



February 10, 2016

Green Mountain Care Board
89 Main Street, Third Floor, City Center
Montpelier, Vermont 05620

VIA E-mail: GMCB.Board@vermont.gov

RE: Public Comment – FY '17 Hospital Budget Policy for Physician Transfer and/or Acquisitions

Dear Green Mountain Care Board Members,

The draft of the GMCB_Hospital_Budget_Guidance_FY17 raises some important questions around hospital acquisition of independent physician practices and the impact of that activity on total system costs. Specifically, the document suggest that "practices moving into the hospitals . . . may be, in whole or part, a simple transfer of dollars within the greater system."

I am writing today to provide the board with evidence that hospital acquisition of physician practices *is not* simply a transfer of like dollars, but, in fact, increases total system costs. This documentation comes from (1) recent national studies examining the trend of hospitals employing physician practices, (2) from Vermont independent physicians who have been offered hospital employment, and (3) from a review of the median prices paid by Vermont's largest commercial insurer to independent versus UVM Health Network-employed physicians for providing exactly the same service, per CPT code identifier. All of this evidence indicates that when independent physicians become employed, their new employer, the hospital, charges more for their services than those physicians were able to charge as independents, thus increasing total system costs.

Along with this letter, I am citing the text of recent studies that support the conclusion that hospital acquisition of independent medical practices increases overall health care costs.¹ Following are some of the conclusions found:

¹ Gaynor, M, Town, R. The Impact of Hospital Consolidation – Update, June 2015. Robert Wood Johnson Foundation - The Synthesis Project. Available at: http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2012/rwjf73261. Accessed February 1, 2016.

Neprash HT, Chernew ME, Hicks AL, Gibson T, McWilliams M. Association of Financial Integration Between Physicians and Hospitals. *JAMA Internal Medicine*. 2015. Available at: <http://archinte.jamanetwork.com/article.aspx?articleid=2463591>. Accessed February 1, 2016.

Reschovsky, JD, Rich, E. Hospital Acquisition of Physician Groups On the Road to Value-Based or Higher-Priced Care? *JAMA Internal Medicine*. 2015. Available at: <http://archinte.jamanetwork.com/article.aspx?articleid=2463588>. Accessed February 1, 2016.

- From the Robert Wood Johnson Foundation: Physician-hospital consolidation has not led to either improved quality or reduced costs. Studies find that consolidation was primarily for the purpose of enhanced bargaining power with payers.¹
- From the Journal of American Medicine-Internal Medicine: In a national study of 240 markets, researchers found that in a community where physician-hospital integration increased by about five percentage points from 2008-2012, overall outpatient spending would be about \$75 higher a year, per insured consumer, or about 3.1% higher. For a particular individual whose doctor's practice was acquired by a hospital, the increase would be far sharper, estimated at around \$1,400.²
- From a Federal Trade Commission court case reported in *Medscape*: In 2014, the AGs of California, Illinois, Pennsylvania, and 13 other states filed a friend of the court brief in a federal appellate case in Idaho, stating that they have seen firsthand the effects of hospitals acquiring physician practices, namely, increased bargaining power with health insurers, higher hospital facility fees for physician services, and loss of referrals to rival hospitals. These developments, the AGs wrote, have all led to higher prices for insurers, resulting in consumers paying higher premiums, deductibles, and co-pays.¹
- From the U.S. Government Accountability Office: Under Medicare's payment policy, Medicare's total payment rate is higher when an E/M office visit is provided in a hospital outpatient department (HOPD) rather than in a physician office. Our findings suggest that providers responded to this financial incentive: E/M office visits were more frequently performed in HOPDs in counties with higher levels of vertical consolidation. In order to prevent the shift of services from physician offices to HOPDs from increasing costs for the Medicare program and beneficiaries, Congress should consider directing the Secretary of Health and Human Services to equalize payment rates between settings for E/M office visits.¹

Capps C, Dranove D, Ody C. The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending. *Institute for Policy Research Northwestern University* 2015. Available at: <http://www.ipr.northwestern.edu/publications/docs/workingpapers/2015/ipr-wp-15-02.pdf>. Accessed February 1, 2016.

Medicare: Increasing Hospital-Physician Consolidation Highlights Need for Payment Reform. *U.S. Government Accountability Office* 2015. Available at: <http://www.gao.gov/assets/680/674347.pdf>. Accessed February 1, 2016.

Lowes R. Hospital-Employed Physicians Drive Up Costs, Say 16 States. *Medscape* 2014. Available at: <http://www.medscape.com/viewarticle/830845>. Accessed February 1, 2016.

Sanger-Katz M. When Hospitals Buy Doctors' Offices, and Patient Fees Soar. *The New York Times* 2015. Available at: <http://www.nytimes.com/2015/02/07/upshot/medicare-proposal-would-even-out-doctors-pay.html>. Accessed February 1, 2016.

Brill J. Competition in Health Care Markets. *Federal Trade Commission* 2014. Available at: https://www.ftc.gov/system/files/documents/public_statements/314861/140609halwhite.pdf. Accessed February 1, 2016.

² Outpatient Medical Care Prices Are Rising, Study Shows. *Wall Street Journal* 2015. Available at: <http://www.wsj.com/articles/new-study-on-hospitals-acquiring-doctor-practices-seen-fueling-debate-1445266894>. Accessed February 1, 2016.

Data from Vermont align with findings in national studies, which show higher prices for patients and insurers when physicians are employed by hospitals and health systems. Data taken from BCBS of Vermont's member website in 2014 show that independent physicians are paid 225% to 275% less than the largest hospital system is for common primary care and specialty care services. This means that commercially insured patients of the independent orthopedic surgery practice in Chittenden County – which is scheduled to be acquired by UVM Health Network on April 1, 2016 – will see their insurance paying more than twice as much per visit after the practice is acquired for the exact same services. The 15-minute office visit that used to cost \$75 will cost \$177³, even though patients will be seeing the same doctor, in the same office, for the same amount of time. There will also be the possibility of a facility fee, which is a separate charge that some hospitals charge commercial insurers for services provided by physicians in the hospital network. Often, this fee is twice the amount of the charge for seeing the physician. ⁴

The differences in payments from public and private insurers provide an incentive for a hospital system to acquire physician practices in order to apply their higher fee schedules and gain increased revenue for the services provided. The incentive for the physicians to join the hospital is that they can receive about the same amount in yearly compensation, perhaps a little more or less, along with the assurance that their salaries are guaranteed rather than subject to their own ability to manage expenses and a practice budget. The enclosed letter from Dr. Greg McCormick of Vermont Ophthalmic Consultants, outlines these elements based on his own practice's negotiations with Fletcher Allen several years ago. He also explains his own financial consultant's estimates that new overall charges to the system would be over \$1M if his practice was acquired.

Over the past five years, the UVM Health Network, which grew out of a merger between Fletcher Allen and Central Vermont Medical Center in 2011, has acquired at least 10 independent medical practices and employed more than 25 formerly independent physicians in the Champlain Valley and central Vermont. Recognizing the potentially harmful effects of hospital mergers and the employment of independent physicians on individual and statewide health care costs, other states have set restrictions on hospital systems' actions post-merger to limit their ability to raise prices and acquire more physician practices.

Before Massachusetts allowed its largest hospital system, Partners Healthcare, to acquire another community hospital in 2014, the attorney general forced the hospital to sign a deal limiting the number of independent practices it could acquire and capping future price increases at the rate of

³ Data from "Detailed Price Report By Code" for an independent orthopedic surgeon at Associates in Orthopaedic Surgery versus a UVMMC-employed orthopedic surgeon from BCBSVT member website Dec 2014. See more reference prices in HealthFirst's Physician Practices Reimbursement Report. Available at: www.leg.state.vt.us/jfo/healthcare/Health%20Reform%20Oversight%20Committee/2015_01_06/2015_01_06_Physician%20Practices%20Report%20-%20Healthfirst%20presents.pdf.

⁴ Recent EOBs (Explanations of Benefits) obtained by HealthFirst from patients show UVMMC charging a facility of 2.2 times the physician visit fee for a visit with a hospital-employed cardiologist.

inflation.⁵ Similarly, in West Virginia, which is, like Vermont, a largely rural state, when two large hospitals attempted to merge in 2015, they were required to sign a public agreement with the attorney general's office promising to release physicians from anti-competition clauses and to not oppose any applications for others seeking to open competing health care facilities in the area.⁶

Last year, the Vermont Legislature passed Act 54, which calls on private health insurers to submit plans to the GMCB to normalize payment rates to hospitals and independent physicians for providing the same services. If these plans are actually implemented on January 1, 2017, part of the current financial incentive for hospitals to acquire independent practices will be removed. Here, Vermont would be taking a positive step forward while also following the lead of the federal Medicare program, whose approved 2017 budget calls for equal payments to hospital-employed and independent practices for providing the same outpatient physician services.⁷

I urge the GMCB to review the evidence provided here and to reconsider the notion that hospital acquisition of physician practices is "a simple transfer of dollars within greater system." Empirical evidence indicates that this is untrue when hospitals are paid more by private and public payers for providing the same services.

Sincerely,



Amy Cooper
Executive Director, HealthFirst

⁵ AG Final Resolution with Partners. *Attorney General of Massachusetts* 2014. Available at: <http://www.mass.gov/ago/news-and-updates/press-releases/2014/2014-06-24-partners-settlement.html>. Accessed February 1, 2016.

⁶ AG Announces Antitrust Agreement in Cabell Huntington Hospital, St. Mary's Medical Center Acquisition. *Office of the WV Attorney General Patrick Morrissey* 2015. Available at: <http://www.ago.wv.gov/pressroom/2015/pages/ag-patrick-morrissey-announces-antitrust-agreement-in-cabell-huntington-hospital-st-mary-s-medical-center-aquisition.aspx>. Accessed February 1, 2016.

⁷ Obama signs budget deal that cuts hospital payments. Here's what you need to know. *The Advisory Board Daily Briefing* 2015. Available at: <https://www.advisory.com/daily-briefing/2015/11/03/obama-signs-budget-deal-that-cuts-hospital-payments>. Accessed February 1, 2016.

Sanger-katz M. Prices Are Higher When Hospitals Buy Doctors' Practices. That's Set to Change. *The New York Times* 2015. Available at: <http://www.nytimes.com/2015/10/29/upshot/doctors-who-work-for-hospitals-charge-more-thats-set-to-change.html>. Accessed February 1, 2016.

02/07/2016

Dear Members of the Green Mountain Care Board,

I am an ophthalmologist at Ophthalmic Consultants of VT and I do most of my surgery at the private ambulatory surgery center. Like other private groups, we have worked hard to optimize our efficiency as payments have been cut. We have strived to find ways to get more work out of ourselves every day by improving efficiencies, delegating appropriately, and just working that much harder. But like many practices, we have faced the challenges of working independently as we have watched many of our colleagues close their doors and transition to hospital employment.

Several years ago, we decided we needed to reconsider the viability of independent practice in Vermont. Our equipment is expensive, our practice loans require personal guarantees, and if there were a chance we could go out of business, we'd better roll into the fold of the hospital system before we risk personal bankruptcy. We met with leadership at Fletcher Allen. They were interested in owning our practice. They could buy our equipment at fair market value (rather than the liquidation prices it would go for if we closed our doors without a buyer.) They were in a position to offer us equal pay as we make on our own. We would continue with the same staff and work in the same office. But... due to differences in facility fees and negotiated rates with payers, the total cost per year to our patients and insurance companies, according to our consultants, would be higher by at least \$1 million per year, for the same services, if we were hospital employed compared with if we remained independent and offered our services through private facilities.

Our decision to remain independent wasn't an easy one. We wanted to continue to offer low cost, high quality care but we also knew that doing so exposed us to significant personal risk. A few years ago, we prepared a CON application to open surgical suites connected to our practice. I imagine you won't be surprised to know that it took our group hundreds of hours of personal effort and a six figure financial investment in consultants, architects and designers to prepare our CON application. In the 11th hour our developer told us that we needed to get approval from another client of theirs, Fletcher Allen, in order to submit the CON we had worked so long to prepare. As you might imagine, Fletcher Allen told the developer that they opposed building our facility and the developer pulled the plug on the project. Our real estate deal was derailed, resulting in our inability to submit a complete CON application.

It was shortly after this that we met with Fletcher Allen and considered employment. After all, we thought, maybe it isn't possible to stop the shift towards large, overpriced institutions. Maybe we should give up. In the end, we decided we needed to have faith that doing the right thing wouldn't be the wrong choice. So we stuck to our plan, and now can offer our patients those high quality services at much lower costs. In a single day at the other surgical facility we now

use, I can perform more than twice as many surgeries as I was ever able to do at Fletcher Allen, at a Medicare reimbursement rate of approximately 55% of the reimbursement for the same procedure performed at the hospital. Similarly, in my office I am able to see more patients, with shorter wait times, than would have been possible with the Fletcher Allen system. So, we are making it work, for now, unlike so many doctors who had to give up and have become employed.

It is my understanding that 60-70 percent of doctors in VT are employed by hospitals compared with perhaps half that number over a decade ago, which has undeniably resulted in a huge cost increase without changing services. There seems to be a common misconception that this reflects a series of personal choices made by physicians that shouldn't be a primary concern for government. In my own experience speaking with doctors who made that switch, it was not because they preferred the employment model, it was because they felt the finances of independent practice were unsustainable. So, it is my impression that over the last decade, if financial viability of independent practice in VT had been better, then there would currently be a much larger percentage of private doctors offering much lower cost health care in Vermont.

My question is how do we get the balance back to the right place? How do we allow viable opportunities for doctors who don't want to work for large institutions, who are willing to take on small business risk, to go back into practice on their own? If, over the next decade, some VT doctors gradually transition back to the more cost effective, independent doctor dominated model of health care, then many of the problems of rising health care costs will resolve on their own. As you know, studies do not support the hypothesis that larger institutions improve patient outcomes or control costs but there are studies to support the opposite. I think it needs to be clear that payment reform won't be biased towards driving doctors into hospital employment. Unless the State and the GMCB are clear about this, doctors will continue to fear the risks of private practice in VT, and Vermonters will pay the price. Bottom line, I feel that independent practice in VT should grow in order to contain costs and optimize quality care. I do not feel that this should be in conflict with payment reform.

Thanks very much for your time and consideration. You have a tough job but certainly one of the utmost importance for Vermont. Thank you for all of your efforts.

Sincerely,



Greg McCormick, MD
Ophthalmic Consultants of Vermont

References

The following reference materials are in footnote order.

In the electronic file, items are bookmarked.

1. The Impact of Hospital Consolidation. *Robert Wood Johnson Foundation - The Synthesis Project*
2. Association of Financial Integration Between Physicians and Hospitals. *JAMA Internal Medicine*
3. Hospital Acquisition of Physician Groups On the Road to Value-Based or Higher-Priced Care? *JAMA Internal Medicine*
4. The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending. *Institute for Policy Research Northwestern University*
5. Medicare: Increasing Hospital-Physician Consolidation Highlights Need for Payment Reform. *U.S. Government Accountability Office*
6. Hospital-Employed Physicians Drive Up Costs, Say 16 States. *Medscape*
7. When Hospitals Buy Doctors' Offices, and Patient Fees Soar. *The New York Times*
8. Competition in Health Care Markets. *Julie Brill, Commissioner, Federal Trade Commission*
9. Outpatient Medical Care Prices Are Rising, Study Shows. *Wall Street Journal*
10. Physician Practices Reimbursement Report. *Amy Cooper, HealthFirst*
11. Final Resolution with Partners Would Alter Providers' Negotiating Power, Restrict Growth and Health Costs. *Attorney General of Massachusetts*
12. AG Announces Antitrust Agreement in Cabell Huntington Hospital, St. Mary's Medical Center Acquisition. *Attorney General of West Virginia*
13. Obama signs budget deal that cuts hospital payments. Here's what you need to know. *The Advisory Board Daily Briefing*
14. Prices Are Higher When Hospitals Buy Doctors' Practices. That's Set to Change. *The New York Times*



The impact of hospital consolidation — Update

By Martin Gaynor, PhD¹ and Robert Town, PhD²

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² The Wharton School, University of Pennsylvania

SUMMARY OF KEY FINDINGS

- > **Hospital consolidation generally results in higher prices.** This is true across geographic markets and different data sources. When hospitals merge in already concentrated markets, the price increase can be dramatic, often exceeding 20 percent.
- > **Hospital competition improves quality of care.** This is true under both administered price systems, such as Medicare and the English National Health Service, and market determined pricing such as the private health insurance market. The evidence is more mixed from studies of market determined systems, however.
- > **Physician-hospital consolidation has not led to either improved quality or reduced costs.** Studies find that consolidation was primarily for the purpose of enhanced bargaining power with payers, and hence did not lead to true integration. Consolidation without integration does not lead to enhanced performance.

Introduction

In 2006, the Synthesis Project published a research synthesis on the impact of hospital mergers on prices, costs and quality of care (38). Since that time, the literature has expanded a great deal. We review those subsequent findings in this Synthesis Update. In particular, we focus on the impact of hospital mergers on prices and quality, and introduce a review of the evidence on physician-hospital consolidation (absent from the 2006 synthesis). The Patient Protection and Affordable Care Act (ACA) promotes Accountable Care Organizations (ACOs) and the bundling of payments across providers for an episode of care (“bundled payments”). Both of these features of the ACA encourage consolidation between hospitals and physician practices, which in fact has recently accelerated.

