

Diagnosing the Problem: Exploring the Effects of Consolidation and Anticompetitive Conduct in Health Care Markets

Statement before the Committee on the Judiciary
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by

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Summary of Statement

- Health care is a very large and important sector of our economy. Not only is the health care sector 1/5th of the economy, it has a critical impact on our health and wellbeing.
- The U.S. health care system is based on markets. The system will work only as well as the markets that underpin it.
- These markets do not function as well as they could, or should. Prices are high and rising, there are egregious pricing practices, quality is suboptimal, and the sector is sluggish and unresponsive, in contrast to the innovation and dynamism which characterize much of the rest of our economy.
- Lack of competition has a lot to do with these problems.
- There has been a great deal of consolidation in health care. There have been nearly 1,600 hospital mergers in the past twenty years, with over 450 since 2012. The result is that the majority of local areas are now dominated by one large, powerful health system, e.g., Boston (Partners), Pittsburgh (UPMC), and San Francisco (Sutter).
- Insurance markets are also highly consolidated. The two largest insurers have 70 percent of the market or more in one-half of all local insurance markets.
- Physician services markets have also become increasingly more concentrated. Two-thirds of specialist physician markets are highly concentrated, and 29 percent for primary care physicians.
- There were nearly 31,000 physician practice acquisitions by hospitals from 2008-2012, and over 33 percent of all physicians are now in hospital owned practices.
- Extensive research evidence shows that consolidation between close competitors leads to substantial price increases for hospitals, insurers, and physicians, without offsetting gains in improved quality or enhanced efficiency. Further, recent evidence shows that mergers between hospitals not in the same geographic area can also lead to increases in price. Just as seriously, if not more, evidence shows that patient quality of care suffers from lack of competition. Last, competition affects the form of payment – hospitals with fewer competitors negotiate more favorable forms of payment and reject those they dislike. This poses a serious challenge for payment reform.
- Research evidence shows not-for-profit hospitals exploit market power just as much as for-profits.
- It is also possible that hospital mergers lead to, or enhance monopsony power in labor markets. This can depress wages below the efficient level, distort hiring decisions, and in the long run, harm incentives for investment in human capital. Recent evidence shows impacts of hospital mergers consistent with these concerns.

- There are also concerns about anticompetitive conduct. Firms who have acquired market power have an incentive to maintain or enhance it.
 - Some dominant health systems have been using restrictive contracts with insurers to try to hamper the free flow of patients to competitors, thereby harming competition and enhancing their market power.
 - There are extensive reports of health systems engaging in “data blocking” – impeding the flow of patient information to providers outside the system. This has the potential to harm competition by making it more difficult for patients to switch providers.

Now that most hospital markets are dominated by one large health system, there is considerable potential for this kind of conduct seriously harming competition.

- This is causing serious harm to patients and to the health care system as a whole.
- Americans who live in rural areas are particularly vulnerable to these harms because their alternatives to a dominant or monopoly provider are often far away.
- Policies are needed to support and promote competition in health care markets. This includes ending distortions that unintentionally incentivize consolidation, and policies to strengthen choice and competition.
- These include:
 - End policies that unintentionally incentivize consolidation.
 - End policies that hamper new competitors and impede competition.
 - Promote transparency, so employers, policymakers, and consumers have access to information about health care costs and quality.
 - Focus and strengthen antitrust enforcement. In particular:
 - * Give the DOJ and FTC the resources they need to be effective, not just to do more enforcement in existing areas, but to be able to proactively invest to address new and developing issues.
 - * Permit the FTC to enforce against anticompetitive actions by not-for-profits.
 - * Permit the FTC to use its Section 6b authority to study the insurance industry.
 - * Require simple reporting of small transactions that fall below the Hart-Scott-Rodino reporting requirements, so that the enforcement agencies can track physician practice mergers and hospital acquisitions of physician practices.
 - * Study “vertical” aspects of hospital-physician acquisitions and develop theory and evidence on competitive impacts, including harms and efficiencies.

- * Study anticompetitive conduct in health care, particularly the use of restrictive clauses in health system-insurer contracts and data blocking, and develop theories and evidence on their competitive impacts (both harms and efficiencies).
- * Consider legislation to alter the antitrust laws, specifically changing the standard plaintiffs have to meet, and changing the criteria to be met for presumption of harm to competition.

Statement

Chair Ciciline, Ranking Member Sensenbrenner, and Members of the Subcommittee, thank you for holding a hearing on this vitally important topic and for giving me the opportunity to testify in front of you today.

1 My Background

I am an economist who has been studying the health care sector, and specifically health care markets and competition, for nearly 40 years. I am a Professor of Economics and Public Policy at the Heinz College of Public Policy at Carnegie Mellon University in Pittsburgh. I served as the Director of the Bureau of Economics at the Federal Trade Commission during 2013-2014, during which time I was involved in the many health care matters that came before the Commission. I have also served the Commonwealth of Pennsylvania as a member of the Governor's Health Advisory Board and as Co-Chair of its Working Group on Shoppable Health Care.

Much of my research is directly relevant to the topic of this hearing. My project with colleagues Zack Cooper, Stuart Craig, and John Van Reenen exploits newly available data on nearly 90 million individuals with private, employer sponsored health insurance nationwide to examine variation in health care spending and prices for the privately insured ([Cooper et al., 2019](#)). One of our key findings is that hospitals that have fewer potential competitors nearby have substantially higher prices. For example, monopoly hospitals' prices are on average 12 percent higher than hospitals with 3 or more potential competitors nearby. The prices of hospitals who have one other nearby potential competitor are on average 7.3 percent higher. We also examine all hospital mergers in the United States over a five year period, and find that the average merger between two nearby hospitals (5 miles or closer) leads to a price increase of 6 percent. Further, our evidence shows that prices continue to rise for at least two years after the merger. Last, we find that hospitals that face fewer competitors can negotiate more favorable forms of payments, and resist those they dislike – a serious issue for payment reform.

My papers with Katherine Ho and Robert Town, “The Industrial Organization of Health Care Market,” ([Gaynor et al., 2015](#)), with Robert Town, “Competition in Health Care Markets,” ([Gaynor and Town, 2012a](#)), and “The Impact of Hospital Consolidation: Update” ([Gaynor and Town, 2012b](#)) are also relevant to the topic of this hearing. In those papers my co-authors and I review the research evidence on health care markets and competition. We find that there is extensive evidence that competition leads to lower prices, and often improves quality, whereas consolidation between close competitors does the opposite.

My recent White Paper with Farzad Mostashari and Paul Ginsburg ([Gaynor et al., 2017](#)) is also directly relevant to the topic of this hearing. In this White Paper Mostashari, Ginsburg, and I identify factors that are impeding the effective functioning of health care markets and propose a number of actionable solutions to make health care markets work better.

It is also notable that there is a great deal of overlap between the analysis and recommendations in our White Paper and recent reports by the Departments of Health and Human Services, Treasury, and Labor ([Azar et al., 2018](#)), Center for American Progress ([Gee and Gurwitz, 2018](#)), and the American Enterprise Institute and the Brookings Institution ([Aaron et al., 2019](#)).

2 Introduction

Health care is a very large and important industry. Health care spending is now over \$3.5 trillion and accounts for approximately 18 percent of GDP – nearly one-fifth of the entire U.S. economy ([Martin et al., 2019](#)). Hospital and physician services are a large part of the U.S. economy. In 2017, hospital care alone accounted for almost one-third of total health spending and 5.9% of GDP – roughly twice the size of automobile manufacturing, agriculture, or mining, and larger than all manufacturing sectors except food and beverage and tobacco products, which is approximately the same size. Physician services comprise 3.6% of GDP ([Martin et al., 2019](#)). The net cost of health insurance – current year premiums minus current year medical benefits paid – was 1.2% of GDP in 2017. The share of the economy accounted for by these sectors has risen dramatically over the last 30 years. In 1980, hospitals and physicians accounted for 3.6% and 1.7% of U.S. GDP, respectively, while the net cost of health insurance in 1980 was 0.34% ([Martin et al., 2011](#)).

Of course, health care is important not only because of its size. Health care services can save lives or dramatically affect the quality of life, thereby substantially improving well being and productivity.

As a consequence, the functioning of the health care sector is vitally important. A well functioning health care sector is an asset to the economy and improves quality of life for the citizenry. By the same token, problems in the health care sector act as a drag on the economy and impose a burden on individuals.

The U.S. health care system is based on markets. The vast majority of health care is privately provided (with some exceptions, such as public hospitals, the Veterans Administration, and the Indian Health Service) and over half of health care is privately financed ([Martin et al., 2019](#)). As a consequence, the health care system will only work as well as the markets that underpin it. If those markets function poorly, then we will get health care that’s not as good as it could be and that costs more than it should. Moreover, attempts at reform, no matter how important or clever, will not prove successful if they are built on top of dysfunctional markets.

There is widespread agreement that these markets do not work as well as they could, or should. Prices are high and rising ([Rosenthal, 2017](#); [National Academy of Social Insurance, 2015](#); [New York State Health Foundation, 2016](#)), they vary in seemingly incoherent ways, there are egregious pricing practices ([Cooper and Scott Morton, 2016](#); [Rosenthal, 2017](#); [Gar-](#)

mon and Chartock, 2017; Kliff, 2019), there are serious concerns about the quality of care (Institute of Medicine, 2001; Kohn et al., 1999; Kessler and McClellan, 2000), and the system is sluggish and unresponsive, lacking the innovation and dynamism that characterize much of the rest of our economy (Cutler, 2010; Chin et al., 2015; Herzlinger, 2006).

One of the reasons for this is lack of competition. The research evidence shows that hospitals and doctors who face less competition charge higher prices to private payers, without accompanying gains in efficiency or quality. Research shows the same for insurance markets. Insurers who face less competition charge higher premiums, and may pay lower prices to providers. Moreover, the evidence also shows that lack of competition can cause serious harm to the quality of care received by patients.

It's important to recognize that the burden of higher provider prices falls on individuals, not insurers or employers. Health care is not like commodity products, such as milk or gasoline. If the price of milk or gasoline goes up, consumers experience directly when they purchase these products. However, even though individuals with private employer provided health insurance pay a small portion of provider fees directly out of their own pockets, they end up paying for increased prices in the end. Insurers facing higher provider prices increase their premiums to employers. Employers then pass those increased premiums on to their workers, either in the form of lower wages (or smaller wage increases) or reduced benefits (greater premium sharing or less extensive coverage, including the loss of coverage) (Gruber, 1994; Bhattacharya and Bundorf, 2005; Baicker and Chandra, 2006; Emanuel and Fuchs, 2008; Baicker and Chandra, 2006; Currie and Madrian, 2000; Anand, 2017). As mentioned previously, when consolidation leads to providers obtaining higher prices from insurers the impact ultimately falls on consumers, not insurers or employers. Figure 1 illustrates this. Workers' contributions to health insurance premiums grew 259 percent from 1999 to 2018, while wages grew by only 68 percent (Henry J. Kaiser Family Foundation, 2018).

The burden of private health care spending on U.S. households has been growing, so much so that it's taking up a larger and larger share of household spending and exceeding increases in pay for many workers. Figure 2 illustrates that middle class families' spending on health care has increased 25 percent since 2007, crowding out spending on other goods and services, including food, housing, and clothing. Health insurance fringe benefits for workers, chief among which is health care, increased as a share of workers' total compensation over this same period, growing from 12 to 14.5 percent, while wages stayed flat (see Monaco and Pierce, 2015, Table 1).

