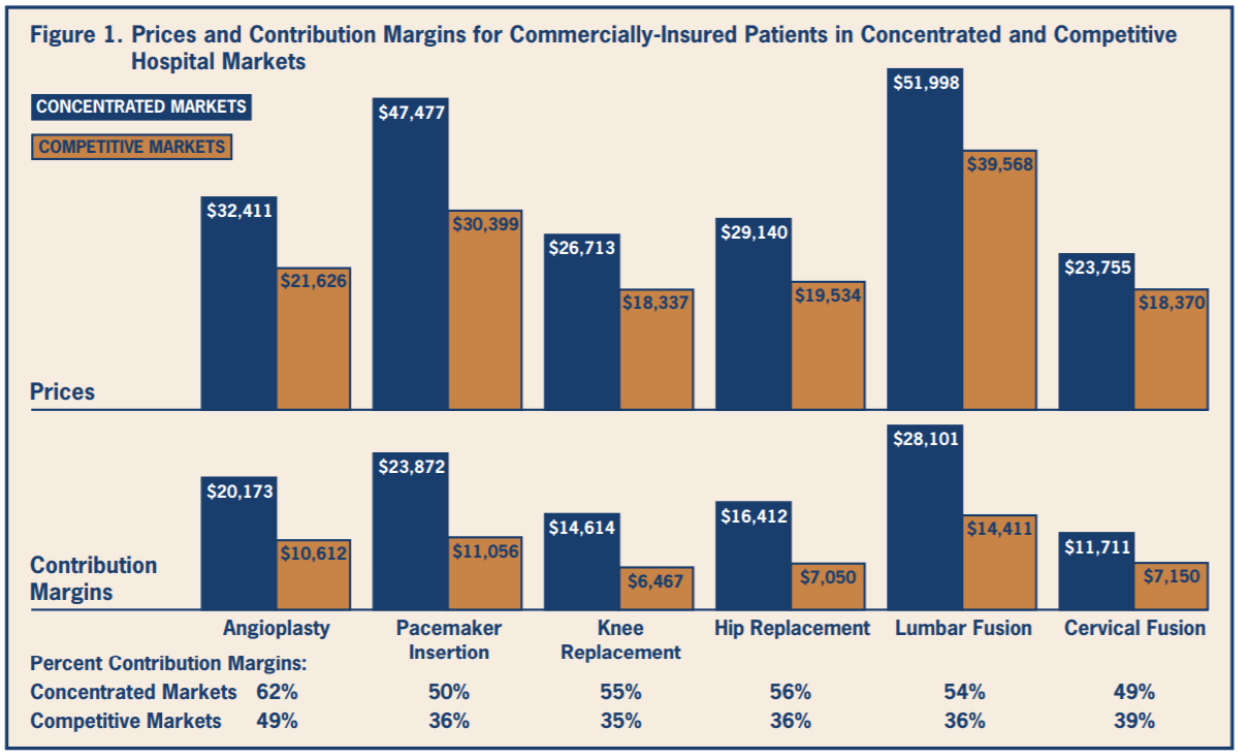


The hospital market in the United States is highly concentrated according to the HHI measure of market concentration. The majority of the population lives in a hospital referral region that, according to the FTC, is "highly concentrated" or "moderately concentrated." There is no hospital referral region in the country deemed "highly competitive." This observed concentration is hypothesized to have been caused by the wave of local M&A deals that swept the hospital market since 1990.