What is the relationship between hospital consolidation and prices?

Increases in hospital market concentration lead to increases in the price of hospital care.¹ This finding is consistent with the conclusion of the 2006 synthesis. Since the 2006 report, several econometric studies have revisited the relationship between price and hospital concentration, using data from a variety of sources, thereby expanding the geographic scope of the evidence base. The prior evidence came almost exclusively from California. The more recent evidence comes from more states (Florida, Massachusetts) and from the entire United States (see Table 1). Ultimately, increases in health care costs (which are generally paid directly by insurers or self-insured employers) are passed on to health care consumers in the form of higher premiums, lower benefits and lower wages (see, e.g., Baicker and Chandra (4)).

Table 1: Summary of hospital concentration studies since 2006

Author/Year	Location of data	Time frame of analysis	Results
Akosa Antwi et al. (2009)	CA	1999–2005	Prices increased twofold over period and growth is highest in monopoly markets; however, changes in market concentration are not associated with differential price growth.
Dranove et al. (2008)	CA & FL	1990–2003	The association between hospital concentration and price increased during the 1990s and leveled off during the 2000s.
Melnick and Keeler (2007)	CA	1999–2003	Hospital concentration is positively associated with price growth; hospitals in large systems experienced higher price growth.
Moriya et al. (2010)	US	2001–2003	Insurer concentration is negatively associated with hospital prices; hospital price/concentration relationship is insignificant.
Wu (2008)	MA	1990–2002	Hospitals for which a rival hospital closed experienced a price increase relative to controls.

¹ Hospital concentration measures the extent to which a market is dominated by a few (or one) hospitals. All else equal, the higher the market concentration, the less vigorous is the resulting price competition. Consolidation within a market (e.g., via mergers) reduces independent market participants and by doing so increases market concentration.

Price increases exceeded 20% when mergers occurred in concentrated markets.

ANTITRUST ENFORCEMENT

In recent years, the Federal Trade Commission (FTC) has become more aggressive in challenging cases and has had dramatically more success than during the 1980s and 1990s. At the time of the 2006 synthesis, after a decade and a half long series of unsuccessful attempts to block hospital mergers, the Federal Trade Commission (FTC) had just successfully litigated its first hospital merger case. In this case, the FTC challenged a consummated merger and the court found that the merger between Evanston-Northwestern Hospital and Highland Park Hospital (both located in Evanston, Ill.) led to an increase in prices. The decision in this case is important because it established that proximate not-for-profit hospitals in urban areas can increase market power by merging. Importantly, the case also established that, post-acquisition, hospitals are willing to use their increased market power to raise prices.

The findings in the Evanston-Northwestern case gave the FTC a firm footing for litigation of hospital merger cases. Since 2006, the FTC has successfully brought suit to stop several hospital mergers. Of particular note is the ProMedica case, in which a federal judge granted the FTC an injunction in its antitrust challenge of ProMedica's acquisition of a hospital.² It is the first prospective merger court victory for the enforcement agencies in decades.³

² United States of America Federal Trade Commission Office of Administrative Law Judges, Docket No. 9346, In the Matter of ProMedica Health System, Inc., December 12, 2011 (<http://www.ftc.gov/os/adjpro/d9346/120105promedicadecision.pdf>).

³ Prospective merger analysis seeks to assess the competitive harm from a transaction principally based on information available prior to the consummation of the transaction.

Prices paid to hospitals by private health insurers within hospital markets vary dramatically (22). The evidence points to differences in hospital bargaining leverage as a principal driver of the difference between relatively expensive and inexpensive hospital systems within the same hospital market.

Some evidence suggests that growth in prices is related to market concentration. An important policy question is whether, in addition to leading to a one-time price increase, hospital mergers increase the rate of growth of hospital prices. A few studies have addressed this issue (see Table 1), with the most recent studies giving somewhat conflicting answers to this question. Melnick and Keeler find a positive correlation between price growth and market concentration (28). On the other hand, Akosa Antwi et al. find that monopoly markets experienced the highest rates of growth, but there was little relationship between changes in concentration and the growth of prices (2).

Hospital mergers in concentrated markets generally lead to significant price increases. Several studies have taken a retrospective look at the impact of recent hospital mergers on prices paid to hospitals by health insurers. This research focuses on a “case study” merger and examines the change in inpatient prices after the merger compared with a set of “control” hospitals (see Table 2). The magnitude of price increases when hospitals merge in concentrated markets is typically quite large, most exceeding 20 percent. Analyses that use data spanning large geographic regions that encompass many hospital mergers also find that, for the most part, hospital mergers in concentrated markets result in significant price increases.

Table 2: Summary of hospital merger event studies since 2006

Author/ Year	Location of mergers	Time frame of analysis	Results
Dafny (2009)	US	1999–2005	Merging hospitals had 40% higher prices than non-merging hospitals.
Haas-Wilson and Garmon (2011)	Evanston, IL Mergers of Evanston-NW & Highland Park and St. Therese & Victory Memorial	1990–2003	Post-merger, Evanston-NW hospital had 20% higher prices than control group; no price effect at St. Therese-Victory.
Tenn (2011)	SF Bay Area, CA Sutter/Summit merger	1999–2003	Summit prices increased 28.4% to 44.2% compared with control group.
Thompson (2011)	Wilmington, NC New Hanover-Cape Fear merger	2001–2003	3 of 4 insurers experienced a large price increase; 1 insurer experienced a decrease in prices.
Town et al. (2006)	US	1990–2002	Aggregate hospital merger activity increased the uninsured rate by .3 percentage points.

Hospital competition improves quality.

What is the relationship between hospital consolidation and quality?

At least for some procedures, hospital concentration reduces quality. Since the 2006 synthesis report, many new econometric studies have examined the impact of hospital competition on quality of care, using data from a variety of sources, including studies from outside the United States. The new econometric studies can be divided into two types: those that examine markets with administered prices and those that examine markets with market determined prices.

Hospital competition improves quality under an administered pricing system. Studies of the impact of competition on hospital quality under an administered price regime are based on the U.S. Medicare program and the English National Health Service (NHS), which made a transition to administered prices in a 2006 reform. The evidence presented in the 2006 synthesis was entirely from the Medicare program. The findings from those studies were mixed, but the strongest evidence was that tougher competition led to enhanced quality of care. Those results are reinforced by newer studies from the NHS, which uniformly show a positive impact of competition on the quality of care. The 2006 reform in the NHS was intended to create competition among hospitals for patients, by allowing patients to choose their hospital, while setting regulated prices in a manner very similar to the Medicare DRG-based system.⁴ The studies all show a substantial impact of the introduction of hospital competition in the NHS on reducing mortality rates (see Table 3). While it is not possible to draw direct conclusions about the United States based on evidence from the United Kingdom, these studies add to the growing evidence base that competition leads to enhanced quality under administered prices.

Table 3: Summary of hospital quality-competition studies with administered prices since 2006 (continued on next page)

Author/ Year	Location of data	Time frame of analysis	Does competition increase quality?	Results
Cooper et al. (2011)	England	2002–08	Yes	Acute myocardial infarction (AMI) mortality fell significantly faster after the reforms in less concentrated markets. This led to 300 fewer AMI deaths per year.
Gaynor et al. (2010)	England	2003–04, 2007–08	Yes	All-cause and AMI mortality fell significantly faster after the reforms in less concentrated markets. There were no effects on length of stay, expenditures or productivity. This led to 4,791 life years saved from deaths from all-causes averted, and 1,527 AMI life years saved. Benefits outweigh costs.
Bloom et al. (2010)	England	2006	Yes	Hospitals in less concentrated markets have better management, and better management leads to reduced mortality. Adding an additional hospital close by improves management quality and thereby reduces heart attack mortality by 10.7%.

⁴ The NHS reforms introduced: patient choice among hospitals, regulated prices, and performance incentives for hospital managers. Previously a local public entity selectively contracted with hospitals (often sole source) to provide care for their patients. Contract negotiations focused on price, not quality. Patients had little choice and hospital managers had little incentive to compete for patients on quality. See Cooper et al. (13), Gaynor et al. (20) for more details.

PHYSICIAN-HOSPITAL CONSOLIDATION

It is important to distinguish between consolidation and integration. Consolidation is simply bringing together two (or more) previously independent entities. Integration implies more—in particular, elimination of unnecessary duplication, creating systems to bring the previously separate entities together, and comprehensive management of the organization as a whole.

Limited data show that consolidation between physicians and hospitals is increasing. Increasing numbers of physicians are working as hospital employees and increasing numbers of physician practices are owned by hospitals. The number of physicians working as employees grew from around 31 percent in 1996–97 to 36 percent in 2004–05 (26). Another survey found that the percentage of primary care physicians employed by hospitals rose from under 20 percent in 2000 to over 30 percent in 2008 and the percentage of specialists employed by hospitals rose from just over 5 percent to 15 percent (25). The percentage of physician practices owned by hospitals rose from around 20 percent in 2002 to over 50 percent by 2008 (25). On the other hand, the percentage of hospitals with other kinds of physician-hospital relationships, such as physician hospital organizations (PHOs) and independent practice associations (IPAs), has fallen steadily from 2000 through 2010 (3).

Physician-hospital consolidation studied so far did not involve true integration.

PHYSICIAN-HOSPITAL CONSOLIDATION, CONT.

Consolidation between physicians and hospitals is of great interest both because of the potential consolidation has for creating integration, and the impetus created by the ACA's push towards creating Accountable Care Organizations (ACOs) and emphasis on bundled payments. In theory, there are substantial gains to be made from consolidation. However, there are also concerns that consolidation may have adverse impacts on competition. Consolidation can simply be an attempt by providers to enhance bargaining power vis à vis insurers.

The research evidence on physician-hospital consolidation does not find evidence supporting either clinical gains or cost reductions (9, 27). The most likely reason is that most consolidation did not lead to true integration. Evidence on this topic comes from examination of physician-hospital organizations in the 1990s. Current consolidation is too recent to allow for studies of its effects. While the successes of certain prominent integrated organizations, such as Geisinger Health System, InterMountain Healthcare, or the Mayo Clinic, are frequently mentioned as support for gains from consolidation, these are ad hoc examples, selected for their positive results. They do not constitute research evidence.

Table 3: Summary of hospital quality-competition studies with administered prices since 2006 (continued from previous page)

Author/ Year	Location of data	Time frame of analysis	Does competition increase quality?	Results
Beckert et al. (2012)	England	2008–09	Yes	Hip replacement patients are significantly more likely to choose higher-quality hospitals. A 5% increase in a hospital's mortality rate decreases demand by 6.9%. Hospital mergers substantially reduce the responsiveness of demand to mortality.
Gaynor et al. (2011)	England	2003–04, 2007–08	Yes	Coronary artery bypass graft surgery (CABG) patients' responsiveness to hospital mortality rates is substantially higher after the reforms. A 1% increase in a hospital's mortality rate reduces its market share by over 4% after the reforms. The change in elasticity due to the reform led to a significant reduction in mortality.

Competition improves quality where prices are market determined, although the evidence is mixed (Table 4). There have also been substantial additions to this literature since the 2006 synthesis. The findings from these studies are more mixed than the findings of recent studies of markets with administered prices. This stands to reason: if hospitals can compete on both price and quality, then when they face tougher competition they will choose to compete by whichever means is most effective. If buyers are considerably more responsive to price than quality (for example, if price is easier to measure), then enhanced competition can lead to lower prices, but also less attention to quality. On the other hand, if quality is particularly salient, then tougher competition can enhance quality.

All of the U.S. studies except for one find that competition improves quality, while the English studies uniformly find negative effects.⁵ The difference appears to most likely be due to differences in the possibility of patient choice between the United States and England (in the 1990s).

In the United States, prices are negotiated by price-sensitive insurers. These insurers have strong incentives to obtain lower prices, since their customers, typically employers, are responsive to price differences. Insurers, however, do not engage in sole-source contracting. They contract with sets, or “networks,” of hospitals. Patients are thus free to exercise choice of hospital within a network (which is often quite broad). Hospitals have an incentive to compete on quality in order to attract patients within a network. As a consequence, there are both price and quality incentives in play.

In contrast, in England in the 1990s, negotiation was done by a single local public entity (Primary Care Trust, or PCT) for all individuals in a geographic area, and contracts were sole source. Purchasers could use savings obtained via lower prices to purchase more care (particularly elective care). Hospitals' operating incomes came from contracts with purchasers. Information on quality was not publicly available. This led to negotiations focused on price, not quality. As a consequence, patients had little or no choice of hospital, and there was far less incentive for hospitals to compete on quality to attract patients.

⁵ The English studies are of a prior reform in the 1990s which emphasized price competition (see Propper et al. (31) for more details).

Physician-hospital consolidation is often motivated by enhanced bargaining power.

A major next step for research in this area is sorting out the factors that determine whether competition will lead to increased or decreased quality. Whether competition leads to increased or decreased quality depends on its relative impacts on how responsive hospital choice is to price versus quality. Future research can focus on trying to recover estimates of these key elements, as well as understanding institutional and policy factors that affect the competitive environment.

Table 4: Summary of hospital quality-competition studies with market determined prices since 2006

Author/ Year	Location of data	Time frame of analysis	Does competition increase quality?	Results
Sohn and Rathouz (2003)	California	1995	Yes	Competition reduced angioplasty mortality.
Encinosa and Bernard (2005)	Florida	1996–2000	No	Low hospital operating margin (possibly due to competition) led to more patient safety events.
Propper et al. (2004)	England	1995–98	No	Hospitals facing more competitors had higher mortality rates in a deregulated environment.
Capps (2005)	New York	1995–2000	Yes	Hospital mergers had no impact on many quality indicators, but did lead to increases in mortality for AMI and heart failure patients.
Propper et al. (2008)	England	1991–99	No	Mortality increased at hospitals with a larger number of competitors following deregulation.
Howard (2005)	US	2000–02	Yes	Demand for kidney transplants is responsive to graft failure. As demand becomes more responsive, hospitals have to compete harder to attract or retain patients.
Abraham et al. (2007)	US	1990	Yes	Quantity increases with the number of hospitals. This will happen only if quality increases or price falls. This therefore implies that an increase in the number of hospitals increases competition.
Cutler et al. (2010)	Pennsylvania	1994–95, 2000, 2002–03	Yes	Removing barriers to entry in the form of certificate of need laws led to entry and increased market shares for low mortality rate CABG surgeons.
Escarce et al. (2006)	California, New York, Wisconsin	1994–99	Yes	Mortality for patients with a variety of conditions is lower in less concentrated markets in California and New York. There are no effects in Wisconsin.
Rogowski et al. (2007)	California	1994–99	Yes	Mortality for patients with a variety of conditions is lower where hospitals have more competitors.
Romano and Balan (2011)	Chicago Primary Metropolitan Statistical Area (PMSA)	1998–99, 2001–03	Yes	A hospital merger in the Chicago suburbs had no effect on some quality indicators, and harmed some others.

PHYSICIAN-HOSPITAL CONSOLIDATION, CONT.

Consolidation is often motivated by a desire to enhance bargaining power by reducing competition.

Burns et al. (10) find that hospital-physician alliances increase with the number of HMOs in the market. They infer that providers may be consolidating in order to achieve or enhance market power. More recently, Berenson et al. (6) conducted 300 interviews with health care market participants, and reported that increased bargaining power through joint negotiations is one of several reasons for hospital-physician alliances.

Ciliberto and Dranove (12) and Cuellar and Gertler (14) are econometric studies that examine the impact of physician-hospital consolidation. Both papers look at the effects of physician-hospital consolidation on hospital prices. The two studies find opposite results—Cuellar and Gertler find evidence consistent with anticompetitive effects of physician-hospital consolidation, while Ciliberto and Dranove find no such evidence.

It appears that consolidation is often motivated by a desire to enhance bargaining power by reducing competition, but the limited evidence on whether this leads to higher hospital prices is mixed.

Conclusions and Policy Implications

Additions to the evidence base since the 2006 research synthesis reinforce the findings that hospital competition leads to lower prices. The expanded evidence on competition and quality shows that competition leads to higher quality when there are administered prices. The evidence is less straightforward when prices are market determined, although the majority of studies show that competition improves quality. Our review of the research on physician-hospital consolidation does not suggest that such consolidation (absent true integration) will lead to cost reductions or clinical improvement, and may lead to enhanced market power for providers.

Policy developments since the 2006 synthesis give policy-makers both some cause for optimism and some cause for concern.

- > The FTC's recent successes in blocking horizontal hospital mergers should prevent further consolidation, thereby constraining price increases and likely improving the quality of care.
- > Nonetheless, many hospital markets remain highly concentrated and noncompetitive. And, the prospect that the ACA could encourage greater physician-hospital consolidation gives some cause for concern.
- > While the current evidence base is not very supportive of initiatives to encourage physician-hospital integration, given the current interest in this kind of consolidation and the promotion of ACOs and bundled payments, more evidence is clearly needed on the impacts of consolidation on costs, quality and prices.