As documented below, there has been a tremendous amount of consolidation among health care providers. Consolidation has also been occurring among health insurers. It's important to be clear that consolidation can be either beneficial or harmful. Consolidation can bring efficiencies – it can reduce inefficient duplication of services, allow firms to combine to achieve efficient size, or facilitate investment in quality or efficiency improvements. Successful firms may also expand by acquiring others. If firms get larger by being better at giving consumers what they want or driving down costs so their goods are cheaper, that's a good

thing (big does not equal bad), so long as they don't engage in actions to attempt to then limit competition. On the other hand, consolidation can reduce competition and enhance market power and thereby lead to increased prices or reduced quality. Moreover, firms that have acquired market power have strong incentives to maintain or enhance it. This leads to the potential for anticompetitive conduct by firms that have acquired dominant positions through consolidation.

3 Consolidation

There has been a tremendous amount of consolidation in the health care industry over the last 20 years. A recent paper by [Fulton \(2017\)](#) documents these trends and shows high and increasing concentration in U.S. hospital, physician, and insurance markets. [Figure 5](#) illustrates these trends from 2010 to 2016, using the Herfindahl-Hirschman Index (HHI) measure of market concentration.¹

3.1 Hospitals

The American Hospital Association documents 1,577 hospital mergers from 1998 to 2017, with 456 occurring over the five years from 2013 to 2017. [Figure 3](#) illustrates the number of mergers and the number of hospitals involved in these transactions from 1998 to 2017. A trade publication documents an additional 90 announced hospital mergers in 2018 ([Kaufman Hall, 2019](#)).

While some of these mergers may have little or no impact on competition, many include mergers between close competitors, especially given that hospital markets are already highly concentrated. [Figure 4](#) shows that almost half of the hospital mergers occurring from 2010 to 2012 were between hospitals in the same area.² Further, as indicated below, recent evidence indicates that even mergers between hospitals in different may lead to higher prices.

As a result of this consolidation, the majority of hospital markets are highly concentrated, and many areas of the country are dominated by one or two large hospital systems with no close competitors ([Cutler and Scott Morton, 2013](#); [Fulton, 2017](#)).³ This includes places

¹The HHI is equal to the sum of firms' market shares. It reaches a maximum of 10,000 when there is only one firm in the market. It gets smaller the more equal are firms' market shares and the more firms there are in the market.

²The areas used are Core Based Statistical Areas. For a definition see (p. A-15 in [U.S. Census Bureau, 2012](#))

³[Fulton \(2017\)](#) reports that 90 percent of Metropolitan Statistical Areas (MSAs) were highly concentrated for hospitals. The U.S. antitrust enforcement agencies define an HHI of 2,500 or above as "highly concentrated" ([Federal Trade Commission and Department of Justice, 1992](#)). My co-authors Zack Cooper, Stuart Craig, John Van Reenen, and I have calculated that the largest health system has over 50 percent of the market in 62 percent of areas in the country (commuting zones).

like Boston (Partners), Cleveland (Cleveland Clinic and University Hospital), Pittsburgh (UPMC), and San Francisco (Sutter). Mergers that eliminate close competitors cause direct harm to competition. In addition, once a firm has obtained a dominant position it has an incentive to maintain or enhance it, including by engaging in anticompetitive practices.

3.2 Physicians

[Capps et al. \(2017\)](#) find that there has been major consolidation among physician practices. Physician practices with 11 or more doctors grew larger from 2007 to 2013, mainly through acquisitions of smaller physician practices, while practices with 10 or fewer doctors grew smaller. [Muhlestein and Smith \(2016\)](#) also report that the proportion of physicians in small practices dropped from 2013 to 2015, while the proportion in large practices increased. [Kane \(2017\)](#) reports similar trends. [Fulton \(2017\)](#) reports that 65 percent of MSAs were highly concentrated for specialist physicians, and 39 percent for primary care physicians. He finds a particularly pronounced increase in market concentration for primary care physicians.

Moreover, there have been a very large number of acquisitions of physician practices by hospitals. In 2006, 28 percent of primary physicians were employed by hospitals. By 2016, that number had risen to 44 percent ([Fulton, 2017](#)). The American Medical Association reports that 33 percent of all physicians were employed by hospitals in 2016, and less than half own their own practice ([Kane, 2017](#)). [Fulton \(2017\)](#) finds that increased concentration in primary care physician markets is associated with practices being owned by hospitals. [Venkatesh \(2019\)](#) documents nearly 31,000 physician practice acquisitions by hospitals from 2008-2012, and that over 55 percent of physicians are in hospital owned practices.

It's important to note that the vast majority of physician practice mergers and many hospital acquisitions of physician practices are not reported to the federal antitrust enforcement agencies, because these transactions are too small to fall under the Hart-Scott-Rodino reporting guidelines ([Capps et al., 2017](#)).⁴ Consideration should be given to adopting simple, streamlined reporting requirements for smaller transactions so that the enforcement agencies are able to properly track them and consider whether any are of concern.

3.3 Insurers

The insurance industry is also highly concentrated. [Fulton \(2017\)](#) finds that 57 percent of health insurance markets were highly concentrated in 2016. The American Medical Association reports that 69 percent were highly concentrated ([American Medical Association, 2017](#)). The market share of the top four insurers in the fully insured commercial segment was 76 percent in 2013, up from 61 percent in 2001 (see [Figure 6](#)). If one looks at the state or local

⁴[Wollmann \(2018\)](#) shows that a change in the Hart-Scott-Rodino reporting thresholds led to many transactions not being reported to the agencies, and therefore for most of those transactions to escape antitrust scrutiny.

level, the concentration is more pronounced. In 2014, the two largest insurers had 70 percent or more of the market in one half of all MSAs (Figure 7).

4 Evidence on the Impacts of Consolidation

There is now a considerable body of scientific research evidence on the impacts of consolidation in health care. Most of the research studies are on the hospital sector, because data have typically been more readily available for hospitals than for physicians or for insurers, but there are now a considerable number of research studies on those industries as well (see [Gaynor et al., 2015](#); [Tsai and Jha, 2014](#); [Gaynor and Town, 2012a,b](#); [Dranove and Satterthwaite, 2000](#); [Gaynor and Vogt, 2000](#); [Vogt and Town, 2006](#), for reviews of the evidence).

4.1 Impacts on Prices

4.1.1 Hospitals

There are many studies of hospital mergers. These studies look at many different mergers in different places in different time periods, and find substantial increases in price resulting from mergers in concentrated markets (e.g., [Town and Vistnes, 2001](#); [Krishnan, 2001](#); [Vita and Sacher, 2001](#); [Gaynor and Vogt, 2003](#); [Capps et al., 2003](#); [Capps and Dranove, 2004](#); [Dafny, 2009](#); [Haas-Wilson and Garmon, 2011](#); [Tenn, 2011](#); [Thompson, 2011](#); [Gowrisankaran et al., 2015](#)). Price increases on the order of 20 or 30 percent are common, with some increases as high as 65 percent.⁵

These results make sense. Hospitals' negotiations with insurers determine prices and whether they are in an insurer's provider network. Insurers want to build a provider network that employers (and consumers) will value. If two hospitals are viewed as good alternatives to each other by consumers (close substitutes), then the insurer can substitute one for the other with little loss to the value of their product, and therefore each hospital's bargaining leverage is limited. If one hospital declines to join the network, customers will be "almost as happy" with access to the other. If the two hospitals merge, the insurer will now lose substantial value if they offer a network without the merged entity (if there are no other hospitals viewed as good alternatives by consumers). The merger therefore generates bargaining leverage and hospitals can negotiate a price increase.

Overall, these studies consistently show that when hospital consolidation is between close competitors it raises prices, and by substantial amounts. Consolidated hospitals that are able

⁵These include estimates of price increases of 64.9 percent due to the Evanston Northwestern-Highland Park merger in the Chicago area, 44.2 percent due to the Sutter-Summit merger in the San Francisco Bay area, and 65.3 percent due to the merger of Cape Fear and New Hanover hospitals in Wilmington, North Carolina.

to charge higher prices due to reduced competition are able to do so on an ongoing basis, making this a permanent rather than a transitory problem.

There is also more recent evidence that mergers between hospitals that are not near to each other can lead to price increases. Quite a few hospital mergers are between hospitals that are not in the same area (see Figure 4). Many employers have locations with employees in a number of geographic areas. These employers will most likely prefer insurance plans with provider networks that cover their employees in all of these locations. An insurance plan thus has an incentive to have a provider network that covers the multiple locations of employers. It is therefore costly for that insurer to lose a hospital system that has hospitals in multiple locations – their network would become less attractive. This means that a merger between hospitals in these locations can increase their bargaining power, and hence their prices.

There are two recent papers find evidence that such mergers lead to significant hospital price increases. [Lewis and Pflum \(2017\)](#) find that such mergers lead to price increases of 17 percent. [Dafny et al. \(2019\)](#) find that mergers between hospitals in different markets in the same state (but not in different states) lead to price increases of 10 percent.

Understanding the competitive effects of cross-market hospital mergers is an important area for further investigation, and determining appropriate policy responses.

4.1.2 Physicians

There is also substantial evidence that physician practices facing less competition have substantially higher prices. [Koch and Ulrick \(2017\)](#) examine the effects of a merger of six orthopedic groups in southeastern Pennsylvania and find that the merger generated large price increases – nearly 25 percent for one payer and 15 percent for another (see Figure 8). [Dunn and Shapiro \(2014\)](#), [Baker et al. \(2014b\)](#), [Austin and Baker \(2015\)](#) all find that physician practices that face fewer potential competitors have substantially higher prices.

Moreover, studies that examine the impacts of hospital acquisitions of physician practices find that such acquisitions result in significantly higher prices and more spending ([Capps et al., 2016](#); [Neprash et al., 2015](#); [Baker et al., 2014a](#); [Robinson and Miller, 2014](#)). For example, [Capps et al. \(2016\)](#) find that hospital acquisitions of physician practices led to prices increasing by an average of 14 percent and patient spending increasing by 4.9 percent.

4.1.3 Insurers

Insurance premiums also respond strongly to competition. Markets with more insurers have substantially lower premiums. Insurer premiums are driven in large part by medical expenses. Premiums cover the majority of health care expenses of enrollees, so factors that increase health care spending also increase health insurance premiums. However, the cost of private health insurance net of medical expenses also has grown rapidly in recent years (12.4 percent

in 2014 and 7.6 percent in 2016), such that health insurance costs comprised 6.6 percent of total health spending in 2015, compared to 5.5 percent in 2009 (Martin et al., 2016). Further, there is substantial geographic variation in health insurance premiums. For example, premiums for an individual silver plan in the ACA marketplaces ranged from \$163 to \$1,119 per month (Robert Wood Johnson Foundation, HIX Compare <https://hixcompare.org>).