Figure 4: Summary of Academic Papers Relating Market Concentration to Price:

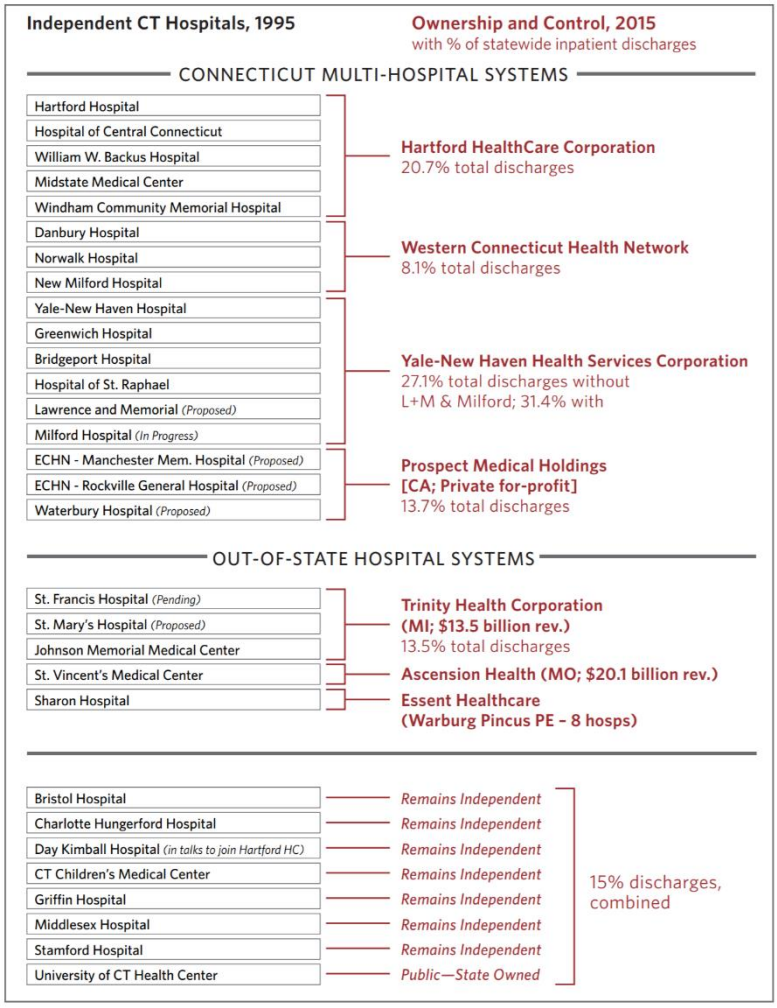
Name	Year	Concentration-Price Relationship	Conclusions
Dafny et al.	2009	Positive	Hospitals with past mergers has 40% higher prices
Haas-Wilson et al.	2011	Positive	Post-merger hospitals had higher prices than controls
Tenn et al.	2011	Positive	Post-merger hospitals had higher prices than controls
Thompson et al.	2011	Positive	Post-merger hospitals had higher prices for insurance companies
Town et al.	2006	Positive	Mergers increase market power and prices
Akosa Antwi et al.	2009	Positive	Hospitals with monopolies have higher prices
Dranove et al.	2008	Positive/mixed	Positive correlation in the 1990s but minimal correlation by 2000s
Melnick et al.	2007	Positive	Hospitals in concentrated markets increase prices at a quicker rate
Wu et al.	2008	Positive	When a competing hospital closes, the surviving hospital increases its prices
Capps et al.	2002	Positive	Antitrust legislation is an appropriate approach for increasing prices
Cooper et al.	2019	Positive	Hospitals in concentrated markets increased their prices faster
Cutler et al.	2013	Positive/mixed	Healthcare consolidation is increasing, but it has both benefits and costs
Gaynor et al.	2003	Positive	Greater competition is the key to lowering hospital costs
Frakt et al.	2015	N/a	Increased competition leads to lower risk-adjusted hospital mortality rates
Gowrisankaran et al.	2003	Positive	Hospitals that are part of a system raised their prices faster, on average
Melnick et al.	2007	Positive	The principle driver of hospital cost increases has been consolidation

Figure 5: Prices of Common Procedures in Concentrated and Competitive Hospital Markets:



When examining the increased costs of a health system post-merger, not all procedures increase in price at the same rate. All five of the procedures examined—coronary angioplasty, pacemaker insertion, knee replacement, hip replacement, lumbar fusion, and cervical fusion—increased in price, with the angioplasty increasing the most by 49.8%. An even more profound finding was that the contribution margins drastically increased, which indicates that the hospitals use their market power to increase prices and margins.