THE SYNTHESIS PROJECT (Synthesis) is an initiative of the Robert Wood Johnson Foundation to produce relevant, concise, and thought-provoking briefs and reports on today's important health policy issues.

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Original Investigation

Association of Financial Integration Between Physicians and Hospitals With Commercial Health Care Prices

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Teresa Gibson, PhD; J. Michael McWilliams, MD, PhD

IMPORTANCE Financial integration between physicians and hospitals may help health care provider organizations meet the challenges of new payment models but also may enhance the bargaining power of provider organizations, leading to higher prices and spending in commercial health care markets.

OBJECTIVE To assess the association between recent increases in physician-hospital integration and changes in spending and prices for outpatient and inpatient services.

DESIGN, SETTING, AND PARTICIPANTS Using regression analysis, we estimated the relationship between changes in physician-hospital integration from January 1, 2008, through December 31, 2012, in 240 metropolitan statistical areas (MSAs) and concurrent changes in spending. Adjustments were made for patient, plan, and market characteristics, including physician, hospital, and insurer market concentration. The study population included a cohort of 7 391 335 nonelderly enrollees in preferred-provider organizations or point-of-service plans included in the Truven Health MarketScan Commercial Database during the study period. Data were analyzed from December 1, 2013, through July 13, 2015.

EXPOSURE Physician-hospital integration, measured using Medicare claims data as the share of physicians in an MSA who bill for outpatient services with a place-of-service code indicating employment or practice ownership by a hospital.

MAIN OUTCOMES AND MEASURES Annual inpatient and outpatient spending per enrollee and associated use of health care services, with utilization measured by price-standardized spending (the sum of annual service counts multiplied by the national mean of allowed charges for the service).

RESULTS Among the 240 MSAs, physician-hospital integration increased from 2008 to 2012 by a mean of 3.3 percentage points, with considerable variation in increases across MSAs (interquartile range, 0.8-5.2 percentage points). For our study sample of 7 391 335 nonelderly enrollees, an increase in physician-hospital integration equivalent to the 75th percentile of changes experienced by MSAs was associated with a mean increase of \$75 (95% CI, \$38-\$113) per enrollee in annual outpatient spending ($P < .001$) from 2008 to 2012, a 3.1% increase relative to mean outpatient spending in 2012 (\$2407 [95% CI, \$2400-\$2414] per enrollee). This increase in outpatient spending was driven almost entirely by price increases because associated changes in utilization were minimal (corresponding change in price-standardized spending, \$14 [95% CI, -\$13 to \$41] per enrollee; $P = .32$). Changes in physician-hospital integration were not associated with significant changes in inpatient spending (\$22 [95% CI, -\$1 to \$46] per enrollee; $P = .06$) or utilization (\$10 [95% CI, -\$12 to \$31] per enrollee; $P = .37$).

CONCLUSIONS AND RELEVANCE Financial integration between physicians and hospitals has been associated with higher commercial prices and spending for outpatient care.

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← Invited Commentary

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Hospital employment of physicians and ownership of physician practices has increased during the past decade.¹⁻⁴ For hospitals and health care systems, financial integration with physicians may boost referrals for hospital inpatient and outpatient services and help to meet the challenges of new payment models that hold health care provider organizations accountable for spending across the full spectrum of care. For physicians, the resources and economies of scale offered by hospitals may be attractive as administrative and infrastructure costs of independent practice grow.^{2,5-7}

Conceptually, physician-hospital integration could increase or decrease spending on health care. Integration could yield efficiencies through better coordination and management of health care, but it could also strengthen the bargaining power of provider organizations over insurers, leading to higher commercial health care prices. Because evidence of efficiencies from physician-hospital integration is limited,⁸⁻¹⁰ even in the context of alternative payment models, such as accountable care organizations,¹¹ concerns have been raised that any reductions in health care use achieved by new payment models¹¹⁻¹⁵ could be offset by higher prices negotiated by provider organizations consolidating in response to them.^{16,17}

Although the price-increasing effects of hospital mergers have been well documented,^{8,18-20} less is known about the effects of consolidation among physicians and between physicians and hospitals. Greater concentration in physician markets has been associated with higher prices for physician services in California,²¹ and increases in physician market concentration have been associated with price increases for cardiology and orthopedic services²² and for office visits²³ in national studies. Two regional studies examining the effect of financial integration between physicians and hospitals on hospital prices^{24,25} produced conflicting results. The only national, longitudinal analysis of physician-hospital integration²⁶ examined prices for inpatient services only and found a positive association between physician-hospital integration and hospital prices for inpatient care.

The effect of physician-hospital integration on prices is likely to be greater for outpatient services than for inpatient services because commercial insurers may follow Medicare's outpatient payment system by paying more for services delivered in hospital outpatient settings than for the same services delivered in office settings.^{27,28} Moreover, because hospital markets are much more concentrated than physician markets on average,^{19,23} financial integration between hospitals and physicians may enhance bargaining power more for the physicians than for the hospitals involved. By exerting market power derived primarily from its preexisting share of the hospital market, the integrated entity may be able to command price increases for outpatient physician services by threatening to exclude its affiliated hospitals from an insurer's network. We examined the association between changes in physician-hospital integration from January 1, 2008, through December 31, 2012, and concurrent changes in commercial spending and prices, with a focus on outpatient services.

Methods

Data Sources

We analyzed deidentified data from the Truven Health MarketScan Commercial Database to assess spending, utilization, and prices in 2008 and 2012. The MarketScan database includes inpatient and outpatient claims for a convenience sample of private health care plans and self-insured employers. Because MarketScan data lack identifiers for provider organizations, we used Medicare claims to measure physician-hospital integration at the level of metropolitan statistical areas (MSAs) and linked this information to MarketScan data for each enrollee based on the MSA in which the enrollee resided. Our study was approved by the Harvard Medical School Committee on Human Studies. Because the data were deidentified, the committee deemed the study not to be human subjects research. Consequently, we did not have to apply for a waiver of informed consent.

Study Population

To focus our analyses on fee-for-service spending and prices, we limited our study population to enrollees in preferred-provider organization or point-of-service plans. Because MarketScan data vary geographically in representativeness and included an increasing number of employers and health insurance plans during the study period, we applied 2 restrictions to improve consistency across years and market representativeness in each year. First, we included only enrollees who were present in MarketScan data in 2008 and 2012. Second, we restricted our analyses to MSAs in which the nonelderly MarketScan preferred-provider organization and point-of-service populations constituted at least 15% of the total population of enrollees in these plans as quantified using HealthLeaders InterStudy data on commercial enrollment by plan type.²⁹

Because we used Medicare claims to assess physician-hospital integration, we further excluded MSAs with few physicians billing Medicare to focus analyses on MSAs with greater overlap between the physicians represented in each claims database (eMethods in the [Supplement](#)). Our final study sample included 7 391 335 nonelderly enrollees in 2008 and 2012 in 240 MSAs (of 381 MSAs in the United States).

Study Variables

Physician-Hospital Integration

To measure physician-hospital integration, we exploited a feature of the Medicare outpatient payment system. When a service is provided in a physician practice owned by a hospital, as in a hospital outpatient department (HOPD), Medicare pays a reduced professional fee (a reduced practice expense) and an additional facility fee, with the total payment exceeding what a physician would receive for rendering the same service in the office setting, often substantially so.^{27,30} Subject to a few additional conditions beyond ownership by a hospital, the physician and hospital can legally bill Medicare at the higher HOPD rate even if the physician's practice is not located on the hospital's campus.³¹ The payment differential between HOPD

and office settings provides financially integrated physicians and hospitals with a strong incentive to bill outpatient services at the HOPD rate, which requires a change in place-of-service code from office to HOPD on claims for physicians' professional services.

Using Medicare Carrier (physician/supplier) and Outpatient claims for a random 20% sample of beneficiaries in 2008 and 2012, for each physician in each MSA in each year we calculated the share of claims for outpatient care that was billed with an HOPD setting code. For each MSA in each year, we then calculated the proportion of physicians billing exclusively with an HOPD setting code. In a sensitivity analysis, we alternately specified this MSA-level measure of physician-hospital integration as the proportion of physicians with 25%, 75%, or 95% of their outpatient claims billed in this manner (eMethods in the [Supplement](#)).

Increases in our claims-based measure of physician-hospital integration could result from the acquisition of physician practices by hospitals, physicians leaving or closing their practices to join hospital-owned practices, or market entry of integrated systems. In a validation analysis of the 10 MSAs with the greatest increases in physician-hospital integration according to our measure, we found (via web searches) public reports of major acquisitions or market entry causing greater financial integration between physicians and hospitals in all 10 MSAs.^{32,33}

Physician, Hospital, and Insurance Market Concentration

To control for other changes in provider organization or insurer market structure that also may have affected prices during the study period, we constructed Herfindahl-Hirschman indices (HHIs)³⁴ measuring hospital, physician, and insurance market concentration in each MSA in 2008 and 2012 (eMethods in the [Supplement](#)). The HHI is a standard economic measure of concentration, calculated for each market as the sum of the squared market shares multiplied by 10 000, where higher numbers indicate a more concentrated market (in the extreme, a market served by a single provider organization or insurer would have an HHI of $1^2 \times 10\,000 = 10\,000$).

We constructed the hospital market HHI with 2008 and 2012 data from the American Hospital Association Annual Survey Database,³⁵ using each hospital's share of admissions in an MSA as its market share and accounting for common hospital ownership in hospital systems. For the physician market HHI, we used Medicare Carrier claims from 2008 and 2012 to calculate the market share of each group of physicians billing under a common taxpayer identification number (TIN)—specifically, the proportion of allowed charges for outpatient care in an MSA billed by each TIN (eMethods in the [Supplement](#)). Prices in Medicare (allowed charges) are set administratively and are thus unrelated to provider organization market power. By relying on TINs to identify physician groups, we likely underestimated physician market concentration because large provider organizations often bill under multiple TINs,³⁶ but previous work suggests that physician concentration measures using TINs are highly correlated with measures derived from other data identifying physician groups.³⁷ Finally, we used the HealthLeaders InterStudy data from 2008

and 2012 to create an HHI for insurers by using the proportion of commercially insured lives in each MSA covered by each insurer as the insurer's market share.

We conducted 2 analyses to examine whether changes in prices associated with physician-hospital integration may have been explained by concurrent changes in physician or hospital market concentration. First, we estimated correlations between MSA-level changes in physician-hospital integration and changes in physician or hospital market concentration. Second, we estimated the association between physician-hospital integration and spending with and without adjustment for physician and hospital market concentration.

Additional Covariates

To adjust for other time-varying predictors of health care spending in the MSAs, we assessed the unemployment rate, the proportion of the population in poverty, the proportion of the population older than 65 years, and the number of physicians per 1000 residents from the Area Health Resources File and the number of hospital beds per 1000 residents from the American Hospital Association Annual Survey Database³⁵ and Census Bureau data³⁸ for each MSA in 2008 and 2012. We also created a health risk score using Verisk Health DxCG Stand Alone Software (v4.1.1, Comprising the Budgeting and Underwriting Bundle for the Commercial, Medicaid, and Medicare Populations), which incorporates age, sex, and diagnosis codes from the prior year to predict spending for each enrollee in the year of interest.³⁹ Finally, we measured inpatient and outpatient insurance benefit generosity at the plan level, calculated as the annual mean cost-sharing for a set of frequently used services (eMethods in the [Supplement](#)).

Spending and Utilization

For each enrollee in each year, we calculated spending by summing allowed charges for outpatient services (services with office or HOPD place-of-service codes), including facility payments. We also created an outpatient utilization measure equal to the sum of annual service counts for each service, with each service count multiplied by the national mean of allowed charges for the service, and services defined by *Current Procedural Terminology* codes (eMethods in the [Supplement](#)). By holding the price constant at the national mean for each service, any variation between enrollees in this dollar-denominated measure of utilization (price-standardized spending) indicates a different quantity or mix of services. We similarly calculated annual inpatient utilization by multiplying admission counts for each diagnosis related group by the national mean of allowed charges for that code.

Because spending is the product of price and quantity (ie, utilization), comparisons of changes in spending vs utilization allowed us to deduce the extent to which changes in spending were driven by changes in prices. For example, a change in spending without a change in utilization must have been caused by a change in prices. We used this method to decompose spending changes into changes in utilization and implied changes in prices rather than to assess prices directly because the data did not reliably support direct assessment of

Table. Comparison of Changes in Characteristics of MSAs With Above- vs Below-Median Changes in Physician-Hospital Integration From 2008 to 2012

MSA-Level Characteristic	Study Year, Mean (IQR)		MSA Change in Physician-Hospital Integration, Mean (IQR)		P Value ^a
	2008	2012	Below Median	Above Median	
Physician-hospital integration, %	18.0 (11.9 to 21.5)	21.3 (14.5 to 25.2)	-0.1 (-1.2 to 1.6)	6.8 (3.8 to 7.1)	<.001
Physician HHI ^b	675 (223 to 682)	726 (254 to 724)	54 (-7 to 114)	49 (-12 to 152)	.86
Hospital HHI ^b	3962 (2346 to 5075)	4143 (2566 to 5134)	127 (-41 to 172)	234 (-15 to 314)	.14
Insurance HHI ^b	2441 (1715 to 2716)	2386 (1701 to 2822)	-52 (-414 to 298)	-58 (-341 to 348)	.95
Population aged ≥16 y and unemployed, %	5.7 (4.7 to 6.4)	7.8 (6.5 to 8.9)	2.3 (1.7 to 2.9)	2.1 (1.5 to 2.8)	.20
Population in poverty, %	13.1 (10.5 to 15.3)	15.7 (12.9 to 18.0)	2.6 (1.8 to 3.4)	2.6 (1.8 to 3.4)	.81
Population aged ≥65 y, %	12.9 (10.9 to 14.2)	14.0 (11.9 to 15.0)	1.1 (0.7 to 1.3)	1.0 (0.7 to 1.3)	.82
No. of physicians per 1000 persons	2.79 (1.89 to 3.09)	2.87 (1.94 to 3.17)	0.08 (-0.02 to 0.12)	0.07 (-0.01 to 0.14)	.59
No. of hospital beds per 1000 persons	2.88 (2.02 to 3.46)	2.75 (1.92 to 3.29)	-0.12 (-0.21 to 0.04)	-0.15 (-0.24 to 0.06)	.51
DxCG risk score ^c	0.69 (0.13 to 0.84)	1.18 (0.30 to 1.38)	0.46 (0.36 to 0.51)	0.44 (0.36 to 0.52)	.30
Mean outpatient OOP payment, \$	29.23 (20.60 to 31.64)	34.44 (23.99 to 37.83)	4.99 (3.17 to 6.85)	4.35 (3.30 to 6.80)	.44
Mean inpatient OOP payment, \$	605.55 (332.66 to 897.92)	796.92 (509.72 to 1196.73)	203.24 (135.29 to 265.26)	200.55 (129.42 to 291.92)	.88

Abbreviations: HHI, Herfindahl-Hirschman index; IQR, interquartile range; MSA, metropolitan statistical area; OOP, out-of-pocket.

^a We report P values for 2-tailed t tests of differences between changes.

^b Calculation of the HHI is described in the eMethods of the Supplement.

^c Calculated using Verisk Health DxCG Stand Alone Software (version 4.1.1)³⁹ such that the mean score within the MarketScan database equals 1. Because our sample includes nonelderly individuals enrolled in preferred-provider organization or point-of-service plans included in the Truven Health MarketScan Commercial Database in 2008 and 2012, we do not expect a mean DxCG score of exactly 1.

prices in hospital-owned practices but did reliably capture all spending and utilization in these settings (eMethods in the Supplement).

Differences Between Settings in Prices for Office Visits

Prior research suggests that payment differences in Medicare for services in office vs HOPD settings are likely to be reflected to some extent in prices negotiated between provider organizations and commercial insurers.⁴⁰ Therefore, we would expect physician-hospital integration to be associated with higher prices, even if integration did not strengthen provider organizations' bargaining position.

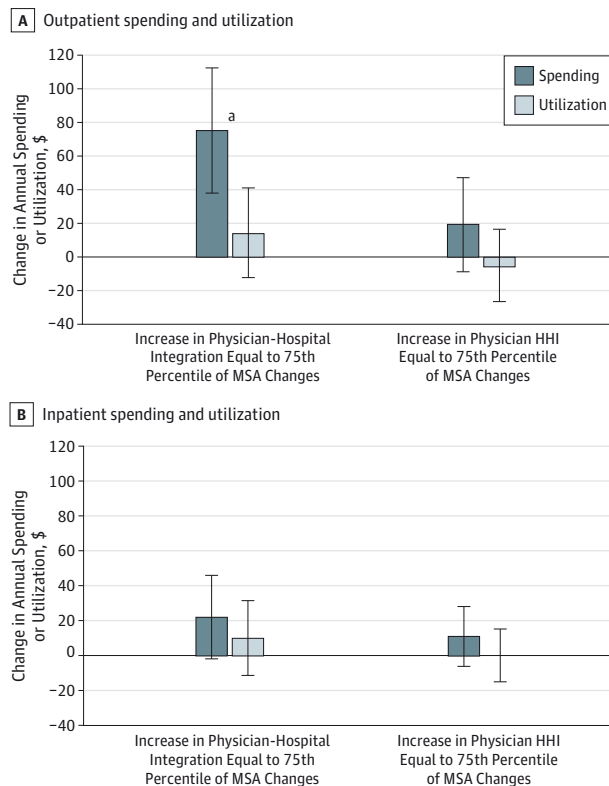
We conducted supplementary analyses of between-setting differences in prices for office visits to determine whether market power likely contributed to price changes associated with physician-hospital integration. Specifically, for each MSA, we computed the difference between the mean payment in Medicare for established patient office visits (*Current Procedural Terminology* codes 99211-99215) with HOPD setting codes (payment = facility fee + professional fee, including reduced practice expense) and the mean payment for office visits in the office setting (payment = professional fee only, including full practice expense) (eMethods in the Supplement).