Research evidence indicates that premiums are higher in more consolidated insurance markets, leading to concerns about competition among insurers and about increasing consolidation (Dafny, 2015, 2010; Dafny et al., 2012). For example, the merger between Aetna and Prudential in 1999 was found to have led to a 7 percent increase in premiums for large employers. Similarly, the Sierra United merger in 2008 was found to have led to an almost 14 percent increase in small group premiums (Guardado et al., 2013). Moreover, researchers have found that adding one more insurer to an ACA marketplace reduces premiums by 4.5 percent (Dafny et al., 2015), and that eliminating an insurer for an employer to choose from can lead to large (16.6 percent) premium increases (Ho and Lee, 2017).

4.2 Impacts on Quality

Just as, if not more, important than impacts on prices are impacts on the quality of care. The quality of health care can have profound impacts on patients' lives, including their probability of survival.

4.2.1 Hospitals

A number of studies have found that patient health outcomes are substantially worse at hospitals in more concentrated markets, where those hospitals face less potential competition.

Studies of markets with administered prices (e.g., Medicare) find that less competition leads to worse quality. One of the most striking results is from Kessler and McClellan (2000), who find that risk-adjusted one year mortality for Medicare heart attack (acute myocardial infarction, or AMI) patients is significantly higher in more concentrated markets.⁶ In particular, patients in the most concentrated markets had mortality probabilities 1.46 points higher than those in the least concentrated markets (this constitutes a 4.4% difference) as of 1991. This is an extremely large difference – it amounts to over 2,000 fewer (statistical) deaths in the least concentrated vs. most concentrated markets.

There are similar results from studies of the English National Health Service (NHS). The NHS adopted a set of reforms in 2006 that were intended to increase patient choice and hospital competition, and introduced administered prices for hospitals based on patient diagnoses (analogous to the Medicare Prospective Payment System). Two recent studies

⁶Concentrated markets have fewer competitors or are dominated by a small number of competitors, e.g., one large hospital.

examine the impacts of this reform (Cooper et al., 2011; Gaynor et al., 2013) and find that, following the reform, risk-adjusted mortality from heart attacks fell more at hospitals in less concentrated markets than at hospitals in more concentrated markets. Gaynor et al. (2013) also look at mortality from all causes and find that patients fared worse at hospitals in more consolidated markets.

Studies of markets where prices are market determined (e.g., markets for those with private health insurance) find that consolidation can lead to lower quality, although some studies go the other way. In my opinion the strongest scientific studies find that quality is lower where there's less competition. For example, Romano and Balan (2011) find that the merger of Evanston Northwestern and Highland Park hospitals had no effect on some quality indicators, while it harmed others. Capps (2005) finds that hospital mergers in New York state had no impacts on many quality indicators, but led to increases in mortality for patients suffering from heart attacks and from failure. Hayford (2012) finds that hospital mergers in California led to substantially increased mortality rates for patients with heart disease. Cutler et al. (2010) find that the removal of barriers to entry led to increased market shares for low mortality rate CABG surgeons in Pennsylvania. Haas et al. (2018) find that system expansions (such as those due to merger or acquisition) can pose significant patient safety risks. Short and Ho (2019) find that hospital market concentration is strongly negatively associated with multiple measures of patient satisfaction.

4.2.2 Physicians

There is also evidence that the quality of care delivered by physicians suffers when physician practices face less competition. Koch et al. (2018) find that an increase in consolidation among cardiology practices leads to increases in negative health outcomes for their patients. They find that moving from a zip code at the 25th percentile of the cardiology market concentration to one at the 75th percentile is associated with 5 to 7 percent increases in risk-adjusted mortality. Eisenberg (2011) finds that cardiologists who face less competition have patients with higher mortality rates. McWilliams et al. (2013) find that larger hospital owned physician practices have higher readmission rates and perform no better than smaller practices on process based measures of quality. Roberts et al. (2017) find that quality of care at high priced physicians practices is no better than at low priced physician practices. (Scott et al., 2018) find no improvement in quality of care at hospitals that acquired physician practices compared to those that did not. Further, the testimony of Dr. Kenneth Kizer in a recent physician practice merger case (Federal Trade Commission and State of Idaho v. St. Luke's Health System, Ltd, and Saltzer Medical Group, P.A.) documents that clinical integration is achieved with many different forms of organization, i.e., that consolidation isn't necessary to achieve the benefits of clinical integration.⁷

⁷<https://www.ftc.gov/system/files/documents/cases/131021stlukedemokizer.pdf>

4.2.3 Patient Referrals

There has been concern about the possible impact of hospital ownership of physician practices on where those physicians refer their patients, and whether that is in the patients' best interests (Mathews and Evans, 2018). A number of studies have found that patient referrals are substantially altered by hospital acquisition of a physician practice. (Brot-Goldberg and de Vaan, 2018) find that if primary care physicians in Massachusetts are in a practice owned by a health system they are substantially more likely to refer to an orthopedist within the health system that owns the practice. They also estimate that this is largely due to anti-competitive steering. (Venkatesh, 2019) examines Medicare data and finds a 9-fold increase in the probability that a physician refers to a hospital once their practice is acquired by the hospital. Hospital divestiture of a practice has the opposite effect (Figure 9). A study by Walden (2017) also employs Medicare data and finds that hospital acquisitions of physician practices “increases referrals to specialists employed by the acquirer by 52 percent after acquisition”, and reduces referrals to specialists employed by competitors by 7 percent.

4.2.4 Labor Market Impacts, Monopsony Power

It is also possible that health care consolidation can have impacts on labor markets. Consolidation that causes competitive harm in the output market does not necessarily cause harm to competition in the input market (monopsony power is the term for market power in buying inputs). For example, two local grocery stores may merge to monopoly in an area, but they purchase frozen food items on a national market with lots of competition. Conversely, it is possible that a merger may have no harm to competition in the output market, but cause competitive harm in an input market. For example, consider two coal mines located in the same area that merge. Coal is sold on a national market, so the merger will not cause competitive harm. However, if the coal mines are the largest (or only) employers in the area, then the merger will cause harm to competition in the labor market.

In the case of health care, both the output market for health care services and the input market for labor are local. As a consequence, a merger that causes harm to competition in the market for health care services has nontrivial potential to harm competition in the labor market. The extent to which such a merger will cause labor market harms depends on the alternatives that workers have in terms of the types of other jobs available and where they are located. Nonspecialized workers, such as custodians, food service workers, and security guards are less likely to be affected by a merger, since their skills are readily transferable to other employers in other sectors.⁸ Workers who have specialized skills that are not readily transferable to other employers in other sectors are more likely to be harmed. For example, consider a town with two hospitals, a large automobile assembly plant, and multiple retail and service establishments. If the two hospitals merge to monopoly, hospital custodians

⁸However, even workers with readily transferable skills can be harmed by a merger if the merged firm is the dominant employer overall in an area.

and security guards will have alternatives at the assembly plant or at the retail or service establishments. As a consequence, competition for these workers may be little affected by the merger. Nurses and medical technicians, however, have nowhere else to turn in the local market, so there will be substantial harm to competition for health care workers.

There are a number of papers that have demonstrated the presence of monopsony power in the market for nurses (see e.g., [Sullivan, 1989](#); [Currie et al., 2005](#); [Staiger et al., 2010](#)). These papers demonstrate that hospitals possess and exercise monopsony power in the market for nurses. They do not, however, provide direct evidence on the impacts of consolidation. A recent paper, however, looks directly at the impacts of hospital mergers on workers' wages. [Prager and Schmitt \(2019\)](#) look at the impacts of 84 hospital mergers nationally between 2000 and 2010. They find that hospital mergers that resulted in large increases in concentration substantially reduced wage growth for workers with industry specific skills, but not for unskilled workers. They find that "Following such mergers, annual wage growth is 1.1 percentage points slower for skilled non-health professionals and 1.7 percentage points slower for nursing and pharmacy workers than in markets without mergers." This suggests that hospital mergers can harm competition in the labor market for workers with skills specific to the hospital industry.

The impacts of consolidation on labor markets (and input markets generally) is an area where study is needed to understand the nature of the impacts of consolidation and evidence of those effects. Moreover, antitrust authorities need to know to what extent merger enforcement focused on output markets addresses potential input market competitive harms, and to what extent input markets require a separate focus. Further, if the agencies are to pursue enforcement in this area they need to develop economic and legal approaches to this issue.

4.3 Impacts on Costs, Coordination, Quality

It is plausible that consolidation between hospital, physician practices or insurers, in a number of combinations, could reduce costs, increase care coordination, or enhance efficiency. There may be gains from operating at a larger scale, eliminating wasteful duplication, improved communications, enhanced incentives for mutually beneficial investments, etc. However, it is important to realize that consolidation is not integration. Acquiring another firm changes ownership, but in and of itself does nothing to achieve integration. Integration, if it happens, is a long process that occurs after acquisition.

While the intuition, and the rhetoric, surrounding consolidation, has been positive, the reality is less encouraging. The evidence on the effects of consolidation is mixed, but it's safe to say that it does not show overall gains from consolidation. Merged hospitals, insurers, physician practices, or integrated systems are not systematically less costly, higher quality, or more effective than independent firms (see [Burns and Muller, 2008](#); [Burns et al., 2015](#); [Goldsmith et al., 2015](#); [Burns et al., 2013](#); [McWilliams et al., 2013](#); [Tsai and Jha, 2014](#)). For example, [Burns et al. \(2015\)](#) find no evidence that hospital systems are lower cost,

Goldsmith et al. (2015) find no evidence that integrated delivery systems perform better than independents, Koch et al. (2018) find higher Medicare expenditures for cardiology practices in consolidated markets, and McWilliams et al. (2013) find higher Medicare expenditures for large hospital-based practices. After more than 3 decades of extensive consolidation in health care, it seems likely that the promised gains from consolidation would have materialized by now if they were truly there.

5 Anticompetitive Conduct

Firms that acquire a dominant market position usually wish to keep it. The incentive to maintain or enhance a dominant position can be beneficial when it leads the firm to deliver value to consumers in order to keep or gain their business. This can result in lower prices, higher quality, better service, or enhanced innovation. There may also be strong incentives for such firms to engage in anticompetitive practices in order to disadvantage competitors or make it difficult for new products or firms to enter the market and compete.

There are prominent instances of firms in the health care industry engaging in what appear to be anticompetitive tactics. Cooper et al. (2019) find that hospitals with fewer potential competitors are more likely to negotiate contracts with insurers that have payment forms that are more favorable to them (e.g., fee for service) and reject payment forms they dislike (e.g., DRG based payment). While this is not an anticompetitive practice, it suggests that hospitals with market power are able to negotiate contracts with insurers that contain anticompetitive elements. This indeed is the issue in two recent antitrust cases. Both cases revolve around the use of restrictive clauses in hospital contracts with insurers.⁹

These clauses prevent insurers from using methods to direct their enrollees to less costly or better hospitals. One of these methods is called tiering - a practice where enrollees pay less out of their own pockets for care received from providers in a more favorable group (“tier”), and pay more if they see a provider in a less favorable tier. Insurers use tiering to give enrollees incentives to obtain care at less costly or higher quality providers. This system thus gives providers an incentive to do the things it takes to be in the more favorable tier, and is a way to promote competition. Another method is steering - enrollees are directed to providers who are preferred, due to lower costs or higher quality. Steering also promotes competition - providers have incentives to agree to lower prices or provide better quality or service in order to be in the preferred group. A third method employed by insurers is transparency – providing enrollees with information about the costs or quality of care at different providers. The intent is to provide enrollees with the information they need to choose the right provider,

⁹United States and the State of North Carolina v. The Charlotte-Mecklenburg Hospital Authority, d/b/a Carolinas Healthcare System, <https://www.justice.gov/atr/case/us-and-state-north-carolina-v-charlotte-mecklenburg-hospital-authority-dba-carolinas>; People of the State of California Ex Rel. Xavier Becerra v. Sutter Health, <https://oag.ca.gov/news/press-releases/attorney-general-becerra-sues-sutter-health-anti-competitive-practices-increase>

and by doing so to give providers incentives to compete on those factors.