Figure 6: Hospital Consolidation and Market Share in Connecticut from 1995-2015:

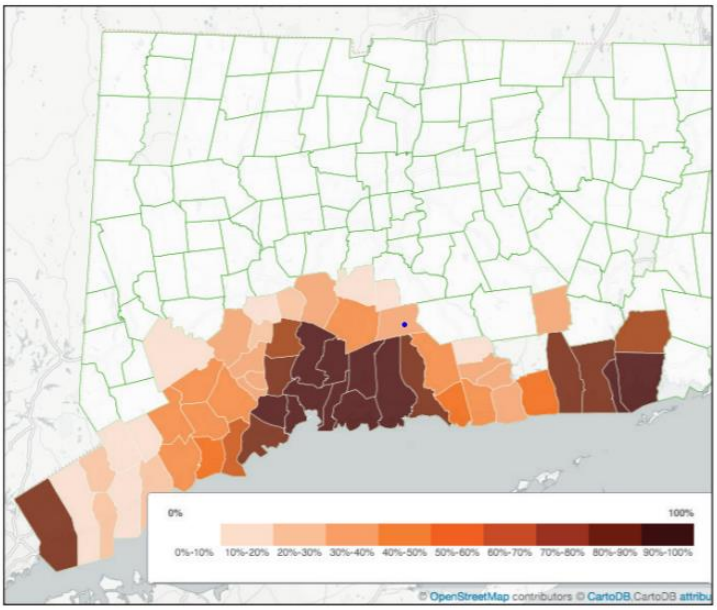


The adjacent chart tracks the merger and acquisition activity of hospitals from 1995 to 2015. Prior to 1995, all hospitals were independently owned and operated. By 2015, 17 hospitals had consolidated into 5 health systems controlling 73.1% of all in-state hospital discharges. Out of the original 30 hospitals, as of 2015, only 8 remained independent.

The largest of the CT health systems is Yale New Haven Health, controlling 31.4% of all discharges with 6 member hospitals.

Overall, the Connecticut hospital market has become extraordinarily concentrated and has a limited number of independent hospital care providers operating in the state.

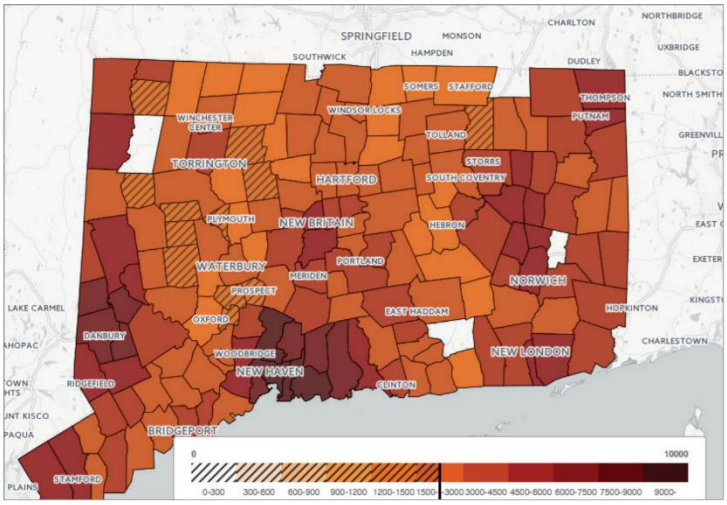
Figure 7: The Market Share of the Yale New Haven Health System in Connecticut (2015, by town):



The Yale New Haven Health system wields significant market power in coastal Connecticut. The system enjoys a near perfect monopoly in New Haven and the greater tristate area and extends its reach across the entirety of the southern border.

It is likely that this excessive market power is a driving factor in the system's above-average hospital costs and hospital cost growth rate.