We computed analogous price differentials using MarketScan data and expected these differentials to reflect setting-related differences transmitted from the Medicare payment system and price negotiations between commercial payers and provider organizations. If provider organizations' market position did not influence prices in the commercial sector, be-

tween-setting price differentials would reflect only differences transmitted from Medicare and therefore would be similar across markets in both the Medicare and MarketScan populations despite variation in physician-hospital integration across markets; some variation in price differentials is expected from geographic adjustments for practice costs in Medicare. Under the scenario in which physician-hospital integration enhances provider organizations' bargaining power over commercial insurers, we would expect the between-setting price differentials to vary more widely across MSAs in the commercial sector than in Medicare. Our analytic approach does not distinguish between the development of new market power owing to physician-hospital integration and the transference of preexisting market power from hospitals to physicians, which could allow markups for physician services to rise to levels negotiated by hospitals.

Statistical Analysis

Data analysis was performed from December 1, 2013, through July 13, 2015. We used linear regression to estimate the association between changes in physician-hospital integration and changes in spending or utilization. Specifically, with the enrollee-year as the unit of analysis, we fit a model of annual spending or utilization per enrollee as a function of year (indicator of 2012, with 2008 as the reference year), MSA indicators, MSA-level physician-hospital integration, other MSA-level measures of provider and insurer market structure, and covariates. We included the year indicator to control for national trends and the MSA indicators to control for time-

Figure 1. Adjusted Estimates of Change per Enrollee in Spending and Utilization

Adjusted estimates of change are associated with increases in physician-hospital integration and physician market concentration from 2008 to 2012. Bars represent the change in spending or utilization (calculated as price-standardized spending) associated with a change in physician-hospital integration or physician market concentration (expressed as Herfindahl-Hirschman index [HHI]) equal to the 75th percentile of changes experienced by metropolitan statistical areas from 2008 to 2012. Error bars denote 95% CIs. Full regression results are given in eTables 2 and 3 in the [Supplement](#).

^a $P < .001$, Wald test.

invariant differences between markets. Thus, the coefficient for each market structure term (including physician-hospital integration) equaled the mean change in spending or in utilization associated with a 1-unit greater change in that measure of market structure, adjusting for changes in other measures of market structure and covariates.

The regression coefficients for the physician-hospital integration term yielded estimates of changes in spending or utilization that might occur if a market changed from no integration to full integration or, equivalently, estimates of changes in spending or utilization that might occur for an individual patient if the patient's physicians joined or were acquired by a hospital. To facilitate a realistic market-level interpretation from regression coefficients, we derived estimates of changes in spending or utilization associated with a change in physician-hospital integration equivalent to the 75th percentile of changes experienced by MSAs from 2008 through 2012 (an increase of 5.2 percentage points) while holding all other variables fixed. We report analogous estimates of changes in physician mar-

ket concentration. We chose the 75th percentile to scale our estimates because we found little physician-hospital integration occurring in the bottom quartile of the MSAs (and apparent divestitures), and our analysis intended to support inferences about markets where integration occurred.

We weighted observations by the total preferred-provider organization population in the MSA (from the HealthLeaders InterStudy data) divided by the MarketScan population in our study sample in the MSA, giving greater weight to enrollees in MSAs where MarketScan data included smaller proportions of enrollees in preferred-provider organizations. We used Huber-White robust variance estimators to account for correlated data within the MSAs.^{41,42} Sensitivity analyses using generalized linear models with a log link and a proportional-to-mean variance function produced similar estimates. All statistical analyses were conducted using SAS (version 9.4; SAS Institute Inc) and STATA (version 13; StataCorp) software.

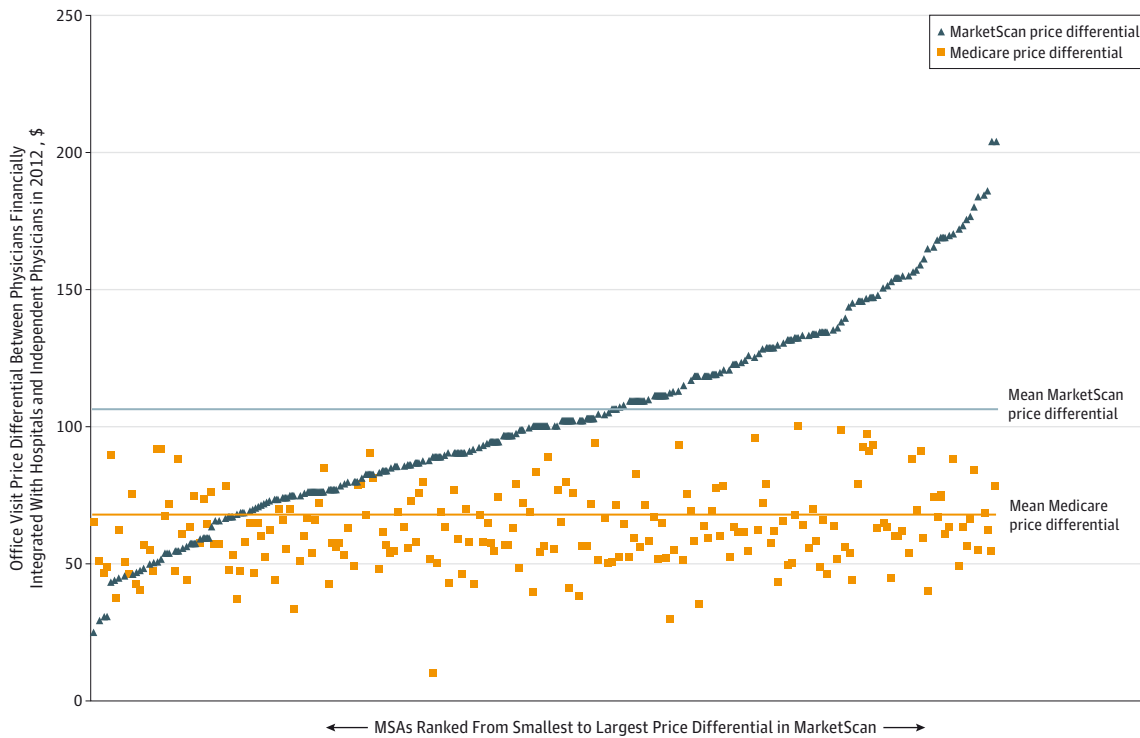
Results

Among the 240 MSAs, the proportion of physicians with billing patterns consistent with financial integration with hospitals increased from 2008 to 2012 by 3.3 percentage points (from 18.0% to 21.3%). This change varied considerably across MSAs (interquartile range, 0.8-5.2 percentage points). Metropolitan statistical areas with above- vs below-median growth in physician-hospital integration exhibited similar changes in other characteristics, including the concentration of physician and hospital markets (**Table**). Across MSAs in 2008, physician-hospital integration was not significantly correlated with hospital market concentration ($r = -0.05$; $P = .47$) or with physician market concentration ($r = -0.03$; $P = .64$). Changes in physician-hospital integration from 2008 through 2012 were weakly and negatively correlated with changes in physician concentration ($r = -0.12$; $P = .05$) and were not correlated with changes in hospital market concentration ($r = -0.03$; $P = .60$). Changes in physician-hospital integration by specialty are presented in eTable 1 in the [Supplement](#).

For our study sample of 7 391 335 nonelderly enrollees in preferred-provider-organization or point-of-service plans, mean (95% CI) annual spending per enrollee in 2012 was \$2407 (\$2400-\$2414) for outpatient care and \$872 (\$865-\$880) for inpatient care. In adjusted analyses, an increase in physician-hospital integration equivalent to the 75th percentile of changes experienced by MSAs was associated with a minimal change in utilization as measured by price-adjusted spending (\$14 [95% CI, -\$13 to \$41] per enrollee; $P = .32$) but a significant increase in annual outpatient spending (\$75 [95% CI, \$38-\$113] per enrollee; $P < .001$) or a 3.1% increase relative to mean outpatient spending in 2012. Because spending is the product of price and utilization, this increase in outpatient spending without an increase in utilization suggests that the spending increase was driven almost entirely by price increases (**Figure 1A** and eTable 2 in the [Supplement](#)).

In contrast, greater increases in physician-hospital integration were not associated with significantly greater increases in inpatient utilization (change in price-adjusted spending associated with an increase in physician-hospital integration equal to

Figure 2. Difference in Mean Prices for Office Visits Between Independent and Hospital-Integrated Physicians, by MSA for Medicare and MarketScan Populations



The mean difference between prices for office visits with a hospital outpatient department (HOPD) setting code and those with an office setting code (mean HOPD setting price - mean office setting price) is plotted for each MSA in the

Medicare and MarketScan populations (after trimming outliers above the 95th percentile of Medicare and MarketScan price differences in 2012). The MSAs are ordered based on the price differential in the MarketScan population.

the 75th percentile of MSA changes, \$10 [95% CI, -\$12 to \$31] per enrollee; $P = .37$) or inpatient spending (\$22 [95% CI, -\$1 to \$46] per enrollee; $P = .06$) (Figure 1B and eTable 3 in the Supplement). Alternative definitions of physician-hospital integration reduced the increase in inpatient spending by 28% to 62% but did not appreciably affect estimates for outpatient spending (eTables 4 and 5 in the Supplement). Increases in physician market concentration were associated with lower utilization and higher outpatient spending, but these associations were not statistically significant (Figure 1A).

Estimates from analyses adjusted only for enrollee and plan-level characteristics were similar (eTables 2 and 3 in the Supplement). In addition, the results were not changed substantively by restriction to MSAs with large MarketScan populations (eTable 6 in the Supplement), by weighting each enrollee equally (eTable 7 in the Supplement), or by use of generalized linear models (eTable 8 in the Supplement).

The mean price for an office visit billed with an HOPD setting code was \$68 greater than the mean price for an office visit billed with an office setting code in the Medicare population and \$108 greater in the MarketScan population. Price differentials varied substantially more across MSAs in the MarketScan population (interquartile range, \$77-\$134) than in the Medicare population (interquartile range, \$54-\$73) (Figure 2) and eFigure in the Supplement).

Discussion

From 2008 to 2012, markets with greater increases in physician-hospital integration exhibited greater increases in spending for outpatient care for a large commercially insured population, almost entirely owing to price increases rather than changes in utilization. In contrast, physician-hospital integration was not associated with higher inpatient prices. These findings are consistent, on average, with hospitals conferring their existing market power to newly employed physicians or acquired practices as the integrated organization negotiates prices for outpatient physician services but not with physician-hospital integration strengthening the organization's bargaining power in negotiating prices for inpatient hospital services.

Differences in prices for office visits between independent physicians and physicians integrated with hospitals were larger and varied across MSAs substantially more in the commercially insured population than in the Medicare population. These pricing patterns provide suggestive evidence that price increases associated with physician-hospital integration did not result solely from transmission of setting-related price differentials in the Medicare payment system but likely also resulted from the enhanced market power of the provider organizations.

Consistent with prior research,^{8-10,36} physician-hospital integration was not associated with lower utilization, suggesting that this form of provider consolidation has not led to gains in health care efficiency in recent years through improved care coordination or management. Efficiencies from physician-hospital integration may only manifest under alternative payment models with incentives to limit utilization, although early evidence from accountable care organizations in Medicare suggests spending reductions were not related to financial integration between physicians and hospitals.^{11,43} Similarly, price increases associated with physician-hospital integration may not generalize beyond the fee-for-service context, although provider organizations with greater bargaining power could negotiate higher global budgets under alternative payment models. Whether new payment models accelerate physician-hospital integration beyond ongoing trends remains to be seen. Although consolidation in the physician market was not associated with significant increases in spending in our study, it was associated with spending increases and reductions in utilization, which together implied sizable price increases consistent with the findings of prior studies.²¹⁻²³

Our study has several limitations. First, changes in unobserved predictors of prices could have contributed to our findings. Changes in observed time-varying characteristics of patients, plans, and providers, however, were generally similar in MSAs exhibiting smaller vs larger increases in physician-hospital integration. Moreover, adjustment for changes in hospital and physician market concentration did not attenuate estimates, suggesting that our results were not likely driven by other unobserved changes in provider market structure correlated with physician-hospital integration.

Second, several sources of measurement error probably led us to underestimate the strength of the relationship between physician-hospital integration and price increases, assuming

the error was unrelated to the extent of physician-hospital integration in a market according to our claims-based measure. Some physician practices owned by hospitals may not bill with HOPD setting codes despite the strong financial incentive for the integrated entity to do so. In addition, contractual relationships between hospitals and physicians that do not involve ownership of physician practices by hospitals (eg, physician-hospital organizations) may also enhance bargaining power and would not be detected by our claims-based measure. Within-market differences in the providers represented in the Medicare and MarketScan database claims and sampling error from each data source also likely biased our findings toward the null.

Third, integration between physicians and hospitals mechanically causes greater concentration in the physician market because physician practices become financially integrated through relationships with common hospitals. We could not discern the extent to which this concentration in the physician market contributed to price increases related to physician-hospital integration. Finally, we did not assess quality of care. Improved quality would enhance value in the absence of changes in utilization.

Conclusions

Increases in physician-hospital integration from 2008 through 2012 were associated with increased spending and prices for outpatient services, with no accompanying changes in utilization that would suggest more efficient care from better care coordination and economies of scale. Changes in the structure of health care provider markets and in spending should be monitored, particularly as payment systems shift away from fee-for-service, and may require additional regulatory measures to control.

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Invited Commentary

Hospital Acquisition of Physician Groups On the Road to Value-Based or Higher-Priced Care?

James D. Reschovsky, PhD; Eugene Rich, MD

An important goal of the Affordable Care Act is to transform the US health care system from one characterized by high costs, poor quality, and fragmented care to one focused on comprehensive, coordinated, and efficient care. The Centers for Medi-



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care & Medicaid Services (CMS) is working to meet this goal primarily through efforts to strengthen primary care and to introduce innovative new payment and delivery models. These new models are designed to reduce clinicians' reliance on fee-for-service reimbursement, instead rewarding value over volume. For example, with bundled payment, clinicians are rewarded for lowering the cost of an episode of care, and with accountable care organizations (ACOs), clinicians are rewarded for lowering costs for a population of patients, contingent on meeting quality of care metrics. Conversely, clinicians are (or will be in the future) financially penalized for increasing costs.

The new models will require greater care integration across physicians, hospitals, and other health care delivery providers to achieve cost savings and to provide well-coordinated care. One means of integrating care (though not the only one) is the purchase of physician practices by hospitals. Compared with individual physician practices, hospitals and hospital systems have more resources and infrastructure to set up integrated health information, administrative, and financial systems. These employment arrangements can also be attractive to physicians for a variety of reasons, providing them more stable incomes, better work-life balance, lower costs for malpractice insurance, and reduced or eliminated practice-management issues.

Given the possibilities for better-integrated care, the purchase of physician groups by hospitals would be expected to improve efficiency and save costs. But overall this does not seem to be the case. The article by Neprash and colleagues¹ in this issue of *JAMA Internal Medicine* shows that hospital purchase of physician practices was linked to greater net costs between 2008 and 2012. This confirms previous research, but for the first time, the findings are based on national commercial insurance data.² Importantly, Neprash and colleagues¹ found that the greater costs largely arose from higher prices, especially for outpatient services. Service use was not the major driver of costs, but hospital-physician "integration" did not lead to greater efficiency.

Several factors may be contributing to these findings. First, hospitals have been purchasing physician practices to maintain or grow their local market share, mostly acquiring primary care physicians and specialists in lucrative lines of business such as cardiology, oncology, and orthopedic surgery, as well as purchasing strategically situated multispecialty groups.

These purchases guarantee a flow of inpatient admissions and referrals to profitable outpatient services.³ Differing market conditions explain why hospitals' acquisition of physician groups varies widely across local areas.⁴

Second, the purchase of physician groups often allows hospitals to generate more revenue from the services the physicians provide. Ambulatory services receive higher reimbursements from Medicare and most other payers when they are provided in hospital outpatient departments than when the identical services are provided in community-based settings. An office visit under Medicare costs 70% more when provided in a hospital outpatient department than in a physician's office, and the prices paid by commercial insurers often differ by orders of magnitude across these settings.^{5,6} Services rendered by community-based but hospital-owned physician practices are now often billed at these higher hospital outpatient department rates.