In both of the antitrust suits mentioned above, the health systems had negotiated clauses in their contracts with insurers which prohibited the insurers from using any of these methods to try to direct patients to lower cost or better providers. The clauses prohibiting the use of these methods are called “anti-tiering,” “anti-steering,” and “gag” clauses. The concern with the use of these restrictive clauses is that they harm competition by preventing insurers by using methods that provide incentives to providers to compete to attract patients. The lawsuit by the DOJ against Carolinas Health System was settled, with the health system agreeing not to use these restrictive clauses.¹⁰ The California Attorney General’s lawsuit against Sutter Health System is ongoing.

At present there is no systematic evidence on the extent to which anti-tiering, anti-steering, and gag clauses are being employed by health systems in their contracts with insurers, nor analysis of their impacts. This is an area which needs investigation to document the extent of the practice and its impacts.

Another practice that raises concerns is “data blocking” (Savage et al., 2019). Data blocking is a practice in which health systems impede or prevent the flow of patients’ clinical data to providers outside their system. It also refers to a practice by electronic medical record (EMR) providers to impede the flow of data to rival EMR systems via lack of compatibility. Data blocking by providers makes it more difficult for patients to go to rival providers, locking them in, since their medical information doesn’t go with them. Reducing patient mobility across providers harms competition and benefits incumbents. While there are extensive reports of data blocking, there isn’t systematic evidence on the extent of the practice, or on its impacts. Study is needed to understand the nature of data blocking, and the extent to which it leads to harm to competition or to efficiencies.

6 Policies to Make Health Care Markets Work

As I have discussed, consolidation in health care has not delivered on lower costs, improved coordination of care, or enhanced quality. What has happened is that consolidation between hospitals, physician practices, and insurers who are close competitors has reduced competition, leading to higher prices and harming quality. Even worse, reduced competition tends to preserve the status quo in health care by protecting existing firms and making it more difficult for new firms to enter markets and succeed. This leads to excessive rigidity and resistance to change, as opposed to the innovation and dynamism that we need.

Farzad Mostashari, Paul Ginsburg and I have proposed a set of policies to enhance competition in health care (Gaynor et al., 2017). Rather than recapping what has already been written, let me briefly summarize some key points, and add a few new thoughts.

¹⁰<https://www.justice.gov/atr/case-document/file/1111581/download>.

- One key set of actions is to end policies that unintentionally provide incentives for consolidation. It has been well documented that certain Medicare payment policies have the unintended effect of doing this (Forlines, 2018; Desai and McWilliams, 2018). Putting an end to policies that artificially encourage consolidation will help by reducing consolidation, and thereby consolidation that harms competition along with it.
- Another set of things that can be done to reduce unintended incentives to consolidate is to reduce administrative burdens that generate more costs than benefits. One example of these is quality reporting. Multiple entities: Medicare, Medicaid, multiple private insurers require provider reporting of a large set of quality measures. Coordination among payers could reduce administrative burden and thereby reduce incentives to consolidate.
- Some states have regulations that unintentionally make it difficult for new firms to enter or artificially alter the negotiating positions of providers and payers. These include certificate of need laws, any willing provider laws, scope of practice laws, and licensing board decisions. Negative impacts of these laws can particularly affect residents of rural areas, where access to alternative suppliers (e.g., via telehealth and appropriate services from nurse practitioners or pharmacists) is particularly scarce. States should examine these laws and practices to make sure they are narrowly tailored to benefit the public and do not unintentionally protect incumbents and harm competition.
- This also applies to state certificate of public advantage legislation. These laws, when passed, shield merging parties from federal antitrust scrutiny and impose state supervision. If certificates of public advantage continue to be issued, omitting provisions that exempt merging parties from antitrust scrutiny will help to preserve competition.
- Federal and state agencies can pursue and prevent practices that are intended to limit competition. For example, anti-tiering, anti-steering, and gag clauses prevent insurers from providing information to enrollees about more or less expensive (or better or worse) providers, or from providing incentives to enrollees to go to less expensive or better providers. The federal antitrust enforcement agencies and state attorneys general can pursue these and other anticompetitive practices. In addition, state insurance commissioners can review contracts between insurers and providers and scrutinize them for clauses that harm competition and consumers. Legislative bodies can consider enacting legislation that bans or limits the use of such clauses in provider-insurer contracts. While there is anecdotal evidence about such practices, systematic knowledge is lacking. This is an area that needs further study and development of antitrust theories and evidence.
- Many mergers in the hospital industry are between hospitals in disparate geographic areas that do not overlap in the traditional antitrust sense. Nonetheless, such mergers may harm competition, if, for example, the hospitals are important to have in a regional or national network to offer to employers who operate regionally or nationally. There

evidence that such mergers can lead to significant price increase. At this point, however, this is an area that requires investigation to learn more about the phenomenon and to develop antitrust theories and evidence.

- There is a great deal of “vertical” consolidation in health care in the form of hospitals acquiring physician practices. To date these acquisitions have been pursued by enforcement agencies as horizontal mergers.¹¹ Vertical cases are more difficult, however, the enforcement agencies should to consider vertical approaches to such acquisitions, and the necessary antitrust theory and evidence.
- There are many reports of health systems engaging in “data blocking” - preventing or impeding patients’ clinical information from flowing to providers outside the system. This practice has the potential to harm competition, but making it difficult for patients to move across providers. Much more needs to be known about the extent and nature of this practice, its impacts, and the extent of competitive harms or efficiencies.
- Health care consolidation has the potential to harm competition not only in the market for health care services (output), but in labor markets (input). There is some recent evidence demonstrating that mergers that result in large increases in concentration adversely affect wage growth for workers with skills specific to the hospital industry. While this is welcome evidence, more investigation and study is required to learn more about the impacts of health care consolidation on labor markets and to develop antitrust theories and evidence.
- Transparency about health care costs and quality can be enhanced. At present there are no national, publicly available data on total U.S. health care costs and utilization, let alone on prices for specific services or providers. Data and information are now as vital a part of our national infrastructure as are our bridges and roads. It’s time to invest in a national health care data warehouse that brings together private and public data to inform employers, policymakers, and consumers.
- Antitrust enforcement in health care by federal and state governments, both horizontal and vertical, needs to be continued and enhanced.
 - Of course if we expect the antitrust enforcement agencies to do more in health care without reducing their efforts in the rest of the economy, then they will need more resources. The demands on the agencies have risen in terms of number of merger filings, while their inflation adjusted appropriations have declined (see Figure 10). The decline in resources relative to demands not only makes it hard for the agencies to address antitrust issues as they arise, it makes it extremely difficult

¹¹When a health system acquisition of a physician practice involves combining competing practices (Federal Trade Commission and *State of Idaho v. St. Luke’s Health System, Ltd, and Saltzer Medical Group, P.A.*, <https://www.ftc.gov/enforcement/cases-proceedings/121-0069/st-lukes-health-system-ltd-saltzer-medical-group-pa>).

for them to allocate the necessary resources to proactively invest in important new and developing areas.

- In addition, at present the FTC is prohibited from enforcing against anticompetitive conduct by not-for-profit firms (FTC Act, Section 45(a)(2), Section 44) and is not permitted to study the insurance industry under its Section 6b authority without an explicit request from Congress (Section 5(a) of the Federal Trade Commission Improvements Act of 1980). Removing these restrictions on the FTC will enable it to function to the full extent of its capabilities to protect competition and consumers in health care markets.
- Requiring parties in small transactions to report in a simple, streamlined way will enable the agencies to track the many small transactions in health care involving physician practices (both horizontal and vertical) that at present are not reported and many of which escape antitrust scrutiny.
- Legislation to strengthen antitrust can be considered, specifically altering the standard for competitive harm and changing the criteria under which mergers or conduct would be presumptively illegal (thereby shifting the burden to defendants to establish that they are not). If this comes to pass it would strengthen the antitrust enforcement agencies' positions in dealing with health care mergers they judge to be harmful, as well as mergers in general.

Bibliography

- Aaron, H., Antos, J., Adler, L., Capretta, J., Fiedler, M., Ginsburg, P., Ippolito, B., and Rivlin, A. (2019). Recommendations to reduce health care costs. https://www.brookings.edu/wp-content/uploads/2019/03/AEI_Brookings_Letter_Attachment_Cost_Reducing_Health_Policies.pdf.
- American Medical Association (2017). Competition in health insurance: A comprehensive study of U.S. markets, 2017 update. Technical report, American Medical Association, Chicago, IL.
- Anand, P. (2017). Health insurance costs and employee compensation: Evidence from the national compensation survey. *Health Economics*, 26(12):1601–1616. hec.3452.
- Austin, D. and Baker, L. (2015). Less physician practice competition is associated with higher prices paid for common procedures. *Health Affairs*, 34(10):1753–1760.
- Azar, A. M., Mnuchin, S. T., and Acosta, A. (2018). Reforming America’s health-care system through choice and competition. Technical report, U.S. Department of Health and Human Services, U.S. Department of the Treasury, U.S. Department of Labor, Washington, DC. <https://www.hhs.gov/sites/default/files/Reforming-Americas-Healthcare-System-Through-Choice-and-Competition.pdf>.
- Baicker, K. and Chandra, A. (2006). The labor market effects of rising health insurance premiums. *Journal of Labor Economics*, 24(3):609–634.
- Baker, L., Bundorf, M., and Kessler, D. (2014a). Vertical integration: Hospital ownership of physician practices is associated with higher prices and spending. *Health Affairs*, 33(5):756–763.
- Baker, L., Bundorf, M., Royalty, A., and Levin, Z. (2014b). Physician practice competition and prices paid by private insurers for office visits. *JAMA*, 312(16):1653–1662.
- Bhattacharya, J. and Bundorf, M. K. (2005). The incidence of the healthcare costs of obesity. National Bureau of Economic Research Working Paper No. 11303.
- Brot-Goldberg, Z. and de Vaan, M. (2018). Intermediation and vertical integration in the market for surgeons. unpublished manuscript, University of California, Berkeley.
- Burns, L., McCullough, J., Wholey, D., Kruse, G., Kralovec, P., and Muller, R. (2015). Is the system really the solution? Operating costs in hospital systems. *Medical Care Research and Review*, 72(3):247–272.
- Burns, L. and Muller, R. (2008). Hospital-physician collaboration: Landscape of economic integration and impact on clinical integration. *Milbank Quarterly*, 86(3):375–434.