Figure 8: The Hospital Market Concentration (HHI) in Connecticut by town:



The above map is a measure of the HHI market concentration throughout the state of Connecticut by town. The areas with the highest concentration are in New Haven and the Greater New Haven area, shaded dark red above. This chart illustrates that YNHH enjoys a near perfect monopoly in much of the state. In the geographic regions it operates, the system has an average HHI index in excess of 6,000 out of a maximum of 10,000. Such concentration is a contributing factor why Connecticut residents experience the fourth highest healthcare costs in the nation, paying on average 27% more than the typical American.

Endnotes

1) "Health at a Glance 2017: OECD Indicators." OECD instance. OECD. Accessed December 1, 2019. https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017_health_glance-2017-en.

2) Gaynor, Martin. "Examining the Impact of Health Care Consolidation." *Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee*, February 14, 2018. https://docs.house.gov/meetings/IF/IF02/20180214/106855/HHRG-115-IF02-Wstate-GaynorM-20180214.pdf.

3) "Health at a Glance 2017: OECD Indicators." OECD instance. OECD. Accessed December 1, 2019. https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017_health_glance-2017-en.

4) Mathews, Anna Wilde. "Behind Your Rising Health-Care Bills: Secret Hospital Deals That Squelch Competition." The Wall Street Journal. Dow Jones & Company, September 18, 2018. https://www.wsj.com/articles/behind-your-rising-health-care-bills-secret-hospital-deals-that-squelch-competition-1537281963?mod=article_inline.

5) Gaynor, Martin. "Examining the Impact of Health Care Consolidation." *Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee*, February 14, 2018. https://docs.house.gov/meetings/IF/IF02/20180214/106855/HHRG-115-IF02-Wstate-GaynorM-20180214.pdf.

6) Dauda, Seidu. "Hospital and Health Insurance Markets Concentration and Inpatient Hospital Transaction Prices in the U.S. Health Care Market." *Health Services Research* 53, no. 2 (November 2017): 1203–26. https://doi.org/10.1111/1475-6773.12706.

7) Roy, Avik. "Improving Hospital Competition: A Key to Affordable Health Care." Medium. FREOPP.org, October 18, 2019. https://freopp.org/improving-hospital-competition-a-key-to-affordable-medicine-343e9b5c70f.

8) Gaynor, Martin. “Examining the Impact of Health Care Consolidation.” *Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee*, February 14, 2018. https://docs.house.gov/meetings/IF/IF02/20180214/106855/HHRG-115-IF02-Wstate-GaynorM-20180214.pdf.

9) Ibid.

10) Cutler, David M., and Fiona Scott Morton. “Hospitals, Market Share, and Consolidation.” *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675.

11) Capps, Cory S., David Dranove, Shane Greenstein, and Mark Satterthwaite. “Antitrust Policy and Hospital Mergers: Recommendations for a New Approach.” *The Antitrust Bulletin* 47, no. 4 (2002): 677–714. https://doi.org/10.1177/0003603x0204700407.

12) Vogt, William, and Robert Town. “How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?” *Robert Wood Johnson Foundation*, February 2006. https://folio.iupui.edu/bitstream/handle/10244/520/no9researchreport.pdf?sequ.

13) Cutler, David M., and Fiona Scott Morton. “Hospitals, Market Share, and Consolidation.” *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675.

14) Cutler, David M., and Fiona Scott Morton. “Hospitals, Market Share, and Consolidation.” *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675

15) Lewis, Matthew S., and Kevin E. Pflum. “Hospital Systems and Bargaining Power: Evidence from out-of-Market Acquisitions.” *The RAND Journal of Economics* 48, no. 3 (2017): 579–610. https://doi.org/10.1111/1756-2171.12186.

16) “Horizontal Merger Guidelines.” *U.S. Department of Justice and the FTC.* Accessed December 1, 2019. https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf.

17) “Executive Summery: Report 7 of the Council on Medical Service.” *American Medical Association.* Accessed December 1, 2019. https://www.ama-assn.org/system/files/2019-07/a19-cms-report-7.pdf.