Finally, physician group ownership gives the hospital more bargaining power in price negotiations with insurers. Market power is achieved not only through consolidation of hospitals into systems but also through the control over a significant share of local physicians. Vertically integrated hospitals can use this market power to increase inpatient, outpatient, and physician reimbursements.

The data used in the analysis by Neprash et al¹ extends to 2012, and since then, the number of Medicare ACOs has risen dramatically, now covering 5.6 million beneficiaries in nearly 600 ACOs. There has also been substantial growth in ACO arrangements involving private insurers and state Medicaid programs. Similarly the principal CMS bundling pilot program has seen tremendous growth. Given these trends, it will be important to investigate whether hospitals are changing their strategies to increase efficiency under ACOs and other new payment models. Even for hospitals developing integrated delivery systems, market power does not preclude them from extracting favorable terms on ACO contracts with commercial insurers—costs ultimately borne by patients. And although some hospitals have successfully created integrated delivery systems, physician-led Medicare ACOs have thus far proven somewhat more successful at lowering costs and achieving shared savings than hospital-led ones, and smaller provider organizations in general have been more adept at improving patient outcomes than larger ones.^{7,8}

Policy makers can influence the direction vertically integrated hospitals take in the future. The Medicare Payment Advisory Commission, for example, has made modest proposals to set Medicare fees for some hospital outpatient department services at community-based levels.⁹ Although hospitals do bear regulatory and mission-related cost burdens that need to be covered, wholesale price premiums on all hospital outpatient depart-

ment services is likely to be the least efficient means of compensating hospitals for these extra costs they bear, and there is little justification for allowing hospital outpatient department fees to be charged for services rendered outside of the hospital.

Rolling back hospital consolidation or vertical integration owing to anticompetitive behavior is unlikely to be feasible or necessarily desirable. There appears to be little appetite for state regulation of hospital rates, and market-based efforts to constrain hospital pricing are limited.¹⁰ The CMS is strongly pushing adoption of “alternative payment models,” arrangements that link provider payment to the quality and cost of care delivered to a population (as in ACOs) or for an episode of care (as in bundled payment). New patient-centered medical homes that have the potential to reduce demand for hospital services are also being advanced. The ultimate success of the CMS alternative payment models is still to be determined, and many new models are under development.

Purchase of physician practices is often a hospital’s strategy of hedging on which direction the US health care system will go, but it may represent an attempt to suppress potential competition from physician-led ACOs. The CMS initiatives, such as a new pilot program that requires hospitals in some areas to accept episode-based payment (a form of bundling) for certain procedures, portend more aggressive actions to spread the coverage of risk-based alternative payment models.¹¹ If hospitals are forced into these payment arrangements, they will not be able to continue raising rates or diverting patients to costly hospital outpatient department services. They will instead need to work with their acquired physicians’ groups to use fewer services and lower prices while achieving higher quality care, a skill evidently not widely demonstrated during the 2008-2012 timeframe examined by Napresh et al.¹ This skill is one that hospitals might postpone developing only at their own peril.

ARTICLE INFORMATION

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The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending

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Abstract

One of the most important recent trends in the U.S. healthcare industry is hospital acquisition of physician practices. From 2007 to 2013, nearly 10 percent of physicians in the researchers' sample were acquired by a hospital, increasing the share of physicians that are hospital owned by more than 50 percent. Supporters of hospital-physician integration argue that it offers the promise of significant cost savings while opponents raise concerns that integration will result in higher prices. Despite the heightened interest in hospital-physician integration, the research evidence is mixed and of questionable quality. Prior studies suffer from significant data problems that the researchers overcame by using administrative claims data provided by one or more anonymous insurer(s) operating in a number of states. With their data, they are able to (a) identify physician integration at the level of the individual practice, (b) study provider transaction prices before and after integration, and (c) examine broader medical spending. Capps, Dranove, and Ody find that, on average, physician prices increase nearly 14 percent post-integration—roughly a quarter of this increase is attributable to the exploitation of payment rules—and that price increases are larger when the acquiring hospital has a larger share of its inpatient market. They find no evidence that integration leads to reductions in spending, even four years post-integration.

The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending

I. Introduction

Over the past decade, there has been a steady decline in the percentage of physicians in groups of ten or less, and a steady increase in the percentage in large groups of 151 or more (Burns et al., 2013). An increasing percentage of these groups are owned by hospitals. (Kocher & Sahni, 2011; Merritt Hawkins, 2014; Welch et al., 2013). Many analysts have expressed concerns that this integration will drive up health care spending. For example, based on a set of site visits, O'Malley et al. (2011) concluded that hospital acquisitions of physician groups had, to date, primarily advanced strategies to increase the acquiring hospitals' fee-for-service volume, both through increased referrals and greater per patient service volume through, for example, increased testing. Burns, Goldsmith, and Sen (2013) reach a similar conclusion, as do Baker, Bundorf, and Kessler (2014). Integration could also drive up spending if it increased provider bargaining power (Dafny, Ho, and Lee, 2014) or if it allowed hospitals to exploit contracting provisions that allow billing of services at generally higher hospital rates (i.e., hospital-based billing).

Supporters of hospital-physician integration (which is also referred to as "Vertical Integration" or simply VI) counter that it offers the promise of significant cost savings through care coordination and other efficiencies. And, indeed, there is a large literature arguing that more coordinated care would or could result in lower healthcare costs and improved quality (Shih et al, 2008; Enthoven, 2009; Fisher et al., 2009; Stange, 2009; Yong et al., 2010). However, that same literature generally does not advance hospital-

physician integration as the only, or even the preferred, organizational form for reducing care fragmentation. For example, Shortell and Casalino (2008) describe five alternative organizational models of “accountable care systems,” their term for systems that deliver coordinated care to patients. Only one of those five models is a vertically-integrated structure in which hospitals and physician groups are jointly owned. Nevertheless, because hospital-physician integration is one possible path towards less fragmented and higher value care, merging parties in recent vertical hospital-physician merger investigations and litigation have argued that a merger will allow them to achieve care delivery efficiencies that could not otherwise be obtained. Recent examples include the St. Luke’s-Saltzer acquisition in Idaho and the Partners-South Shore merger in Massachusetts (these particular “vertical” mergers also entail horizontal overlap).

Despite the heightened interest in hospital-physician integration, the research evidence on its effects is thin. A few studies examine the impact on hospital prices, but none to our knowledge study physician prices. Only a few studies examine total health spending. Moreover, these studies generally suffer from numerous data limitations. For example, prior pricing studies have relied on broad and sometimes misleading definitions of hospital-physician integration, and have computed average prices from aggregated claims data. This has made it difficult for researchers to identify merging parties and measure actual transaction prices or overall medical spending. At the same time, prior cost studies tend to focus on cross-section comparisons and, as a result, may omit important but unobservable control variables, resulting in endogeneity bias.

In this study, we overcome these problems by using seven years of administrative claims data provided by several insurers operating in a number of states. With this data,

we are able to both (a) identify physician integration at the level of the individual practice, (b) study physician transaction prices before and after integration, and (c) study total health spending before and after integration. We find that from 2007-2013 there has been a substantial amount of VI, with the share of spending by physicians whose practices are owned by hospitals increasing from 16.9 percent to 26.5 percent, an increase of 9.6 percentage points or 57 percent.

These acquisitions lead to substantial price increases for the acquired physician groups, with average prices per unit of service increasing by 13.7 percent. These price increases vary substantially across specialties, with PCP prices increasing by 11.7 percent and prices for cardiologists increasing by 34.3 percent. As a result of VI, physician prices were approximately 1.3 percent higher in 2013 than they would have been had hospital ownership of physician groups remained at its 2007 level. These price increases do not appear to be explained by “traditional” increases in horizontal market power within physician markets. We find that price increases are larger when the acquiring hospital has a larger share of its inpatient market.¹ Finally, we estimate that approximately one quarter of the price increases are due to increased exploitation of reimbursement rules that allow hospitals to charge “facility fees” for services by hospital owned physicians.

Although VI leads to prices increases, total healthcare expenditures could be flat or even declining if VI leads to reductions in utilization. We find no evidence to suggest

¹ We use the term “market” informally to refer either to the general geographic areas in which providers are located (e.g., the MSA) or the types of services they provide (e.g., hospital or physician). We do not use the term in the formal, antitrust sense.

that VI leads to lower expenditures, and in fact find some evidence to suggest that it leads to higher total expenditures.

II. Vertical Integration and Medical Spending

As summarized in a review by Burns et al. (2013), industry participants offer a variety of reasons for integration. Some rationales comport with standard economic theory. For example, in addition to potentially enhancing market power, horizontal integration may offer economies of scale and scope. Extensive empirical evidence suggests that physicians in group practice are more productive and better able to contain administrative and IT costs than solo physicians. Even so, small groups of 7-10 physicians appear to be more productive than larger groups, indicating that the benefits of scale may quickly diminish. Other rationales for horizontal integration are less grounded in economic theory – for example, integration purportedly allows physicians to manage capitated risk contracts and align strategic purposes (Burns and Pauly, 2002).

Supporters of vertical integration offer many rationales that are even less well grounded in economic theory, including protecting referrals, preparation for accepting global capitation, taking responsibility for the health status of a local population, offering a seamless continuum of care, and expanding the supply of physicians (Burns et al., 2013). Additional goals include defraying IT costs, stabilizing physician incomes, and creating entry barriers. (Goldstein, 2005). Supporters believe that if vertically integrating hospitals can accomplish these goals, the result will be lower total medical expenditures (though not necessarily lower hospital expenditures). Missing from these rationales is an

explanation of how joint ownership makes efficient transactions and investments more feasible.

Vertical integration also has its skeptics, and many analysts are concerned that it could lead to higher prices and higher spending. (O'Malley et al., 2011; Burns, Goldsmith, and Sen, 2013; Baker, Bundorf, and Kessler, 2014; Burns and Pauly, 2012; Goldsmith, 2012; Christensen, 2013).

Theory: Vertical Integration and Pricing

Economic theory does not yield clear predictions about the impact of vertical integration on prices. Take what would seem to be a clear cut example, the merger of a monopoly hospital with a monopoly physician group. The “theory of one monopoly rent” suggests that the market power a vertically combined entity is, in effect, the sum of the market power of each individual entity, but no more.² Thus, two monopolists in a vertical chain cannot augment their pricing power by merging. Antitrust economists have developed a number of exceptions to this rule, for example when vertical integration facilitates price discrimination or when it facilitates the exclusion of potential competitors (Rasmusen, Ramseyer, and Wiley, 1991; Segal and Whinston, 2000). The application of these antitrust examples to hospital-physician integration is unclear, however. Looking beyond pricing, vertical integration could lead to lower overall expenditures if it leads to more efficient production of hospital services.

More recent work shows that the combination of selective contracting (the process through which insurers negotiate rates with providers Capps et al. (2002)) and

²See for example, Bork(1978)

imperfect competition among downstream insurers (who are themselves not perfectly able to price discriminate among consumers) might enable vertically integrating healthcare providers to raise their prices. Gal-Or (1999) shows that vertical integration can lead to higher rates if the hospital and physician face similar competitive circumstances prior to the merger. Vistnes and Sarafidis (2013), Dafny et al. (2014), and Peters (2014) offer several additional reasons. For example, patients might be willing to purchase insurance that lacks access to their preferred hospital *or* their preferred physician, but might be unwilling to purchase insurance lacking access to *both*. This gives the merged entity sufficient leverage to raise price. Unfortunately, these papers do not provide sufficient guidance for identifying *in the data* those situations where integration is most likely to drive prices higher.

There may be simpler institutional reasons why hospital-physician mergers can drive up prices. Many medical services, including diagnostic tests and simple procedures, trigger several bills. One bill is for professional fees meant to cover the physician's effort. Another bill is for facilities fees, meant to cover the cost of equipment and associated expenses. Medicare usually pays higher facilities fee for the same procedure performed at a hospital-owned facility than at a physician-owned facility.³ Private insurers have largely followed suit. Thus, when a hospital acquires a physician practice, this can automatically trigger higher fees for a given procedure, even when the procedure is performed by the same physician at the same location. Bear in mind that the fees paid by insurers are typically negotiated through multi-year contracts, so that insurers might negotiate lower fees with the merged entity at the end of the contract period. Of course, if the merged

³The original justification was to cover higher hospital overhead expenses.

entity has accrued market power, it could resist. In any event, spending would be higher during the interim between the merger and any renegotiation.

Despite the dearth of theory, interest in hospital-physician integration has spurred a number of empirical studies of its effect on price. Cuellar and Gertler (2006) examine hospitals in three states in the mid-1990s, a period during which many hospitals acquired physician practices. Ciliberto and Dranove (2006) examine hospitals in California over a slightly later time period. Baker, Bundorf and Kessler (2014) update the results to include hospitals in 2001-2007, but data restrictions require them to report results at the county level (thus asking what happens to prices in counties that are home to integrating hospitals). All three studies measure price as the average discounted revenues from private payers, and all use fixed effects to identify the effect of integration. Yet the studies yield conflicting results – Cuellar and Gertler find that integration is associated with lower prices, Ciliberto and Dranove find no effect, and Baker et al. find higher prices.

All three studies share a fundamental limitation that we correct in this study. All measure integration by using a classification scheme in the American Hospital Association member survey. Hospitals identify whether they have salaried physicians and/or other forms of integration, but do not identify the extent of these relationships. Thus, a hospital may greatly expand the number of employed physicians over time, but will be reported to have the same degree of vertical integration at all times. In our study, we use tax identification numbers for physicians and hospitals to identify when the latter have acquired the former.

Theory: Vertical Integration and Total Spending

Moving from prices to total spending, economic theory gets even murkier. The underlying issues are whether integration generates efficiencies in the vertical chain, whether those efficiencies are sufficient to offset any unit price effects, and whether vertical integration, as opposed to arms-length relationships or contracting, is necessary to achieve these efficiencies. The economics of vertical integration suggests that mergers could lower total costs if they facilitate relationship specific investments (i.e., investments whose value depends on maintaining the business relationship between the two parties) or reduce coordination costs on design attributes (i.e., features of the trade relationship that are critical to its success). Mergers could drive costs higher if they adversely affect incentives or create bureaucratic costs such as influence activities, in which individuals in the integrated firm inefficiently lobby for organizational resources (Besanko et al., 2012). Note that costs could increase in some parts of the vertical chain (e.g., in hospitals) yet decrease in others (e.g., outpatient care). Advocates of vertical integration believe that total costs will decrease, but do not identify relevant specific assets or design attributes so as to lend theoretical heft to their hope. Nor do they tend to acknowledge potential inefficiencies such as influence activities.

There have been several empirical studies of vertical integration and costs. Allen and Cuellar (2006) find no difference in hospital productivity at integrated and non-integrated hospitals. Baker et al. (2014) find slightly higher hospital spending per privately insured enrollee in counties that are home to integrating hospitals. However, both studies again suffer from the use of the AHA-defined measure of integration, and both also suffer because they only examine prices and spending for hospitals. In

addition, the health services research literature offers a large number of cross-section comparisons of vertically integrated and non-integrated hospitals. These studies use a variety of measures of integration, including the AHA measures, but none have direct measures of ownership at the physician level.⁴ And nearly all studies focus on hospital expenditures, rather than total spending. Summarizing this literature, Burns et al. (2013) report that “evidence regarding the impact of hospital-physician integration on cost remains scattered and ambiguous.”⁵

III. Methods and Data

We obtained administrative claims data for 2007 to 2013 from one or more anonymous insurers (henceforth, “the data provider”) doing business in at least several states. Our states contain approximately 12 percent of the U.S. population and are broadly representative – they are geographically dispersed and have a similar household income distribution to the nation as a whole. The population of our states is somewhat older than the U.S. population– approximately 2 percent more of the population in our states is over 65 than in the country as a whole. A population weighted majority of the states in our sample are present for the entire period of 2007-2013, but due to incomplete data some states enter our sample only in later years.

We restrict our analysis to metropolitan statistical areas. We identify individual physicians using their unique national provider identification number (NPI) and we

⁴ For example, Goes and Zhan (1995) consider whether physicians sit on the hospital board and whether the hospital bills enter into joint venture arrangements with physicians.

⁵ Burns et al. (2013) p. 76.

identify integration activity using tax IDs.⁶ When determining ownership or computing prices, we eliminate claims that are missing either of these fields. However, we add these claims in when calculating total spend per enrollee/year.

Measuring VI

As in prior research on vertical integration, the main independent variable in our analysis, *VI*, measures whether a physician has been acquired by a hospital. Measuring *VI* is a challenge; most prior studies measure *VI* at the hospital level and rely on hospital surveys that indicate whether the hospital is engaged in any integration. These studies do not identify the extent of integration at the hospital level or which specific physicians are integrated. To overcome this problem, we use the tax ID in the claims data to identify ownership and, hence, integration. We define a physician to have become integrated in the first year that the physician (identified by the NPI) has billed for at least 50 percent of allowed charges (i.e., the transaction price, which is the total amount that payers have agreed to pay) under hospital's tax IDs. In addition, we treat a physician as integrated if the most common (based on allowed charges) tax ID that the physician bills under is a hospital's tax ID. We continue to treat physicians as integrated once they have integrated. We exclude from our analysis a small share of physicians who integrated and then unintegrated. Doing so does not substantively change our conclusions.