- Burns, L. R., Goldsmith, J., and Sen, A. (2013). Horizontal and vertical integration of physicians: A tale of two tails. *Annual Review of Health Care Management: Revisiting the Evolution of Health Systems Organization Advances in Health Care Management*, 15:39–117.
- Capps, C. (2005). The quality effects of hospital mergers. unpublished manuscript, Bates White LLC.
- Capps, C. and Dranove, D. (2004). Hospital consolidation and negotiated PPO prices. *Health Affairs*, 23(2):175–181.
- Capps, C., Dranove, D., and Ody, C. (2016). The effect of hospital acquisitions of physician practices on prices and spending. unpublished manuscript, Northwestern University, https://faculty.kellogg.northwestern.edu/models/faculty/m_download_document.php?id=321.
- Capps, C., Dranove, D., and Ody, C. (2017). Physician practice consolidation driven by small acquisitions, so antitrust agencies have few tools to intervene. *Health Affairs*, 36(9):1556–1563.
- Capps, C., Dranove, D., and Satterthwaite, M. (2003). Competition and market power in option demand markets. *RAND Journal of Economics*, 34(4):737–63.
- Chin, W., Hamermesh, R., Huckman, R., McNeil, B., and Newhouse, J. (2015). 5 imperatives addressing health care’s innovation challenge. Report, Forum on Healthcare Innovation. Harvard University, Boston, MA. <http://www.hbs.edu/healthcare/Documents/Forum-on-Healthcare-Innovation-5-Imperatives.pdf>.
- Cooper, Z., Craig, S., Gaynor, M., and Van Reenen, J. (2019). The price ain’t right? Hospital prices and health spending on the privately insured. *Quarterly Journal of Economics*, 134(1):51–107.
- Cooper, Z., Gibbons, S., Jones, S., and McGuire, A. (2011). Does hospital competition save lives? evidence from the English NHS patient choice reforms. *The Economic Journal*, 121(554):F228–F260.
- Cooper, Z. and Scott Morton, F. (2016). Out-of-network emergency-physician bills – An unwelcome surprise. *New England Journal of Medicine*, 375(20):1915–1918.
- Currie, J., Farsi, and Macleod, W. B. (2005). Cut to the bone? Hospital takeovers and nurse employment contracts. *ILR Review*, 58(3):471–493.
- Currie, J. and Madrian, B. (2000). Health, health insurance, and the labor market. In Ashenfelter, O. and Card, D., editors, *Handbook of Labor Economics*, pages 3309–3416. Elsevier Science, Amsterdam.

- Cutler, D. (2010). Where are the health care entrepreneurs? The failure of organizational innovation in health care. *Innovation Policy and the Economy*, 11(1):1 – 28. <http://www.journals.uchicago.edu/doi/10.1086/655816>.
- Cutler, D. M., Huckman, R. S., and Kolstad, J. T. (2010). Input constraints and the efficiency of entry: Lessons from cardiac surgery. *American Economic Journal: Economic Policy*, 2(1):51–76.
- Cutler, D. M. and Scott Morton, F. (2013). Hospitals, market share, and consolidation. *JAMA*, 310(18):1964–1970. <http://jamanetwork.com/journals/jama/article-abstract/1769891>.
- Dafny, L. (2009). Estimation and identification of merger effects: An application to hospital mergers. *Journal of Law and Economics*, 52(3):pp. 523–550.
- Dafny, L. (2010). Are health insurance markets competitive? *American Economic Review*, 100:1399–1431.
- Dafny, L. (2015). Evaluating the impact of health insurance industry consolidation: Learning from experience. Issue brief, The Commonwealth Fund, New York, NY.
- Dafny, L., Duggan, M., and Ramanarayanan, S. (2012). Paying a premium on your premium? Consolidation in the U.S. health insurance industry. *American Economic Review*, 102(2):1161–1185.
- Dafny, L., Gruber, J., and Ody, C. (2015). More insurers lower premiums: Evidence from initial pricing in the health insurance marketplaces. *American Journal of Health Economics*, 1(1):53–81.
- Dafny, L., Ho, K., and Lee, R. (2019). The price effects of cross-market mergers: Theory and evidence from the hospital industry. *RAND Journal of Economics*, forthcoming. (manuscript available at <http://www.columbia.edu/~kh2214/papers/DafnyHoLee062717.pdf>).
- Desai, S. and McWilliams, J. M. (2018). Consequences of the 340b drug pricing program. *New England Journal of Medicine*, 378(6):539–548.
- Dranove, D. D. and Satterthwaite, M. A. (2000). The industrial organization of health care markets. In Culyer, A. and Newhouse, J., editors, *Handbook of Health Economics*, chapter 20, pages 1094–1139. Elsevier Science, North-Holland, New York and Oxford.
- Dunn, A. and Shapiro, A. (2014). Do physicians possess market power? *Journal of Law and Economics*, 57(1):159–193.
- Eisenberg, M. (2011). Reimbursement rates and physician participation in Medicare. unpublished manuscript, Carnegie Mellon University.

- Emanuel, E. and Fuchs, V. R. (2008). Who really pays for health care? The myth of “shared responsibility”. *Journal of the American Medical Association*, 299(9):1057–1059.
- Federal Trade Commission and Department of Justice (1992). Horizontal merger guidelines. Issued April 2, 1992, Revised September, 2010.
- Forlines, G. (2018). Drivers of physician-hospital integration: The role of Medicare reimbursement. unpublished manuscript, https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1034&context=economics_etds.
- Fulton, B. D. (2017). Health care market concentration trends in the United States: Evidence and policy responses. *Health Affairs*, 36(9):1530–1538.
- Garmon, C. and Chartock, B. (2017). One in five inpatient emergency department cases may lead to surprise bills. *Health Affairs*, 36(1):177–181.
- Gaynor, M., Ho, K., and Town, R. J. (2015). The industrial organization of health care markets. *Journal of Economic Literature*, 53(2):235–284.
- Gaynor, M., Moreno-Serra, R., and Propper, C. (2013). Death by market power: Reform, competition and patient outcomes in the National Health Service. *American Economic Journal: Economic Policy*, 5(4):134–166.
- Gaynor, M., Mostashari, F., and Ginsburg, P. B. (2017). Making health care markets work: Competition policy for health care. White paper, Heinz College, Carnegie Mellon; Brookings Institution; Robert Wood Johnson Foundation. available at <http://www.brookings.edu>.
- Gaynor, M. and Town, R. J. (2012a). Competition in health care markets. In McGuire, T. G., Pauly, M. V., and Pita Barros, P., editors, *Handbook of Health Economics*, volume 2, chapter 9. Elsevier North-Holland, Amsterdam and London.
- Gaynor, M. and Town, R. J. (2012b). The impact of hospital consolidation: Update. The Synthesis Project, Policy Brief No. 9, The Robert Wood Johnson Foundation, Princeton, NJ.
- Gaynor, M. and Vogt, W. (2003). Competition among hospitals. *RAND Journal of Economics*, 34:764–785.
- Gaynor, M. and Vogt, W. B. (2000). Antitrust and competition in health care markets. In Culyer, A. and Newhouse, J., editors, *Handbook of Health Economics*, chapter 27, pages 1405–1487. Elsevier Science, North-Holland, New York and Oxford.
- Gee, E. and Gurwitz, E. (2018). Provider consolidation drives up health care costs: Policy recommendations to curb abuses of market power and protect patients. Technical report, Center for American Progress, Washington,

- DC. <https://www.americanprogress.org/issues/healthcare/reports/2018/12/05/461780/provider-consolidation-drives-health-care-costs/>.
- Goldsmith, J., Burns, L. R., Sen, A., and Goldsmith, T. (2015). Integrated delivery networks: In search of benefits and market effects. Report, National Academy of Social Insurance, Washington, DC.
- Gowrisankaran, G., Nevo, A., and Town, R. J. (2015). Mergers when prices are negotiated: Evidence from the hospital industry. *American Economic Review*, 105(1):172–203.
- Gruber, J. (1994). The incidence of mandated maternity benefits. *American Economic Review*, 84:622–641.
- Guardado, J., Emmons, D., and Kane, C. (2013). The price effects of a large merger of health insurers: A case study of UnitedHealth-Sierra. *Health Management, Policy and Innovation*.
- Haas, S., Gawande, A., and Reynolds, M. E. (2018). The risks to patient safety from health system expansions. *JAMA*, 319(17):1765–1766.
- Haas-Wilson, D. and Garmon, C. (2011). Hospital mergers and competitive effects: Two retrospective analyses. *International Journal of the Economics of Business*, 18(1):17–32.
- Hayford, T. B. (2012). The impact of hospital mergers on treatment intensity and health outcomes. *Health Services Research*, 47(3pt1):1008–1029.
- Henry J. Kaiser Family Foundation (2018). 2018 employer health benefits survey. Internet. <http://ehbs.kff.org/>.
- Herzlinger, R. (2006). Why innovation in health care is so hard. *Harvard Business Review*. <https://hbr.org/2006/05/why-innovation-in-health-care-is-so-hard>.
- Ho, K. and Lee, R. S. (2017). Insurer competition in health care markets. *Econometrica*, 85(2):379–417.
- Institute of Medicine (2001). *Crossing the Quality Chasm: A New Health System for the Twenty-First Century*. National Academy Press, Washington, D.C.
- Kane, C. K. (2017). Updated data on physician practice arrangements: Physician ownership drops below 50 percent. Policy research perspectives., American Medical Association, Chicago, IL.
- Kaufman Hall (2019). 2018 in review: The year M&A shook the health-care landscape. <https://www.kaufmanhall.com/ideas-resources/research-report/2018-ma-review-new-healthcare-landscape-takes-shape>.

- Kessler, D. and McClellan, M. (2000). Is hospital competition socially wasteful? *Quarterly Journal of Economics*, 115(2):577–615.
- Kliff, S. (2019). A \$20,243 bike crash: Zuckerberg hospital’s aggressive tactics leave patients with big bills. Vox. <https://www.vox.com/policy-and-politics/2019/1/7/18137967/er-bills-zuckerberg-san-francisco-general-hospital>.
- Koch, T. and Ulrick, S. (2017). Price effects of a merger: Evidence from a physicians’ market. Working Paper 333, Bureau of Economics, Federal Trade Commission, Washington, DC.
- Koch, T., Wendling, B., and Wilson, N. E. (2018). Physician market structure, patient outcomes, and spending: An examination of Medicare beneficiaries. *Health Services Research*. forthcoming.
- Kohn, L., Corrigan, J., and Donaldson, M., editors (1999). *To Err is Human: Building a Safer Health System*. National Academy Press, Washington, DC.
- Krishnan, R. (2001). Market restructuring and pricing in the hospital industry. *Journal of Health Economics*, 20:213–237.
- Lewis, M. and Pflum, K. (2017). Hospital systems and bargaining power: Evidence from out-of-market acquisitions. *RAND Journal of Economics*, 48(3):579?–610.
- Martin, A., Hartman, M., Washington, B., Catlin, A., and the National Health Expenditures Team (2016). National health spending: Faster growth in 2015 as coverage expands and utilization increases. *Health Affairs*.
- Martin, A., Lassman, D., Whittle, L., and Catlin, A. (2011). Recession contributes to slowest annual rate of increase in health spending in five decades. *Health Affairs*, 30:111–122.
- Martin, A. B., Hartman, M., Washington, B., Catlin, A., and The National Health Expenditure Accounts Team (2019). National health care spending in 2017: Growth slows to post?great recession rates; share of gdp stabilizes. *Health Affairs*, 38(1):96–106.
- Mathews, A. W. and Evans, M. (2018). The hidden system that explains how your doctor makes referrals. Wall Street Journal. <https://www.wsj.com/articles/the-hidden-system-that-explains-how-your-doctor-makes-referrals-11545926166>.
- McWilliams, J. M., Chernew, M., Zaslavsky, A., Hamed, P., and Landon, B. (2013). Delivery system integration and health care spending and quality for Medicare beneficiaries. *JAMA Internal Medicine*, 173(15):1447–1456.
- Monaco, K. and Pierce, B. (2015). Compensation inequality: evidence from the national compensation survey. Monthly labor review, US Bureau of Labor Statistics, Washington, DC. <https://www.bls.gov/opub/mlr/2015/article/compensation-inequality-evidence-from-the-national-compensation-survey.htm>.