18) Mathews, Anna Wilde. “Behind Your Rising Health-Care Bills: Secret Hospital Deals That Squelch Competition.” The Wall Street Journal. Dow Jones & Company, September 18, 2018.

https://www.wsj.com/articles/behind-your-rising-health-care-bills-secret-hospital-deals-that-squelch-competition-1537281963?mod=article_inline.

19) Gaynor, Martin, and Robert Town. "The Impact of Hospital Consolidation." *Robert Wood Johnson Foundation*, June 2012. https://pdfs.semanticscholar.org/0cf9/55cf2e6ce5428a61fdf7666df8123ee27c5d.pdf.

20) Vogt, William, and Robert Town. "How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?" *Robert Wood Johnson Foundation*, February 2006. https://folio.iupui.edu/bitstream/handle/10244/520/no9researchreport.pdf?sequ.

21) Vogt, William, and Robert Town. "How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?" *Robert Wood Johnson Foundation*, February 2006. https://folio.iupui.edu/bitstream/handle/10244/520/no9researchreport.pdf?sequ.

22) Cutler, David M., and Fiona Scott Morton. "Hospitals, Market Share, and Consolidation." *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675.

23) Melnick, Glenn, and Emmett Keeler. "The Effects of Multi-Hospital Systems on Hospital Prices." *Journal of Health Economics* 26, no. 2 (2007): 400–413. https://doi.org/10.1016/j.jhealeco.2006.10.002.

24) Lynk, William J. "Nonprofit Hospital Mergers and the Exercise of Market Power." *The Journal of Law and Economics* 38, no. 2 (1995): 437–61. https://doi.org/10.1086/467338.

25) Gaynor, Martin, and Robert Town. "The Impact of Hospital Consolidation." *Robert Wood Johnson Foundation*, June 2012. https://pdfs.semanticscholar.org/0cf9/55cf2e6ce5428a61fdf7666df8123ee27c5d.pdf

26) Kessler, D. P., and M. B. Mcclellan. "Is Hospital Competition Socially Wasteful?" *The Quarterly Journal of Economics* 115, no. 2 (January 2000): 577–615. https://doi.org/10.1162/003355300554863.

27) Vogt, William, and Robert Town. "How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?" *Robert Wood Johnson Foundation*, February 2006. https://folio.iupui.edu/bitstream/handle/10244/520/no9researchreport.pdf?sequ.

28) Cutler, David M., and Fiona Scott Morton. "Hospitals, Market Share, and Consolidation." *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675

29) Weil, Thomas. "Hospital Mergers: A Panacea?" *Journal of Health Services Research & Policy* 15, no. 4 (2010): 251–53. https://doi.org/10.1258/jhsrp.2010.010035

30) Harrison, Teresa D. "Do Mergers Really Reduce Costs? Evidence From Hospitals." *Economic Inquiry* 49, no. 4 (2010): 1054–69. https://doi.org/10.1111/j.1465-7295.2010.00246.x.

31) Gaynor, Martin. "Examining the Impact of Health Care Consolidation." *Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee*, February 14, 2018. https://docs.house.gov/meetings/IF/IF02/20180214/106855/HHRG-115-IF02-Wstate-GaynorM-20180214.pdf.

32) Dranove, David, and Richard Lindrooth. "Hospital Consolidation and Costs: Another Look at the Evidence." *Journal of Health Economics* 22, no. 6 (2003): 983–97. https://doi.org/10.1016/j.jhealeco.2003.05.001.

33) Harrison, Teresa D. "Do Mergers Really Reduce Costs? Evidence From Hospitals." *Economic Inquiry* 49, no. 4 (2010): 1054–69. https://doi.org/10.1111/j.1465-7295.2010.00246.x.

34) "The Impact of Yale-New Haven Health System's Expansion." *Hospital Market Concentration in Connecticut*, 2015. http://aftct.org/sites/aftct.org/files/ynhhs_market_report_final.pdf.

35) Ibid.

36) "About Us." Yale New Haven Health. YNHH. Accessed December 1, 2019. https://www.ynhhs.org/about.aspx

37) "The Impact of Yale-New Haven Health System's Expansion." *Hospital Market Concentration in Connecticut*, 2015. http://aftct.org/sites/aftct.org/files/ynhhs_market_report_final.pdf.