Ultimately, we assign each physician to a “VI status/tax ID” pair, ensuring that physicians with the same main tax ID in each year have the same integration status in

⁶ Approximately 8 percent of the physician revenue is accrued by physicians using group identification numbers (i.e., a physician group has its own NPI and the group's component physicians bill under that NPI). We treat these as unique “physician” observations.

each year. First, we determine whether the physician is vertically integrated as discussed above. We then assign the tax ID that represents the largest share of billings within the assigned VI status. On rare occasions, the VI status/tax ID pair may not coincide with the most frequent tax ID.⁷

Large hospital systems and physician groups often have more than one tax ID. We take a number of steps to aggregate these, both so that we can create system level measures of market power and so that physician groups that are owned by a hospital system but using a separate tax ID are correctly classified as vertically integrated. First, we use data from the American Hospital Association to aggregate different hospitals within a market into systems. Second, we use data from SK&A to map different physician tax IDs into systems. Our SK&A data contain physician National Provider Identifier (NPI) numbers, practice name, hospital owner, and system owner.⁸ We merge the SK&A data with our claims data and group tax IDs from our claims data based on the SK&A ownership information. We additionally aggregate tax IDs that are not hospital- or system-owned into group practices based on the SK&A practice name.

Match rates between NPIs in our claims data and the SK&A data are relatively low – matched providers account for only about one third of revenues. By filling in ownership information for NPIs that do not match to the SK&A data but have a tax ID that does match, we increase the match rate to about 55 percent. When we eliminate group practice NPIs, non-physician NPIs (i.e. nurses, suppliers, etc...) and very small

⁷ For example, consider a physician that bills under three VI status/ IDs as follows: VI Yes/Tax ID 1/share 25%; VI Yes/Tax ID 2/share 35%; VI No/Tax ID 3/share 40%. We would assign this physician to VI Yes/Tax ID 1.

⁸ We cleaned the SK&A data to ensure a certain degree of internal consistency. For example, we edit the system ownership data to ensure that if a physician reports a hospital owner and that hospital is a part of a system, then the correct system is filled in.

physician groups (tax IDs that have five or fewer NPIs in them), the match rate improves to 78 percent.

Our methodology captures a number of ownership changes that would not be captured using tax ID changes alone. We are in the process of hand checking the largest ownership changes (and will complete this in a later version of this paper). We do this using the IRS 990s (reports that non-profits are required to fill which contain tax IDs and organizational structure), by performing news searches, by visiting the web sites of larger providers, as well as by checking with the data provider. Furthermore, because the SK&A data do not include group practice NPIs, we hand checked many of the largest physician practices to ensure correct assignment of group practices.

Based on this data validation, it appears that the SK&A data contain many false positives, especially in earlier years. (There appear to be improvements in the quality of SK&A data over time.) Often, large, vertically integrated physician groups do not report that they are vertically integrated in the first years of our data, so we likely have some false positives that are due to correctly classifying vertically integrated physicians as vertically integrated after incorrectly classifying them as not integrated. This causes attenuation bias in our estimates, but also (because vertically integrated physicians have faster price growth) may explain why there appear to be pre-trends in some of our analysis.

Controlling for Changes in Competition

Many vertical mergers also have a “horizontal” merger component. Therefore, we will need to control for horizontal concentration of physicians. We do this using a

number of steps that are loosely based on Kessler-McClellan (2000). First, we compute the Herfindahl Hirschman Index (HHI) of market structure for each specialty/zipcode/year combination using allowed payments to physicians to compute shares and accounting for corporate ownership structure (called HHI_{zip1}). Next, we compute physician/year HHIs as a weighted average of the HHIs that the physician serves. Finally, in some analyses, we compute another specialty/zipcode/year HHI which is the weighted average of the physician/year HHIs for the physicians in that zipcode (called HHI_{zip2}).⁹ By construction, these HHIs will capture only localized effects of competition on prices.

We construct physician, rather than health care organization, level HHIs because changes of ownership only have one effect on HHIs constructed this way (i.e. they change the HHIs of the zip codes from which that the physician draws patients). In contrast, when constructed using organizations, ownership they have a second effect as well; namely, the acquired (i.e a physician) switches from having the HHI of organization A to the HHI of organization B. This second source of variation is akin to cross sectional variation in HHIs and is likely to suffer from a number of biases. Again, theory provides little empirically actionable guidance about when, whether, or how a firm should spread its rents from market power in some of its lines of business or locations across its broader set of operations.

⁹ Our HHI is subject to a number of sources of measurement error and endogeneity. We have confirmed that our main results are robust to instrumenting for HHIs by focusing only on the changes in HHI that are due to larger mergers (Dafny, Duggan, and Ramanarayanan (2012)). For the purposes of this analysis, we only report results using the endogenous measure of HHI as a control.

Constructing Prices

Our data include the transaction price for each service, where services are identified by Current Procedural Terminology (CPT) codes. We aggregate inpatient prices and outpatient prices using slightly different methods, and then compute an overall aggregated price per physician. For services provided on an inpatient basis, we move from service-level pricing to physician-level pricing as follows. First, we sum the prices for all inpatient services provided by an individual physician in a given year. Next, we compute the sum of what Medicare would have paid for the same services in that year. We then compute the ratio of the two, which we label *IPPrice*. Thus, *IPPrice* represents the ratio of the total fees generated by the physician for the insurer in question, relative to what the physician would have been paid had Medicare been the insurer. In addition to collapsing potentially thousands of individual prices into a single price per physician, this measure controls for regional variations in pricing, because Medicare fees are adjusted for regional differences in input costs. Note that private insurers and providers often use the same methodology to aggregate and describe their pricing, often comparing overall prices to what Medicare would pay.

Our method for computing outpatient pricing is a bit more complex because office based services will often generate a single bill for a non-integrated physician, but two distinct bills for an integrated physician. More specifically, Medicare pays two bills when a service is rendered in a hospital (or otherwise subject to hospital-based billing): a “professional fee” for the physician’s effort and a “facility fee” for the facility’s overhead. In contrast if that same physician provides the same procedure in a private office, Medicare combines payment for the physician’s time and overhead into a single

professional fee.¹⁰ Private payers sometimes follow Medicare's example. Thus, we combine the professional and facilities fees for the former case, treating any facility spending occurring for the same day and for the same patient as a physician bill as spending attributable to that physician.¹¹ This is important because if one only examines professional fees, services may appear to be more expensive when performed in the physician's office, leading to the misleading conclusion that vertical integration reduces spending. In reality, the aggregate fee is usually higher when the service is performed in an inpatient or hospital outpatient setting. Once we have computed the appropriate price for each outpatient service, we follow the same aggregation procedure described earlier and compute *OPPrice* as the payment relative to what Medicare would pay for the same service in an office setting. Finally, we aggregate all inpatient and outpatient prices to compute our overall measure *Price*.

To help isolate the role of facility fees in leading to higher prices, we examine the same procedures used to compute *OPPrice*, but compare spending against a different benchmark. Rather than comparing prices against what Medicare would pay in an office setting, we instead compute for bills with a facility charge what Medicare would have paid if the bill was submitted in a facility setting. For bills without a facility charge, we

¹⁰ For vertically-integrated physicians, under certain circumstances, Medicare's rules allow for a physician's office to become a part of the hospital's outpatient department. In these situations, physicians can provide the same care in the same location as before, but the vertically-integrated physician/hospital combination can now submit two bills.

¹¹ In practice, this is complicated because we need to connect the bill from the facility to the bill from the physician. For each outpatient facility bill, we determine whether any physician submitted a bill for services on the same day. If so, we assign the outpatient facility bill to the "main" physician that the patient used on that day, and simply include those procedures and charges as a part of the physician's bill. Because the same procedure will appear more than once on the combined bill, we code the quantity of a procedure as the maximum of the quantity provided by the physician and facility. To avoid cumbersome language, we refer to all of the spending that is attributable to the physician using this methodology as simply the physician's spending, even though some of the spending attributable to the physician is billed by a facility.

continue to calculate what Medicare would have paid in an office setting. When there is a facility charge, we determine Medicare reimbursements for all facility charges based on Medicare's Outpatient Prospective Payment System (OPPS), and we determine Medicare's prices for all physician charges based on what Medicare would have reimbursed in a facility setting.¹² We create a variable *UpcodeFF*, which gives the percent increase in Medicare reimbursements resulting from using facility based billing over office based billing. In our regressions, we will determine if *UpcodeFF* explains part or all of the increase in private prices.

Our price measures have some notable advantages and limitations. As mentioned earlier, we are measuring transactions prices at the most granular level possible and aggregating in a way that allows us to simplify our analysis by using a well-accepted numeraire – the Medicare price. One limitation is that we are only able to measure prices for approximately 75 percent of the spending attributable to physicians. This is because physicians perform a number of services that are not reimbursed using the physician fee schedule. These include services only reimbursed under the outpatient PPS system, for which there is no appropriate Medicare price as well as certain outpatient drugs (e.g., cancer infusion therapy drugs.)¹³

¹² OPPS uses complicated rules to determine reimbursements for sets of procedures. We follow the main elements of the reimbursement system. For example, a needle may be reimbursable if charged alone, but not reimbursable when charged on the same day as a surgical procedure. We made no attempts to alter the bills to impose any logical consistency between the physician bill and facility bill. Details are available by request.

¹³ Another limitation is that Medicare physician office prices for procedures that are almost always performed in hospitals seem to be outliers that make for inappropriate comparisons. As a result, we may grossly misstate price levels for these services both before and after integration. As long as integration does not affect the probability of these types of services being performed, this should not cause bias because we express our prices in logs. Said differently, an X percent price change is an X percent price change regardless of the price level.

The Effect of Vertical Integration on Prices

We use Difference in Differences regression to estimate the effects of integration on prices. The unit of observation is a physician (p) at time t . We assign each physician to one metropolitan area (m) in each year and to one specialty (s) across years. Allowing Y to be any of our three price variables, α_p to be a physician specific fixed effect, VI to be an indicator for whether the physician is vertically integrated, X to be a number of additional controls that are included in some specifications (more specifically, HHI , $UpcodeFF$, and an interaction between $UpcodeFF$ and VI), and $\alpha_{[ms]t}$ to be a time fixed effect (in some specifications, we allow for different time trends by metropolitan area, or the Cartesian product of metropolitan area and specialty)¹⁴, we run regressions of the form:

$$\ln(Y_{pt}) = \alpha_p + \alpha_{[ms]t} + \beta VI_{pt} + [\gamma X_{pt}] + \varepsilon_{pt} \quad (1)$$

We omit the transition year and physicians who were vertically integrated prior to the start of our analysis from the regressions. We cluster our standard errors conservatively, using the Cartesian product of a physician's "main" tax ID in each year and the MSA as the cluster variable. For example, if a physician practice is acquired by a hospital, the entire practice will be treated as one cluster.

The Effect of Vertical Integration on Total Health Spending

Regardless of the effect of integration on pricing, the performance of integration will ultimately be determined by its effects on healthcare expenditures (and, of course,

¹⁴ Because the Cartesian product becomes large, we aggregate specialties that account for less than 2.5% of spending.

quality, which we do not study directly.) In an experimental setting, one might imagine randomly assigning physicians to VI and non-VI status, randomly “assigning” patients to VI and non-VI physicians, and comparing spending trends for the two groups of patients. The resulting estimates of the effects of VI on spending would be unbiased. In the rest of this section, we describe how we attempt to generate unbiased estimates of the effect of VI in our decidedly non-experimental setting.

Effect of “Main” Primary Care Physician VI on Total Health Spending

As a first step towards identifying the effect of integration on expenditures, we examine how the share of a patient’s E&M visits that are to a VI Primary Care Physician (PCP) affects spending. For each patient in each year, we calculate the share E&M visits that are to VI PCPs. Of course, the decision to visit a VI PCP is endogenous. We therefore instrument for the share of PCP visits that a patient receives from a VI PCP with the VI status of that patient’s “main” PCP – i.e. the one with whom the patient has the largest number of E&M visits – in the first year in which the patient visits a PCP in the data. This amounts to examining how the integration status of a patient’s first “main” PCP affects spending, and rescaling the resulting magnitudes to account for the fact that not all patients continue to see their first PCP.

We use Difference in Differences regression to estimate the effects of a patient’s physician’s integration status on patient level spending. The unit of observation is an patient i at year t . We restrict this analysis to patients aged 25 to 64 for two reasons. First, pediatric patients and adults see different sets of physicians. Second, the ACA led to particularly large changes in coverage for the 18 to 25 age group during our sample

period. While we include a control for expected medical expenditures by age and gender, excluding this age group creates a more consistent sample over time. We also eliminate all individuals who have not visited a PCP in past or the present year. Finally, to create as clean of a control group as possible, we eliminate all individuals whose first main PCP integrated before the beginning of our data.

Allowing Y to be a measure of enrollee spending (logged annual enrollee spending when spending is greater than zero and an indicator for zero spending), α_i to be an individual specific fixed effect, and $\alpha_{[m]t}$ to be a time fixed effect (in some specifications, we allow for different time trends by metropolitan area), X_{it} to be time varying individual specific controls (in particular, expected expenditures based on patient age and gender), VI_{it} to be the share of PCP E&M visits that are to a VI physician, we run regressions of the form:¹⁵

$$Y_{it} = \alpha_i + \alpha_{[m]t} + \gamma X_{it} + \beta VI_{it} + \varepsilon_{it} \quad (2)$$

where we instrument for VI_{it} as discussed above.

Overall Effect of VI on Total Health Spending

Unfortunately, it is both difficult and overly simplistic to assign patients to individual physicians. Patients often see many different physicians in a given year, including both primary care physicians and specialists; some patients even see multiple physicians within the same specialty. Thus, our method of assigning a patient to a single physician oversimplifies how integration can affect patient/physician interactions. Our

¹⁵ We collect data on spending by age x gender from tables created by the Health Care Cost Institute. Source: <http://www.healthcostinstitute.org/SOA-1-2013>

second approach overcomes this problem by creating an instrument that measures the “exposure” of patients to integration, based on the locations (specifically, residence zip codes) of patients and the practice locations of integrating physicians. We correlate this instrument with changes in total health spending. The following example helps illustrate our method. Suppose that a physician group that largely serves zip code xxxxx is acquired by a hospital. Another physician group that largely serves zip code yyyyy remains independent. Thus, residents of zip code xxxxx face greater “exposure” to integration – they are increasingly more likely to be treated by integrated physicians. If acquisition affects spending, then we should observe different spending trends for patients in the two zip codes. The difference in the trends gives us the effects of exposure to integration. With this second IV approach, we do not have to assign patients to physicians.

We create the instrument as follows. We interact each physician’s average market share from across the years of the data with whether the physician undergoes VI from year t to $t-1$.¹⁶ We perform these calculations separately for primary care and specialist physicians and call the resulting differences $\Delta Share Primary Care VI$ and $\Delta Share Specialist Care VI$. At any given time, the sum of past changes in these prior changes in share serve as an instrument for the cumulative changes in VI in each zip code - we call the sum of these past shocks $\sum \Delta Share Primary Care VI$ and $\sum \Delta Share Specialist Care VI$.

We use Difference in Differences regression to estimate the effects of zip code level integration on zip code level spending. The unit of observation is a zip code (z) at

¹⁶ The results are similar if we allow the physician shares to vary each year. i.e. if we use a physician’s share of revenues in year $t-1$ rather than their average share.

year t . As in the analysis above, we restrict this analysis to patients aged 25 to 64. Allowing Y to be a measure of spending per enrollee (we use both mean and median spending per enrollee), α_z to be a zip code specific fixed effect, and $\alpha_{[m]t}$ to be a time fixed effect (in some specifications, we allow for different time trends by metropolitan area), X_{zt} to be time varying zip code level controls (in particular, expected expenditures based on patient age and gender, as well as a zip code level HHI), VI_{zt} to be the share of physician spending by Vertically Integrated providers in zip code z in year t (we separately measure the share of physician spending that is Vertically Integrated for primary care physicians and specialists, so VI_{zt} is a 2x1 matrix for each z, t), we run regressions of the form:

$$\ln(Y_{zt}) = \alpha_z + \alpha_{[m]t} + \gamma X_{zt} + \beta VI_{zt} + \varepsilon_{zt} \quad (3)$$

where we instrument for VI_{zt} as discussed above.¹⁷

One of the states in our sample has data limitations, insofar as some providers received substantial and unusual quality and cost control incentives from one of the data providers, but these incentive payments are not recorded in our data. We exclude this state from the current draft, but will add it to future versions of the paper after obtaining richer data.

¹⁷ Spending is highly skewed. We have confirmed that the results are similar if we windorize spending at the top .1 percent or top .01 percent of spending relative to expected spending by age x sex.

IV. Results

Summary Statistics

A substantial and growing share of physician spending is by vertically integrated physicians. Figure 1 presents the share of physician spending that is vertically integrated in 2007 and 2013 for inpatient procedures, outpatient/office procedures, and combined.¹⁸ The overall share of physician spending that is vertically integrated increases from 16.9 percent in 2007 to 26.5 percent in 2013. The level of vertical integration is higher for inpatient physician spending than outpatient, although the growth is similar.