- Muhlestein, D. B. and Smith, N. J. (2016). Physician consolidation: Rapid movement from small to large group practices, 2013?15. *Health Affairs*, 35(9).
- National Academy of Social Insurance (2015). Addressing pricing power in health care markets: Principles and policy options to strengthen and shape markets. Report, National Academy of Social Insurance, Washington, DC. <https://www.nasi.org/research/2015/addressing-pricing-power-health-care-markets-principles-poli>.
- Neprash, H., Chernew, M., Hicks, A., Gibson, T., and McWilliams, J. (2015). Association of financial integration between physicians and hospitals with commercial health care prices. *JAMA Internal Medicine*, 175(12):1932–1939.
- New York State Health Foundation (2016). Why are hospital prices different? An examination of New York hospital reimbursement. Report, New York State Health Foundation, New York, NY. <http://nyshealthfoundation.org/resources-and-reports/resource/an-examination-of-new-york-hospital-reimbursement>.
- Prager, E. and Schmitt, M. (2019). Employer consolidation and wages: Evidence from hospitals. unpublished manuscript, Northwestern University, <https://sites.google.com/view/eprager/research>.
- Roberts, E., Mehotra, A., and McWilliams, J. M. (2017). High-price and low-price physician practices do not differ significantly on care quality or efficiency. *Health Affairs*, 36(5):855–864.
- Robinson, J. and Miller, K. (2014). Total expenditures per patient in hospital-owned and physician organizations in California. *JAMA*, 312(6):1663–1669.
- Romano, P. and Balan, D. (2011). A retrospective analysis of the clinical quality effects of the acquisition of Highland Park hospital by Evanston Northwestern healthcare. *International Journal of the Economics of Business*, 18(1):45–64.
- Rosenthal, E. (2017). *An American Sickness: How Healthcare became Big Business and How You Can Take it Back*. Penguin Random House, New York.
- Savage, L., Gaynor, M., and Adler-Milstein, J. (2019). Digital health data and information sharing: A new frontier for health care competition? *Antitrust Law Journal*, forthcoming.
- Scott, K. W., Orav, E. J., Cutler, D. M., and Jha, A. K. (2018). Changes in Hospital?Physician Affiliations in U.S. Hospitals. *Annals of Internal Medicine*, 168(2):156–157.
- Short, M. N. and Ho, V. (2019). Weighing the effects of vertical integration versus market concentration on hospital quality. *Medical Care Research and Review*. <https://doi.org/10.1177/1077558719828938>.

- Staiger, D., Spetz, J., and Phibbs, C. (2010). Is there monopsony in the labor market? Evidence from a natural experiment. *Journal of Labor Economics*, 28:211–236.
- Sullivan, D. (1989). Monopsony power in the market for nurses. *Journal of Law and Economics*, 32(2):pp. S135–S178.
- Tenn, S. (2011). The price effects of hospital mergers: A case study of the Sutter-Summit transaction. *International Journal of the Economics of Business*, 18(1):65–82.
- Thompson, E. (2011). The effect of hospital mergers on inpatient prices: A case study of the New Hanover-Cape Fear transaction. *International Journal of the Economics of Business*, 18(1):91–101.
- Town, R. and Vistnes, G. (2001). Hospital competition in HMO networks. *Journal of Health Economics*, 20(5):733–752.
- Tsai, T. and Jha, A. (2014). Hospital consolidation, competition, and quality: Is bigger necessarily better? *JAMA*, 312(1):29 – 30. 10.1001/jama.2014.4692.
- U.S. Census Bureau (2012). 2010 Census summary file 1: Technical documentation. Technical report, U.S. Census Bureau, Department of Commerce, Washington, DC. <https://www.census.gov/prod/cen2010/doc/sf1.pdf#page=619>.
- Venkatesh, S. (2019). The impact of hospital acquisition on physician referrals. unpublished manuscript, Carnegie Mellon University.
- Vita, M. and Sacher, S. (2001). The competitive effects of not-for-profit hospital mergers: A case study. *Journal of Industrial Economics*, 49(1):63–84.
- Vogt, W. and Town, R. (2006). How has hospital consolidation affected the price and quality of hospital care? *Robert Wood Johnson Foundation*, pages 1–27. Policy Brief No. 9.
- Walden, E. (2017). Can hospitals buy referrals? the impact of physician group acquisitions on market-wide referral patterns. unpublished manuscript, https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=IIOC2018&paper_id=459.
- Wollmann, T. (2018). Stealth consolidation: Evidence from an amendment to the Hart-Scott-Rodino act. *American Economic Review: Insights*, forthcoming.

Figure 1: Growth in Health Insurance Premiums, Workers' Contributions to Premiums, Wages, and Inflation (Source: Kaiser Family Foundation)

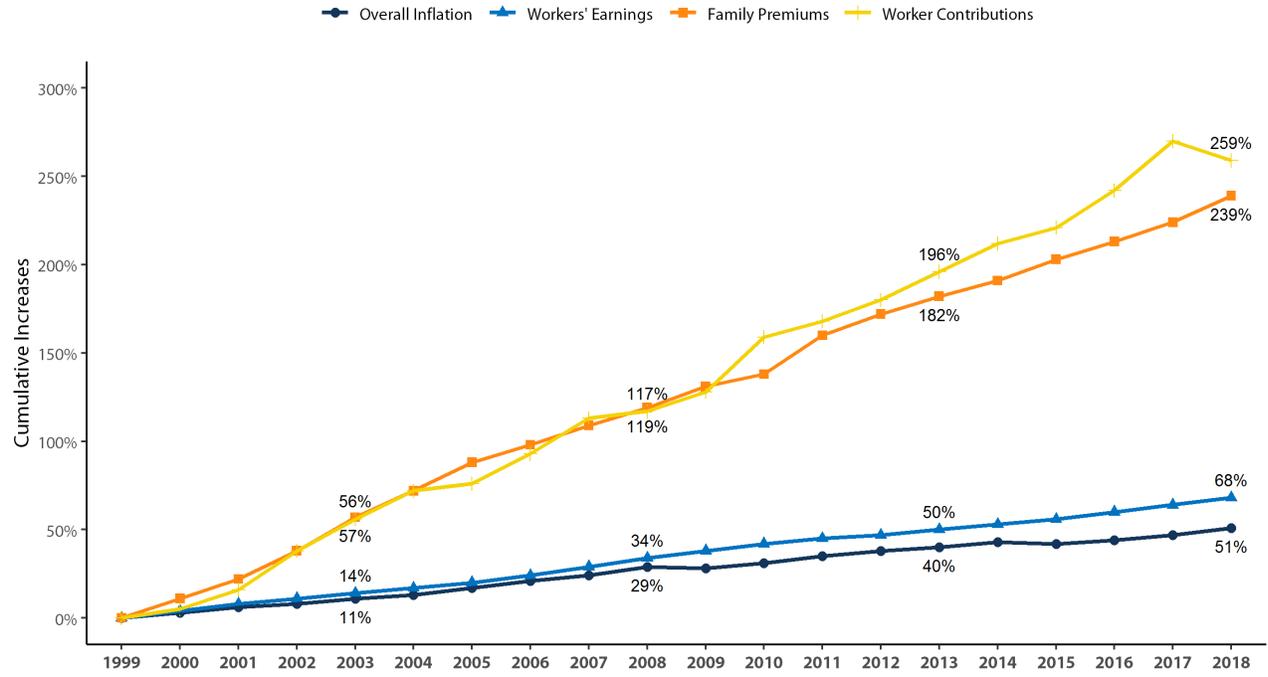
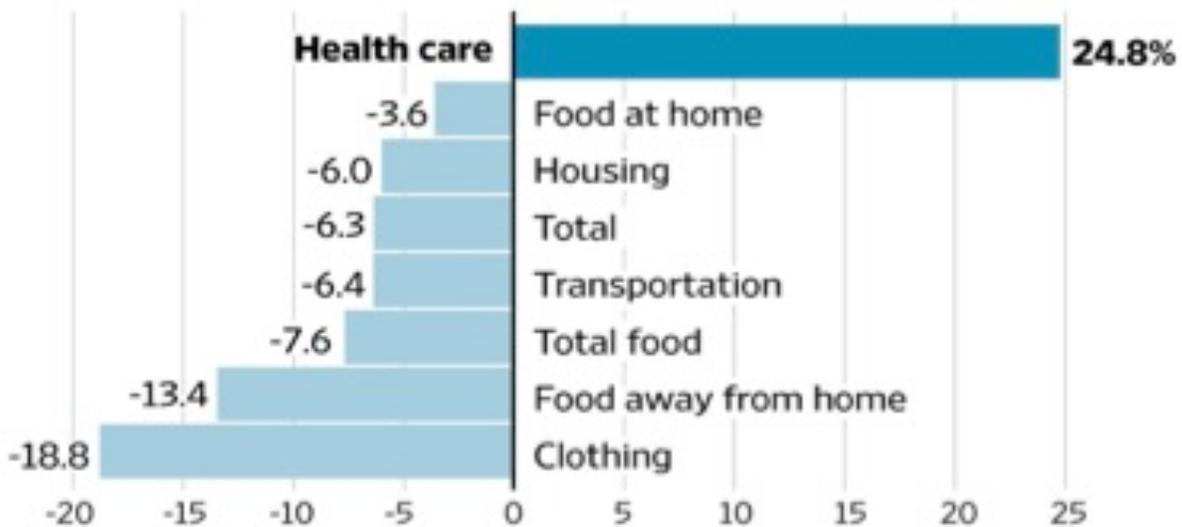


Figure 2: Change in Household Spending on Health Care and Other Basics

A Bigger Bite

Middle-class families' spending on health care has increased 25% since 2007. Other basic needs, such as clothing and food, have decreased.

Percent change in middle-income households' spending on basic needs (2007 to 2014)



Sources: Brookings Institution analysis of Consumer Expenditure Survey, Labor Department
THE WALL STREET JOURNAL.