38) Ibid.

39) Cutler, David M., and Fiona Scott Morton. "Hospitals, Market Share, and Consolidation." *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675.

40) "Executive Summery: Report 7 of the Council on Medical Service." *American Medical Association*. Accessed December 1, 2019. https://www.ama-assn.org/system/files/2019-07/a19-cms-report-7.pdf.

41) Roy, Avik. “Improving Hospital Competition: A Key to Affordable Health Care.” Medium. FREOPP.org, October 18, 2019. https://freopp.org/improving-hospital-competition-a-key-to-affordable-medicine-343e9b5c70f.

42) Gawande, Atul. “The Cost Conundrum.” The New Yorker. The New Yorker, June 19, 2017. https://www.newyorker.com/magazine/2009/06/01/the-cost-conundrum.

43) Cooper, Zack, Stuart Craig, Martin Gaynor, Nir J. Harish, Harlan M. Krumholz, and John Van Reenen. “Hospital Prices Grew Substantially Faster Than Physician Prices For Hospital-Based Care In 2007–14.” *Health Affairs* 38, no. 2 (2019): 184–89. https://doi.org/10.1377/hlthaff.2018.05424.

Works Cited

"About Us." Yale New Haven Health. YNHH. Accessed December 1, 2019. https://www.ynhhs.org/about.aspx.

"Bitter Pill: Why Medical Bills Are Killing Us." Time. Time. Accessed December 6, 2019. https://time.com/198/bitter-pill-why-medical-bills-are-killing-us/.

Capps, Cory S., David Dranove, Shane Greenstein, and Mark Satterthwaite. "Antitrust Policy and Hospital Mergers: Recommendations for a New Approach." *The Antitrust Bulletin* 47, no. 4 (2002): 677–714. https://doi.org/10.1177/0003603x0204700407.

Cooper, Zack, Stuart Craig, Martin Gaynor, Nir J. Harish, Harlan M. Krumholz, and John Van Reenen. "Hospital Prices Grew Substantially Faster Than Physician Prices For Hospital-Based Care In 2007–14." *Health Affairs* 38, no. 2 (2019): 184–89. https://doi.org/10.1377/hlthaff.2018.05424.

Cutler, David M., and Fiona Scott Morton. "Hospitals, Market Share, and Consolidation." *Jama* 310, no. 18 (2013): 1964. https://doi.org/10.1001/jama.2013.281675.

Dauda, Seidu. "Hospital and Health Insurance Markets Concentration and Inpatient Hospital Transaction Prices in the U.S. Health Care Market." *Health Services Research* 53, no. 2 (November 2017): 1203–26. https://doi.org/10.1111/1475-6773.12706.

Dranove, David, and Richard Lindrooth. "Hospital Consolidation and Costs: Another Look at the Evidence." *Journal of Health Economics* 22, no. 6 (2003): 983–97. https://doi.org/10.1016/j.jhealeco.2003.05.001.

"Executive Summery: Report 7 of the Council on Medical Service." *American Medical Association*. Accessed December 1, 2019. https://www.ama-assn.org/system/files/2019-07/a19-cms-report-7.pdf.

Frakt, Austin B. "Hospital Consolidation Isn't the Key to Lowering Costs and Raising Quality." *Jama* 313, no. 4 (2015): 345. https://doi.org/10.1001/jama.2014.17412.

Gawande, Atul. "The Cost Conundrum." The New Yorker. The New Yorker, June 19, 2017. https://www.newyorker.com/magazine/2009/06/01/the-cost-conundrum.

Gaynor, Martin, and William B. Vogt. "Chapter 27 Antitrust and Competition in Health Care Markets." *Handbook of Health Economics*, 2000, 1405–87. https://doi.org/10.1016/s1574-0064(00)80040-2.