Figure 2 examines heterogeneity in vertical integration across physician specialties. We aggregated physicians into five specialties. Primary care and surgery are the two largest specialties in the data, comprising 24 percent and 14 percent of resource utilization, respectively.¹⁹ We separately report cardiology and anesthesia/diagnostic radiology, which comprise 4 percent and 6 percent of resource utilization respectively. The remaining 52 percent of resource utilization is grouped into an “other” category. Surgery and cardiology are the most rapidly integrating specialties, showing growth rates of 85 percent and 117 percent respectively. Vertical integration of a few large cardiology groups pushes these numbers up, but even without them, cardiologists appear to have integrated more rapidly than other specialties. The sharp increase in integration among cardiologists has been noted elsewhere and coincided with a change in Medicare

¹⁸ Because our sample of metropolitan areas grows over time, the growth rate in Figures 1 and 2 is based on within metropolitan area variation. The intercept is determined by the revenue weighted average of the metropolitan area fixed effects.

¹⁹We measure resource utilization based on our Medicare price data. We aggregate General Practice, Family Practice, Internal Medicine and Pediatric Medicine to create our primary care specialty. We aggregate General Surgery, Orthopedic Surgery, Neurosurgery, Plastic Surgery, Hand Surgery, Thoracic Surgery, Colorectal Surgery, Cardiac Surgery, Vascular Surgery and Surgical Oncology to create our Surgery specialty.

reimbursement policy that made VI more attractive.²⁰ Anesthesiologists, diagnostic radiologists, and pathologists have been historically likely to either integrate with a hospital or to work in a practice with an exclusive relationship with a hospital. Consistent with this, we find high levels of integration in 2007, but see smaller increases in vertical integration for these specialties over time.

Table 1 presents summary statistics for the effects of VI by a patient's PCP on spending. We present statistics separately for individuals whose first PCP: (1) is already integrated when the patient joins our sample, (2) never integrates, (3) integrates during our study period. The average age and sex of enrollees is very similar across the three samples. The integration decision of an individual's first main PCP is very predictive of how likely the individual is to see a VI PCP for E&M visits. Individuals assigned to a first PCP who is always VI have average spending that is about 12 percent higher than individuals whose first PCP is never VI. This difference is larger (14 percent) for median spending. Spending of the individuals whose first PCP undergoes VI during our sample period is between those of the other samples.

Table 2 presents summary statistics for our zip code level analysis of the effect of VI on spending. Average monthly spending is \$306 at the mean and \$68 at the median, reflective of the skewed distribution of medical spending. Primary care physicians have higher levels of integration than specialists, but most of this is due to pre-existing differences from before our sample period, rather than more rapid increases in VI among these physicians. Most (76 percent) spending by physicians is by specialists rather than by primary care physicians.

²⁰See, for example: <http://www.nationaljournal.com/magazine/heart-palpitations-over-medicare-20111208>

The Effect of Vertical Integration on Prices

As a first check on whether physician pricing changes post integration, Figure 3 reports the coefficients on the on lags and leads relative to the date of integration. Prices of integrating physicians are rising faster than prices for non-integrating physicians even prior to integration, which may be a sign that these physicians are somewhat different or evidence that some integration occurs before we measure it. Starting in the year of integration, there is a clear break from trend with prices rising approximately 10 percent from the year before integration to the year after integration.

In Table 3, we present versions of the regression matching equation (1) in which post integration years are pooled into a single dummy Panel present results using *Price* as a dependent variable, Panel B present results using *OPPrice* as the dependent variable, and Panel C present results using *IPPrice* as the dependent variable. The first column for each dependent variable contains year x CBSA fixed effects, the second column contains year x CBSA x specialty fixed effects, the third column adds HHIs, and the fourth column adds in *UpcodeFF* and an interaction between *UpcodeFF* and VI.

Based on Column (2), our preferred overall specification for prices, we observe average increase in prices of 13.7 percent post integration.

Vertical mergers can affect pricing through their effects on horizontal market structure. To isolate the vertical effects, we control for horizontal physician market structure – measured by physician HHIs calculated using actual patient flows – in columns (3) of Table 3. Column (3) of Panel A suggests that overall prices are about 9.1 percent higher in monopoly markets than in perfectly competitive markets. Thus, we

conclude that VI leads to higher physician prices, independent of any effects of physician concentration.

Another immediate question is whether this is being driven entirely by facility fees or whether prices have gone up more generally. Two pieces of evidence speak to this question. First, Column (4) adds in as a control $\ln(\text{UpcodeFF})$, which can be thought of as the mark-up that Medicare would have paid on the bill because of facility fees. The interaction between $\ln(\text{UpcodeFF})$ and VI tells us how much more responsive actual prices are to this mark-up for physicians who are hospital owned. Importantly, the coefficient on VI falls from about 0.12 to about 0.09, which suggests that facility fees account for approximately one quarter of the price increase. The coefficient on $\ln(\text{UpcodeFF})$ of about 0.2 in Panel A suggests that private insurer reimbursements are much less responsive than Medicare to differences in place of service, even conditional on the insurers being willing to pay a facility fee – if the insurers were increasing their reimbursements by one percent because of facility fees when Medicare increased its reimbursements by one percent because of facility fees, then this coefficient would be one. Intriguingly, the positive coefficient on the interaction between $\ln(\text{UpcodeFF})$ and VI suggests VI physicians face reimbursement schemes with larger gaps between the facility fees and office reimbursements. Overall, our calculations suggest that for VI physicians, a dollar in Medicare upcoding potential from facility fees translates into roughly a dollar of reimbursements, but that this represents only a small portion of the overall price increase resulting from integration.

Panel C contains further suggestive, albeit less direct, evidence on the role of facility fees. Recall that in an inpatient setting, hospitals charge separate facility fees

regardless of whether a physician is vertically integrated. When calculating inpatient prices, no facility fees are included in the numerator or the denominator. Therefore, the 6 percent increase in inpatient prices is not caused by facility fees. The effect of vertical integration on outpatient prices is approximately twice as large as the effect on inpatient prices. While hardly dispositive, this is a second piece of suggestive evidence that part, but not all, of the outpatient price increases is a result of facility fees. It also suggests that inpatient price increases from VI are lower than outpatient price increases from VI for reasons beyond facility fees.

In Table 4, we examine heterogeneity across specialties in the effects of vertical integration on prices. Panel A presents results for overall prices, Panel B presents results for outpatient/office prices and Panel C presents results for inpatient prices. Within each panel, column (1) present results for primary care, column (2) presents results for surgery, column (3) presents results for cardiology, column (4) presents results for anesthesia/diagnostic radiology and column (5) presents results for a residual category.

Beginning with primary care in column (1), we find smaller than average effects of vertical integration on pricing. Interestingly, the price effects are smaller for outpatient prices than for inpatient prices, opposite to the general pattern. It could be that private insurers are unwilling to pay facility fees for some procedures performed by PCPs, or that such procedures are a comparatively small portion of what PCPs do. Regarding the former, the largest component of primary care spending is Evaluation and Management (E&M) visits. Medpac (2012) argued that Medicare should equalize payments for E&M visits across different places of service. Under Medicare's current pricing rules, a 15 minute E&M visit results in payments that are 70 percent higher when

billed on a hospital-based basis rather than an office setting. Based on an investigation of our data, as well as a discussion with our data provider, we determined that our insurer(s) do not reimburse for facility fees for E&M visits.

Columns (2) and (3) present results for surgery and cardiology respectively, two of the specialties that experienced faster rates of vertical integration. The price increases from vertical integration are above average for these groups. For example, cardiology prices increase nearly 34.3 percent post integration. These price increases are larger in the outpatient/office setting than in the inpatient setting, consistent with facility fees contributing to the higher prices. In column (4), anesthesia and diagnostic radiology experience a small and statistically insignificant price increase following vertical integration. Notably, anesthesiology and radiology are two primarily hospital-based specialties, meaning there is a strong complementarity between the demand for hospital services and the demand for these specialties' services. This complementarity may lead to a double marginalization problem under separate ownership, and therefore induce a single owner of both hospitals and the accompanying hospital-based specialists to lower prices. An important open question for future research is how much of the variation in price increases across different specialties is driven by facilities fees, referrals to more expensive care sites, changes in bargaining power, or other confounding differences among the types of groups being acquired or among the acquiring chains.²¹

In Table 5, we examine heterogeneity in the effects of vertical integration on prices, based on the characteristics of the acquiring hospital. In column (1), we include

²¹ The “market power” theory for why prices increase from vertical integration suggest that super-additive pricing can result, under some circumstances, from consumer switching among insurance products in search of the most desirable networks (Dafny et al., 2014)..

an interaction between vertical integration and the acquiring hospital's inpatient share in the metropolitan area. We include separate controls to allow the effect of vertical integration to differ across MSAs. Therefore, we are looking at whether physician prices increase more within a market for physicians acquired by a large vs smaller hospital system. We find statistically and economically significant evidence that physician prices increase more when physicians are acquired by hospital systems with larger inpatient shares. A monopolist hospital would, on average, increase vertically integrated physician prices by 20 percentage points more than a hospital with zero market share.

In column (2), we examine whether the acquiring hospital's ownership status affects the magnitude of the price increase. We categorize hospital systems as either for profit, non-profit, or government using the 2010 American Hospital Association (AHA) data. We also include an unknown category for hospital tax IDs in our claims data that do not own any hospitals in the AHA sample. An inspection of the data suggests that most of these are inpatient facilities which are not general acute care hospitals. There is little evidence of heterogeneity in post-Vertical integration price increases based on ownership status.

In Column (3), we examine whether the acquiring hospital's service type affects the magnitude of the price increase. Again using the 2010 AHA data, we categorize systems as acute care, pediatric, specialty (i.e. cardiac or orthopedic surgery) or psych/long-term care/other. Again, we create an unknown category. Price increases are entirely driven by acute care hospitals and by the unknown category.

Approximately 40 hospital systems are responsible for the vast majority of VI in our data. To further explore heterogeneity in our price results by acquirer characteristics,

we reran our main pricing equation, but included chain specific fixed effects for all hospital systems ever owning 100+ physicians. Figure 4 is a scatter plot of the number of physicians owned by each chain in 2013 compared with their chains estimated price increase from VI. Figure 5 is a scatter plot of the number of physicians acquired from 2010 to 2013 by each chain (the years in common across all our states) and the price increases.

The Effects of Vertical Integration on Spending: PCP Analysis

We begin by examining what happens to total spending for patients whose PCPs are acquired. Table 6 provides visual evidence of our main results. We first demonstrate that when a patient's PCP integrates, that patient receives substantially more care from a VI PCP (i.e., the patient does not immediately switch to a non-VI PCP) as compared to patients in the control group. The figure in the first row and first column presents the first stage relationship between the share of an individual's PCP E&M visits that are to VI providers and the VI status of the individual's first main PCP. VI of the individual's first main PCP leads to an immediate increase of approximately 70 percent in the share of PCP E&M visits that are VI.

Turning to spending, the figure in the first row, second column shows the growth in health spending by patients of VI PCPs from four years prior through four years after integration, when compared with patients of PCPs in the control group. There is a steady increase in spending, conditional upon having positive spending, that begins well before integration. This trend reverses after integration. At first blush, this suggests that PCP integration leads to lower spending; we will examine this finding in more detail below.

Row 1, column 3 examines whether integration of an enrollee's first main PCP affects the probability of having positive spending. There is little definitive pattern here and the magnitudes are small.

We further investigate the mechanism through which VI affects spending trends by splitting the sample. The first subsample, which contains 31 percent of patient years, consists only of those patients who continue to see their first main PCP in each year in the data. The second subsample consists of the remaining 69 percent of patient years; i.e., those patients who either do not have a PCP E&M visit in some year or who switch their main PCP over time. We then rerun our spending analysis on each subsample. The second row of results in Figure 6 contains results for the first subsample; the third row contains results for the second subsample.

The dramatic increase in VI Share of PCP Visits depicted in the first figure in the second row reflects the tautological relationship between the first main PCP's VI status and the share of visits to a VI PCP, for those patients who have kept their first main PCP. Turning to spending, the second figure in row 2 shows that spending is relatively flat until two years prior to VI, compared with the patients in the control group for this subsample.²² There is a small increase in spending in the year prior to VI, followed by larger increases concurrent with and after VI. There are at least two different explanations for these patterns. First, it could be that patients who stick with the same PCP are more likely to suffer negative health shocks that happen to coincide with the timing of integration. Alternatively, it could simply be that VI leads to higher spending.

²² Because the sample in row 2 is restricted to patients with an E&M visit with their first PCP in the year, all patients have positive spending each year, so we do not report a third figure in this row.

Row 3 presents results for those patients who switch main PCPs at any point. Recall that patients who keep their first “main” PCP in all years and have that PCP integrate end up having nearly 100 percent of their visits to VI PCPs after their first main PCP integrates. Patients who switch from their first main PCP have a different experience. If their first main PCP integrates but they switch to another PCP, then only about 50 percent of their visits, in the years after their first main PCP integrates, will be to a VI PCP. (Both percentages are relative to those for their respective control groups.) Moreover, spending for these patients appears to increase prior to VI by their first main PCP, and then decrease afterwards.

Taken together, these findings suggest VI by a patient’s first “main” PCP could lower spending not because of better clinical management by the PCP, but *because some patients switch to less expensive PCPs*. To investigate this hypothesis, we rerun the spending regression but allow for the effect of first main PCP integration to vary according to the time between when that PCP integrates and when the patient stopped seeing that PCP.²³ We focus on only the main specification, which uses as logged spending as the dependent variable. Furthermore, because of the large number of relevant coefficients, we omit standard errors. Results are presented in Figure 7. The figure in the first row and first column plots results for patients who last see their first “main” PCP between 1 and 4 years prior to that PCP becoming VI. There is a decline in spending just after this period – i.e., from year -1 to year 0. By this time, the patient has

²³ We provide two clarifying examples. First, suppose that in all years subsequent to being assigned to a first main PCP, an enrollee continues to have E&M visits with this PCP, but has more E&M visits with another PCP. In this case, the patient would be coded as stopping having the first main PCP as a main PCP after the first year. A second example, suppose that until 4 years after a patient’s first main PCP is VI, the patient only visits other PCPs, but reverts to seeing the first main PCP 4 years post VI. In this case, the patient would be coded as stopping having the first main PCP as a main PCP four years post integration.

selected a new main PCP so it is unlikely that the spending decline is causally related to VI by the first “main” PCP. Indeed, across the 6 panels of Figure 7, there is consistent evidence that the decline in spending that we observe when a patient’s first “main” PCP becomes VI occurs in the year after the last year that PCP is the patient’s “main” PCP. We are hard pressed to attribute this decrease to VI by the original PCP. Instead, it appears that patients are simply switching to lower cost PCPs.²⁴ Conversations with our data provider suggest this is possible in light of trends towards more restrictive network structures (i.e. certain high cost systems being excluded from narrower networks) and higher patient cost sharing.

Overall, these results provide no evidence that PCP VI leads to lower spending because of improvements from clinical integration. Instead the evidence is consistent with PCP VI leading to higher costs for those patients who keep their PCP, and lower costs for those patients who switch to other PCPs.

How large of a spending increase might be attributable to integration by PCPs? Table 6 presents a pooled version of the results, restricting the sample to only those enrollees who continue to see the same “main” PCP each year after they first see that PCP. Column (1) looks at the endogenous relationship between the share of E&M visits that are to a VI PCPs and spending. This regression is presented for completeness, but as the selected nature of the sample ensures that patients are largely seeing the same PCP in each year, we do not suggest any interpretation of the result. Column (2) confirms that

²⁴ Even among the patients who have already changed their “main” PCP, VI by their first “main” PCP still leads to increases in the share of PCP E&M visits for that patient that are to VI PCPs. One possible explanation is that some of these patients may be seeing multiple PCPs (including the first “main” PCP). Another is that these patients may be seeing another PCP in the same practice who therefore had a similar change in VI status. Understanding these dynamics is interesting, but beyond the scope of the current paper.

when an enrollee's first main PCP becomes VI that the enrollee has a higher share of PCP visits with VI PCPs. In column (3), an enrollee's first main PCP becoming VI leads to spending that is approximately 2.5 percent higher. The result is suggestive, but not statistically significant at conventional levels. Column (4) presents the IV results, which suggest that VI leads to a (statistically significant) spending that is approximately 3 percent higher. Overall, the results suggest that if anything, VI by PCPs leads to higher spending, although the results are far from dispositive.

Effects of Vertical Integration on Spending: Exposure to Integration Analysis

As previously discussed, it can be difficult to assign patients to physicians. Thus, we complement the previous analysis by examining how “exposure” to VI affects spending. The analysis has two endogenous variables – *Share Primary Care VI* and *Share Specialist Care VI* and two instruments. Figure 8 presents the relevant first stage regressions for the instruments. Both first stages are run from the same specification, which includes lags and leads of all three instruments, as well as all of the controls in equation (3). Given the large number of parameter estimates in these models, we present only the key ones. Figure 8A presents the effect of Δ *Share Primary Care VI* on the share of PCPs that are VI. Next, Figure 8B presents the effect of Δ *Share Specialist Care VI* on the share of specialists that are VI. Overall, the first stage results confirm that when the physicians who serve an area become VI, that the share of patient care provided by VI physicians increases.