Figure 3: Number of Hospital Mergers, 1998-2017 (Source: American Hospital Association)

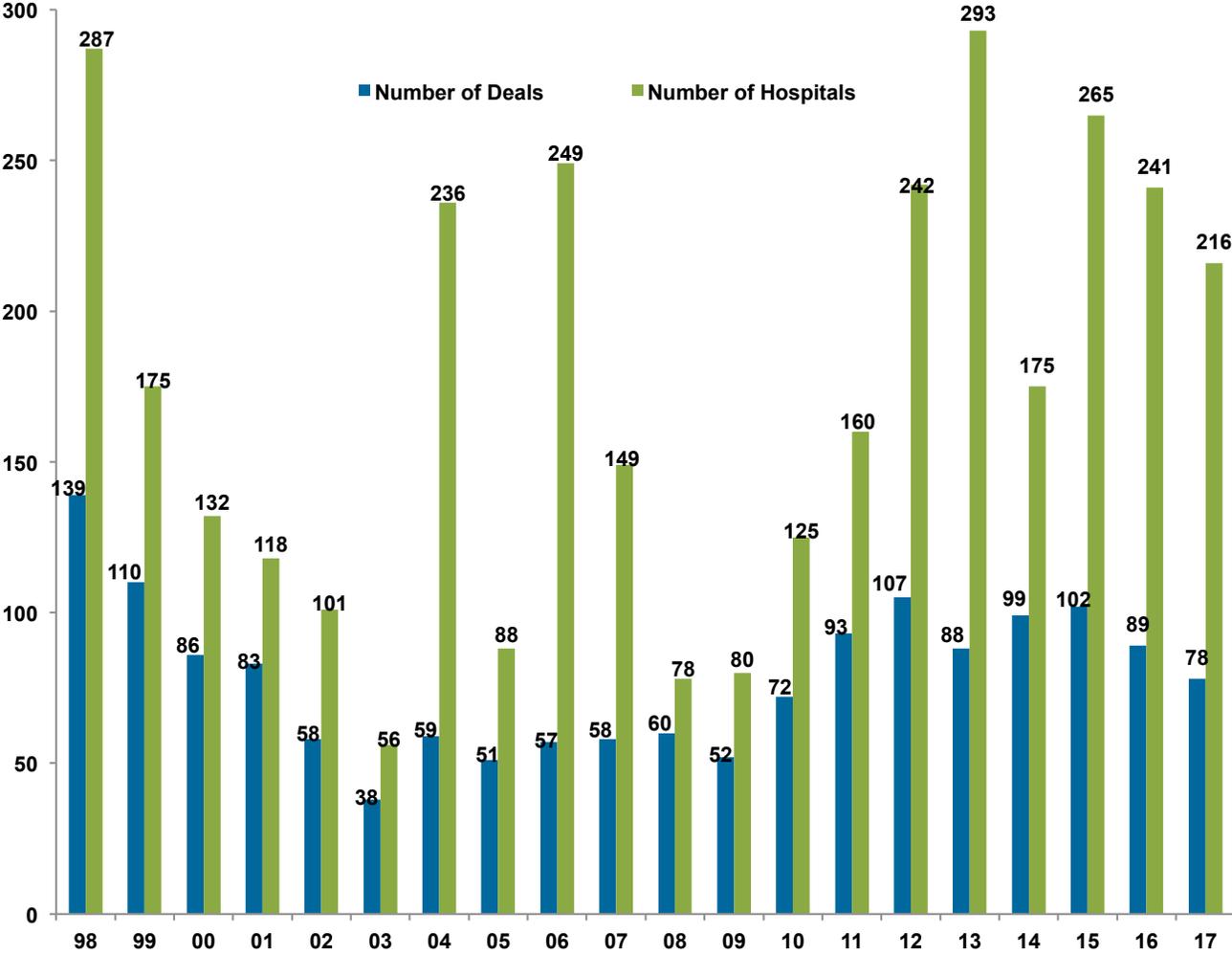


Figure 4: Percent of Mergers Between Hospitals in Same Area, 2010-2012 (Source: [Dafny et al., 2019](#))

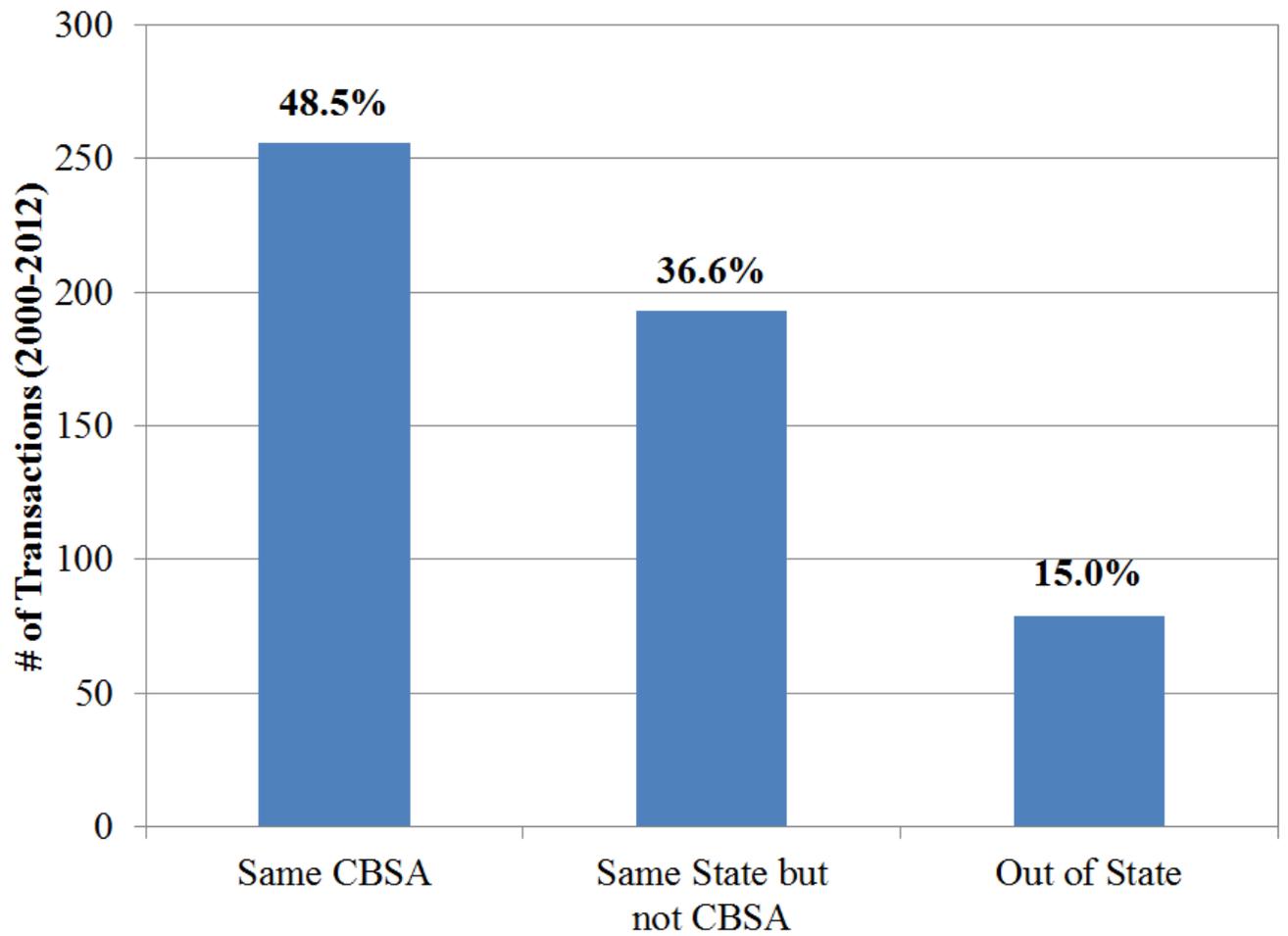


Figure 5: Market Concentration (HHI) for hospitals, physicians, and insurers, 2010-2016
(Source: [Fulton \(2017\)](#))

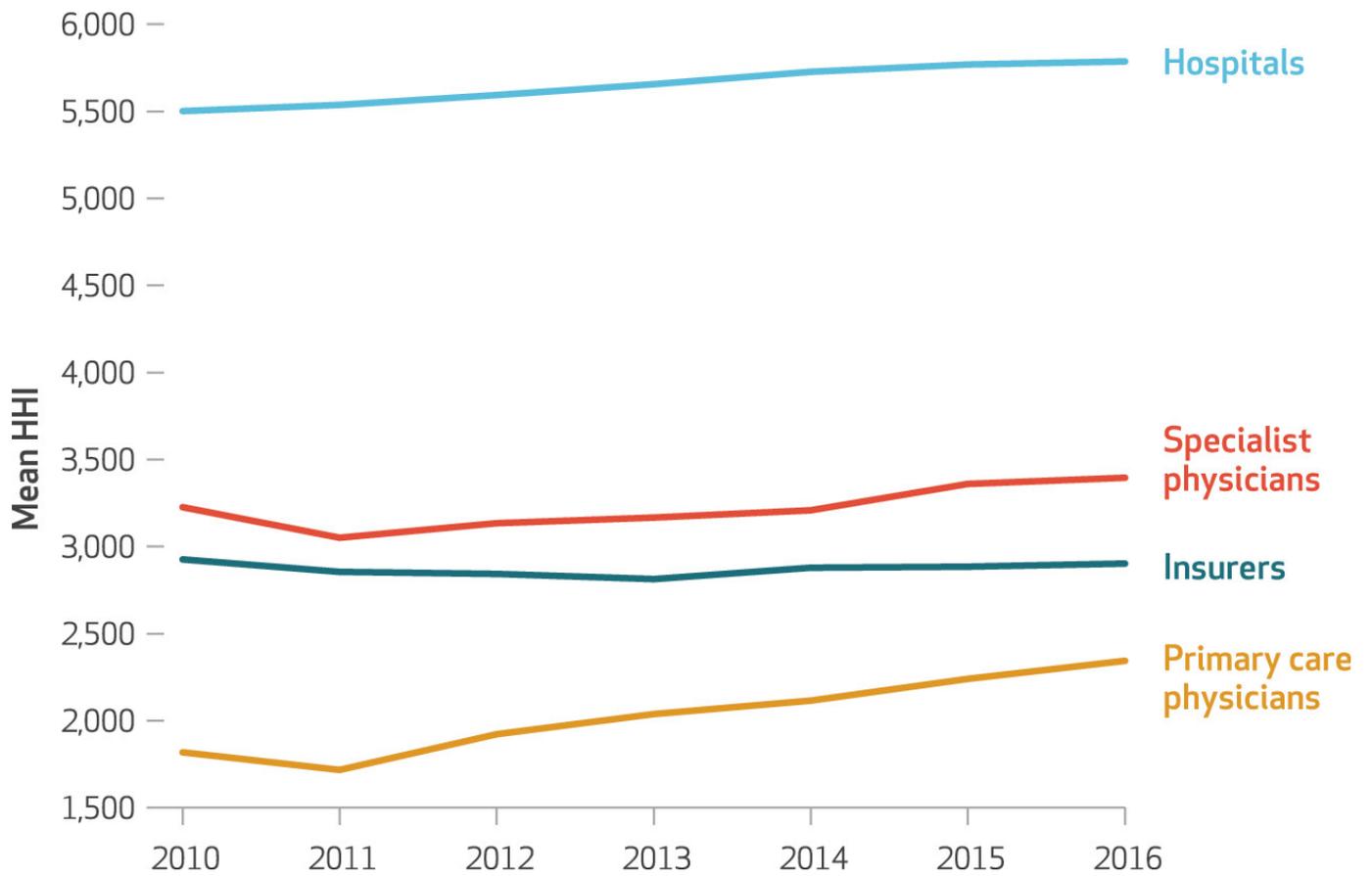


Figure 6: Market Share of Top 4 Insurers, Fully-Insured Commercial (Source: Courtesy Prof. Leemore Dafny)