Gaynor, Martin, and Robert Town. "The Impact of Hospital Consolidation." *Robert Wood Johnson Foundation*, June 2012. https://pdfs.semanticscholar.org/0cf9/55cf2e6ce5428a61fdf7666df8123ee27c5d.pdf.

Gaynor, Martin. "Examining the Impact of Health Care Consolidation." *Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee*, February 14, 2018. https://docs.house.gov/meetings/IF/IF02/20180214/106855/HHRG-115-IF02-Wstate-GaynorM-20180214.pdf.

Gowrisankaran, Gautam, and Robert J. Town. "Competition, Payers, and Hospital Quality1." *Health Services Research* 38, no. 6p1 (2003): 1403–22. https://doi.org/10.1111/j.1475-6773.2003.00185.x.

Harrison, Teresa D. "Do Mergers Really Reduce Costs? Evidence From Hospitals." *Economic Inquiry* 49, no. 4 (2010): 1054–69. https://doi.org/10.1111/j.1465-7295.2010.00246.x.

"Health at a Glance 2017: OECD Indicators." OECD instance. OECD. Accessed December 1, 2019. https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2017_health_glance-2017-en.

"Horizontal Merger Guidelines." *U.S. Department of Justice and the FTC.* Accessed December 1, 2019. https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf.

Kessler, D. P., and M. B. Mcclellan. "Is Hospital Competition Socially Wasteful?" *The Quarterly Journal of Economics* 115, no. 2 (January 2000): 577–615. https://doi.org/10.1162/003355300554863.

Lewis, Matthew S., and Kevin E. Pflum. "Hospital Systems and Bargaining Power: Evidence from out-of-Market Acquisitions." *The RAND Journal of Economics* 48, no. 3 (2017): 579–610. https://doi.org/10.1111/1756-2171.12186.

Lynk, William J. "Nonprofit Hospital Mergers and the Exercise of Market Power." *The Journal of Law and Economics* 38, no. 2 (1995): 437–61. https://doi.org/10.1086/467338.

Mathews, Anna Wilde. "Behind Your Rising Health-Care Bills: Secret Hospital Deals That Squelch Competition." The Wall Street Journal. Dow Jones & Company, September 18, 2018. https://www.wsj.com/articles/behind-your-rising-health-care-bills-secret-hospital-deals-that-squelch-competition-1537281963?mod=article_inline.

Melnick, Glenn, and Emmett Keeler. "The Effects of Multi-Hospital Systems on Hospital Prices." *Journal of Health Economics* 26, no. 2 (2007): 400–413. https://doi.org/10.1016/j.jhealeco.2006.10.002.

Roy, Avik. “Improving Hospital Competition: A Key to Affordable Health Care.” Medium. FREOPP.org, October 18, 2019. https://freopp.org/improving-hospital-competition-a-key-to-affordable-medicine-343e9b5c70f.

Simpson, John, and Richard Shin. “Do Nonprofit Hospitals Exercise Market Power?” *International Journal of the Economics of Business* 5, no. 2 (1998): 141–57. https://doi.org/10.1080/13571519884486.

Sivey, Peter, and Yijuan Chen. “Competition and Quality in Healthcare.” *Oxford Research Encyclopedia of Economics and Finance*, 2019. https://doi.org/10.1093/acrefore/9780190625979.013.60.

“The Impact of Yale-New Haven Health System’s Expansion.” *Hospital Market Concentration in Connecticut*, 2015. http://aftct.org/sites/aftct.org/files/ynhhs_market_report_final.pdf.

Thomson, Ron B. “Competition among Hospitals in the United States.” *Health Policy* 27, no. 3 (1994): 205–31. https://doi.org/10.1016/0168-8510(94)90117-1.

Vogt, William, and Robert Town. “How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?” *Robert Wood Johnson Foundation*, February 2006. https://folio.iupui.edu/bitstream/handle/10244/520/no9researchreport.pdf?sequ.

Weil, Thomas. “Hospital Mergers: A Panacea?” *Journal of Health Services Research & Policy* 15, no. 4 (2010): 251–53. https://doi.org/10.1258/jhsrp.2010.010035.