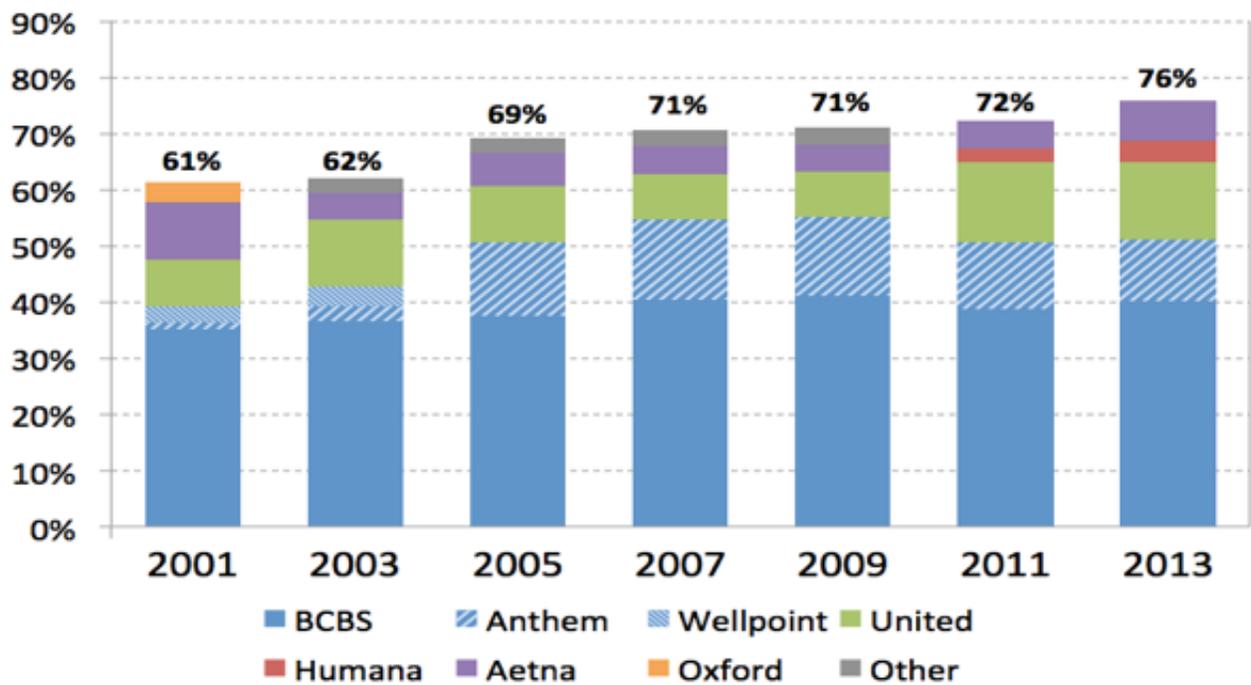


Figure 7: Market Share of Top 2 Insurers, Self and Full Insurance, State and MSA (Source: Courtesy Prof. Leemore Dafny)

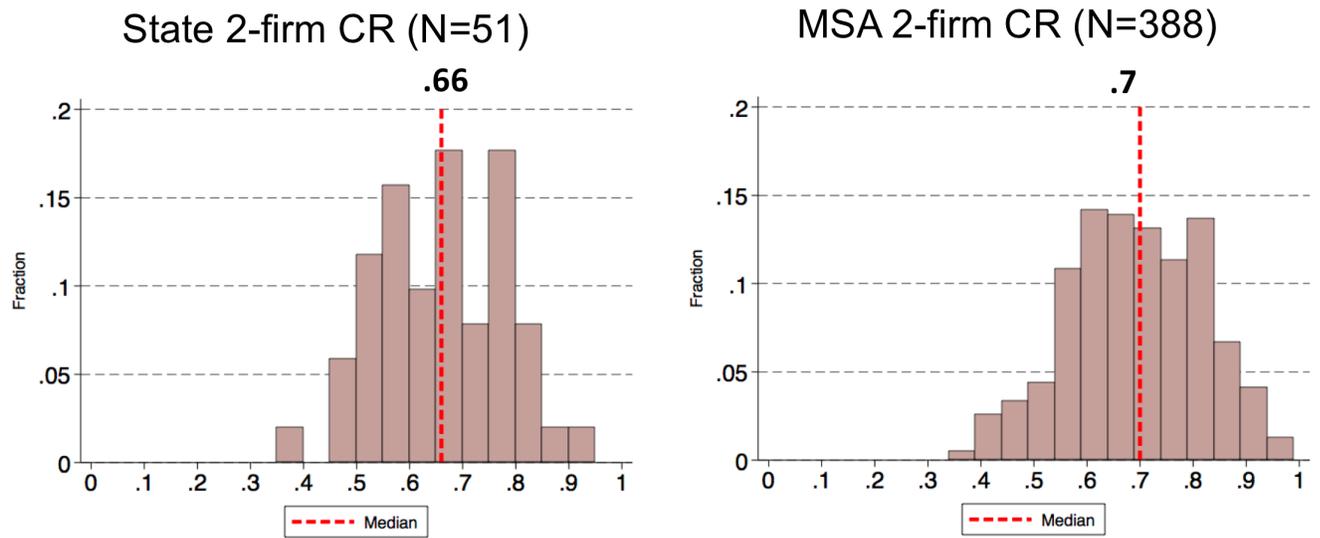


Figure 8: Price Effects of Orthopedic Practice Merger in Pennsylvania (Source: Koch and Ulrick, 2017)

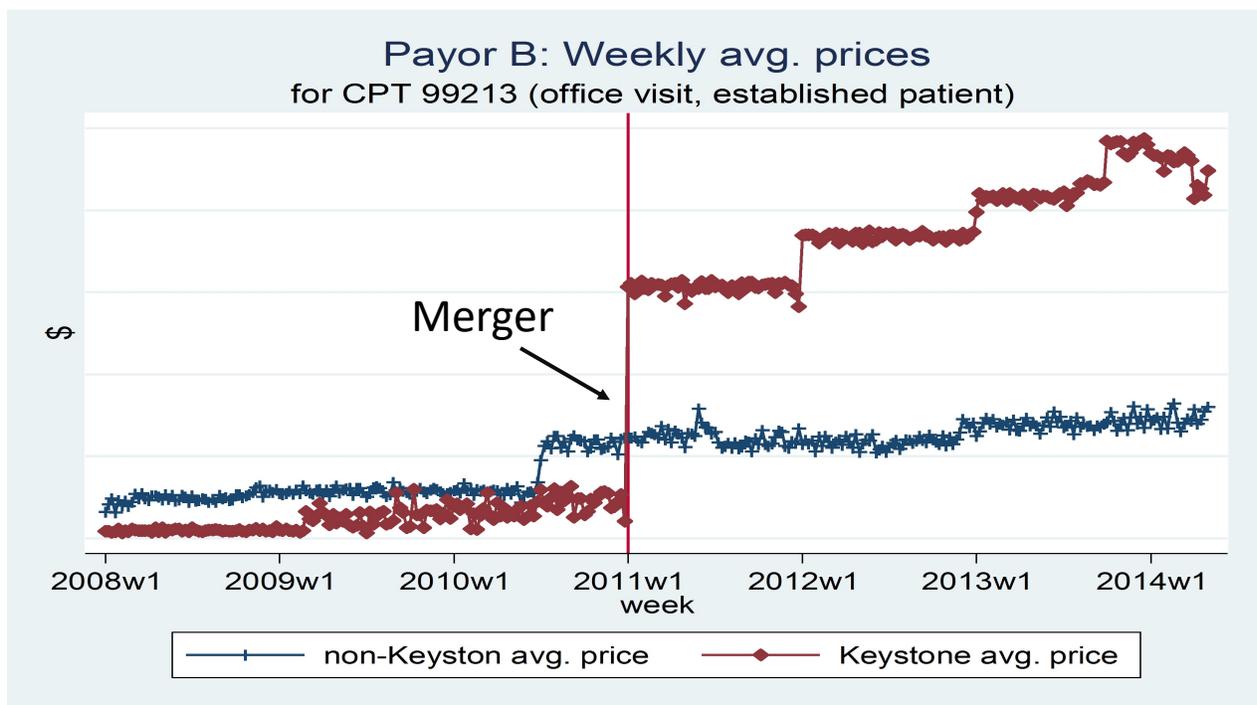


Figure 9: Effects on Physician Referrals of Hospital Practice Acquisitions and Divestitures (Sources: Venkatesh, 2019; Mathews and Evans, 2018)

Probability of referrals to hospital employer before and after hospitals acquire or divest doctors

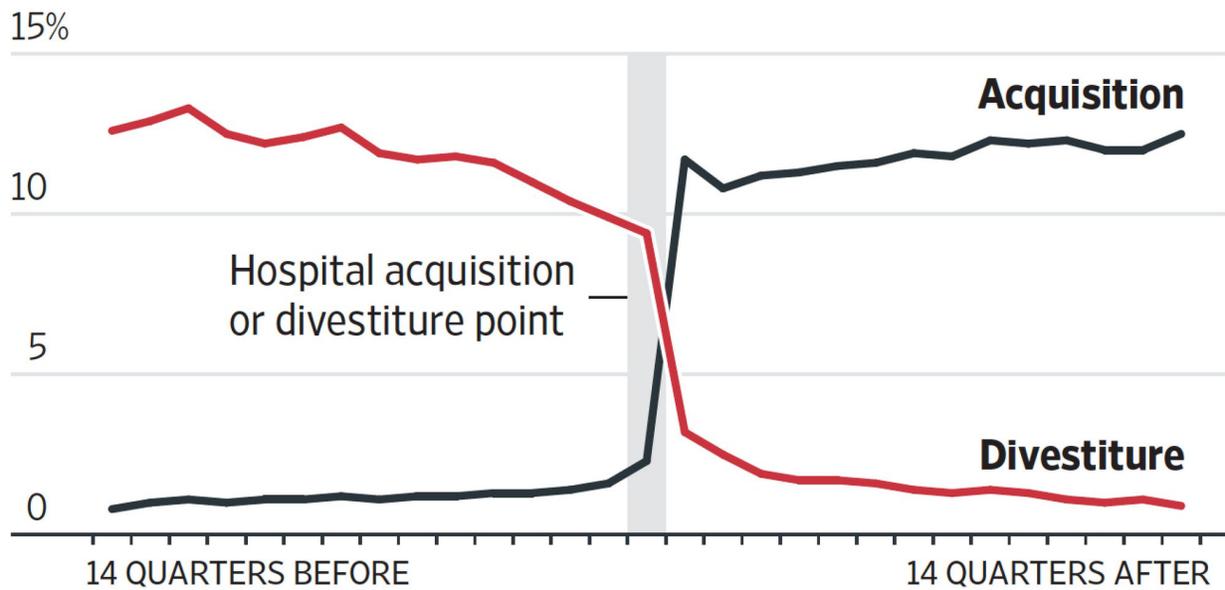


Figure 10: DOJ, FTC Appropriations vs. Merger Filings, 2010-2016
(Source: Courtesy Michael Kades, Washington Center for Equitable Growth, <https://equitablegrowth.org/presentation-merger-enforcement-statistics/>)