Figure 9 examines how VI affects spending and has four rows. We separately examine the effect of Δ *Share Primary Care VI* (presented in row 1), and Δ *Share Specialist Care VI* (presented in rows) on spending. Column (1) presents

results from regressions that use logged mean spending as the dependent variable, whereas column (2) presents results from regressions that use logged median spending as the dependent variable.²⁵ For example, column (1), row (1) examines how lags and leads of Δ Share Primary Care VI affect logged mean zip code level spending.

Given the large number of estimates presented, we discuss only the most important findings. The evidence is neither clear nor consistent. The figures in the first row show an ongoing decline in both mean and median spending that precedes PCP VI by as much as four years and continues for as much as four years after VI. The figures in the second rows show a similar long term trends for specialist VI, but in this case there is an ongoing increase in spending. In future analyses, we will further investigate what is driving these differences.

Estimates in Table 7 pool the post period years on spending for all physicians (i.e., PCPs and specialists). Columns (1) and (2) present results for mean spending, whereas columns (3) and (4) present results for median spending. Beginning with column (1) we present results looking at the relationship between the actual share of care provided by VI PCPs and mean spending per capita in the sample with incentives to providers. We find that a market with all VI PCPs would have medical spending that is a (statistically insignificant) 1.6 percent lower. In column (2), we instrument for the share of PCPs who are VI and find that in markets with all VI PCPs, spending would have been a (statistically insignificant) 2.2 percent lower. Columns (3) and (4) uncover statistically significant decreases in median spending when PCPs become VI, although as already noted given the pre-trends, there is no reason to interpret these results causally. Finally,

²⁵ Some zipcode x year cells have no spending and are therefore dropped from this analysis. These cells represent less than .0001 percent of enrollee months, so in the interests of brevity are ignored.

note that the zip code level results on the effects of PCP VI are sufficiently noisy that they are not inconsistent with the results in the prior section (which are anyway constructed using just a subset of patients and physicians) which suggest that if anything PCP VI increases total spending.

Turning to the results for the share of specialists who are VI, in columns (2), a market with all VI specialists has mean spending that is a (statistically insignificant) 10 percent higher than a market with no VI specialists. In column (4), a market with all VI specialists has median spending that is a (statistically significant) 40 percent higher than a market with no VI specialists. As median spending is about 1/5th of mean spending, this is similar to an increase at the median of about 8 percent of mean spending. As the largest jumps in spending occur the year prior to specialist VI, it is far from clear whether one should interpret these results causally.

Table 8 decomposes the spending results into for a number of different spending categories (using BETOS codes to categorize spending other than inpatient).²⁶ These results provide little evidence for any of the theories of how VI might affect spending.

Conclusion

This paper examines the effects of the acquisition of physician practices by hospitals. We find that from 2007-2013 there has been a substantial amount of VI, with the share of spending by physicians whose practices are owned by hospitals increasing by approximately ten percentage points or more fifty percent.

²⁶Berenson-Eggers Type of Service (BETOS) codes are an encyclopedic, hierarchical categorization of the HCPCS and CPT codes. We only break spending into the coarsest BETOS categories.

These acquisitions lead to substantial price increases for the acquired physician groups, with average price increases of nearly fourteen percent. These price increases vary substantially across specialties, with PCP prices increasing by approximately twelve percent and prices for cardiologists increasing by approximately thirty four percent. Our calculations suggest that aggregate physician prices were approximately one and a third percent higher in 2013 than they would have been had hospital ownership of physician groups remained at its 2007 level.²⁷ These price increases do not appear to be explained by “traditional” increases in horizontal market power within physician markets. However, these price increases are larger for hospital systems that are more dominant within their market – we estimate that physician prices would increase over 20 percent more when acquired by a monopolist hospital system than by a hospital system in a perfectly competitive market. Finally, we estimate that approximately one quarter of the price increases are due to increased exploitation of reimbursement rules that allow hospitals to charge “facility fees” for services by hospital owned physicians.

We also examined how these acquisitions affected total spending. Here, the evidence was less conclusive. Integration of primary care physicians seems to have little effect on spending, although our preferred analysis suggests PCP VI leads, if anything, to higher spending. There is no evidence that VI by specialists leads to lower spending. Again, if anything, spending is higher after specialist VI than before, although it is difficult to determine whether these results are merely a continuation of trend. Finally, we note that most of the results on expenditures are not sufficiently precise for us to distinguish between three hypotheses: (1) VI increases prices but decreases utilization

²⁷ This follows from the fact that the share of physicians who are VI increased by 9.7 percentage points and that VI increases prices by 13.7 percent price.

sufficiently to offset the price increases (2) VI increases prices and has no effect on utilization (3) VI increases prices and leads to moderate increases in utilizations.

Physician price increases are a small enough share of spending that it is difficult to detect the effect of the price increases that we uncover on overall spending.

This paper raises a number of important questions for future work. First, future work should further examine how VI affects the expenditures of specialty care at a more granular level, such as by studying episode level spending. Second, future work should examine the effects VI on measures of quality, such as hospitalizations due to potentially avoidable complications. Third, future work should dig deeper into the reasons for the variation in price increases from vertical integration across acquisitions. Relatedly, future work should perform a more detailed analysis of how much market power physician groups have, and how much the market power of physician groups increases as a result of mergers.

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Figure 1: Share of Physician Spending Vertically Integrated, 2007 vs 2013

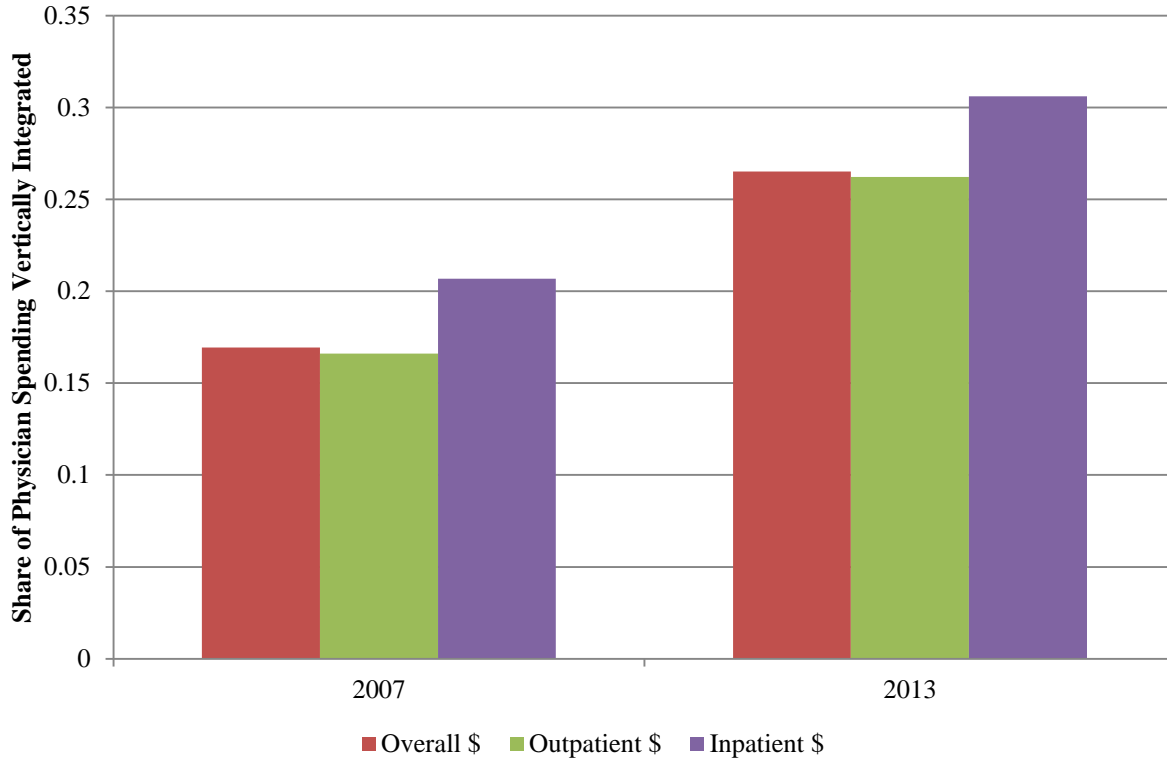
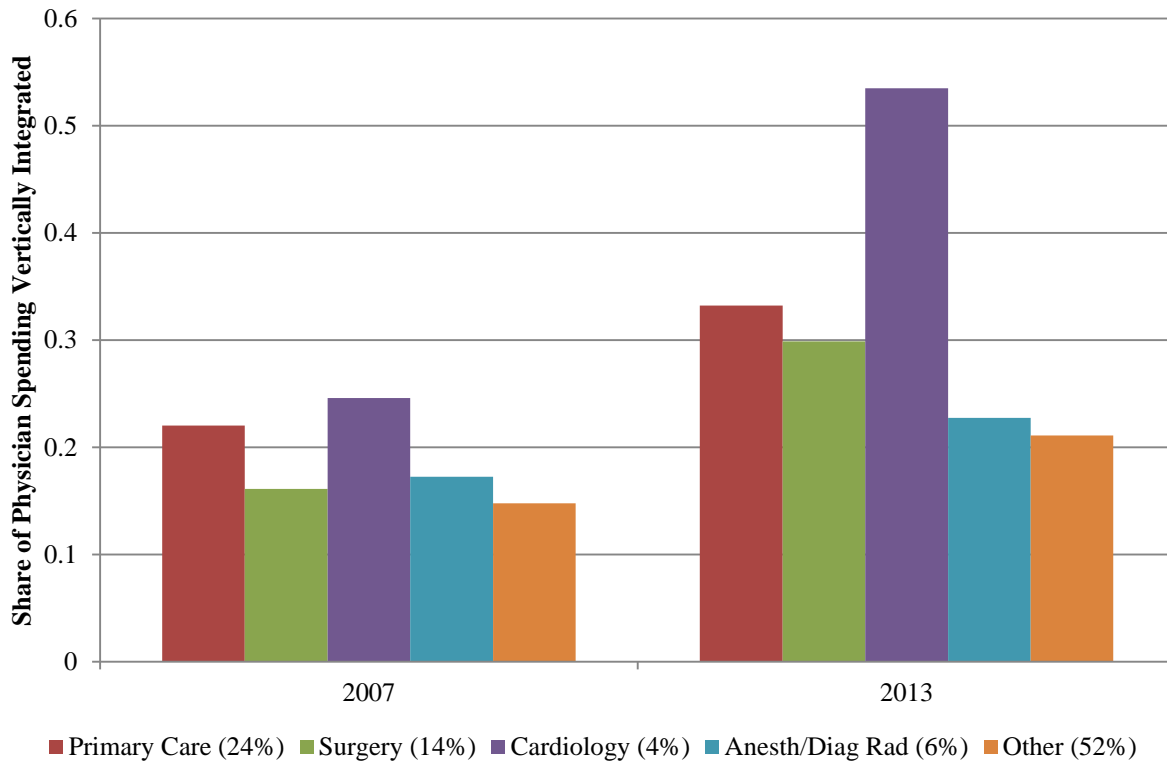
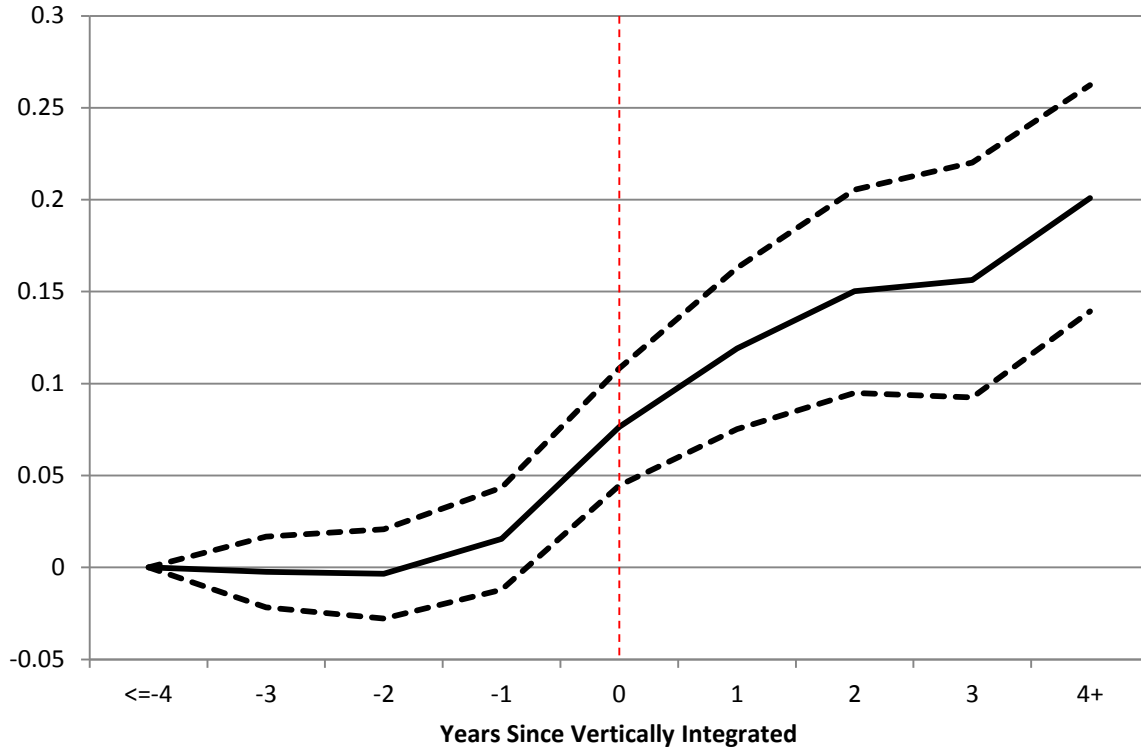


Figure 2: Share of Physician Spending Vertically Integrated, 2007 vs 2013 (By Specialty)



Notes: Numbers in parentheses by specialty labels are the share of physician spending attributable to each specialty.

Figure 3: Effect of Vertical Integration on ln(Price)



Notes: Regressions contain physician and year x CBSA x specialty fixed effects, as well as a physician specific HHI. Unit of observation is the physician x year. Regressions are weighted by Medicare PFS allowed. Dashed lines represent 95% confidence based upon standard errors clustered by the cartesian product of a physician's main tax ID in each year and the physician's specialty.

Figure 4: Avg Price increase for Integrating Physicians by Number of NPIs in Purchasing system in 2013

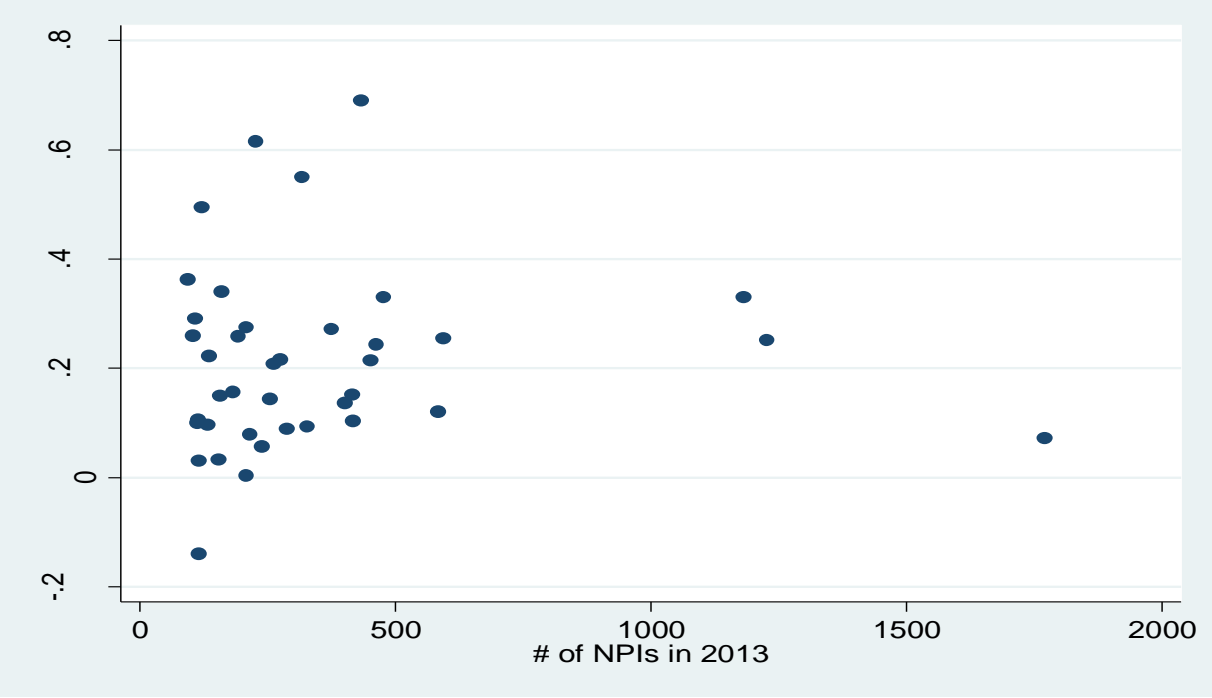
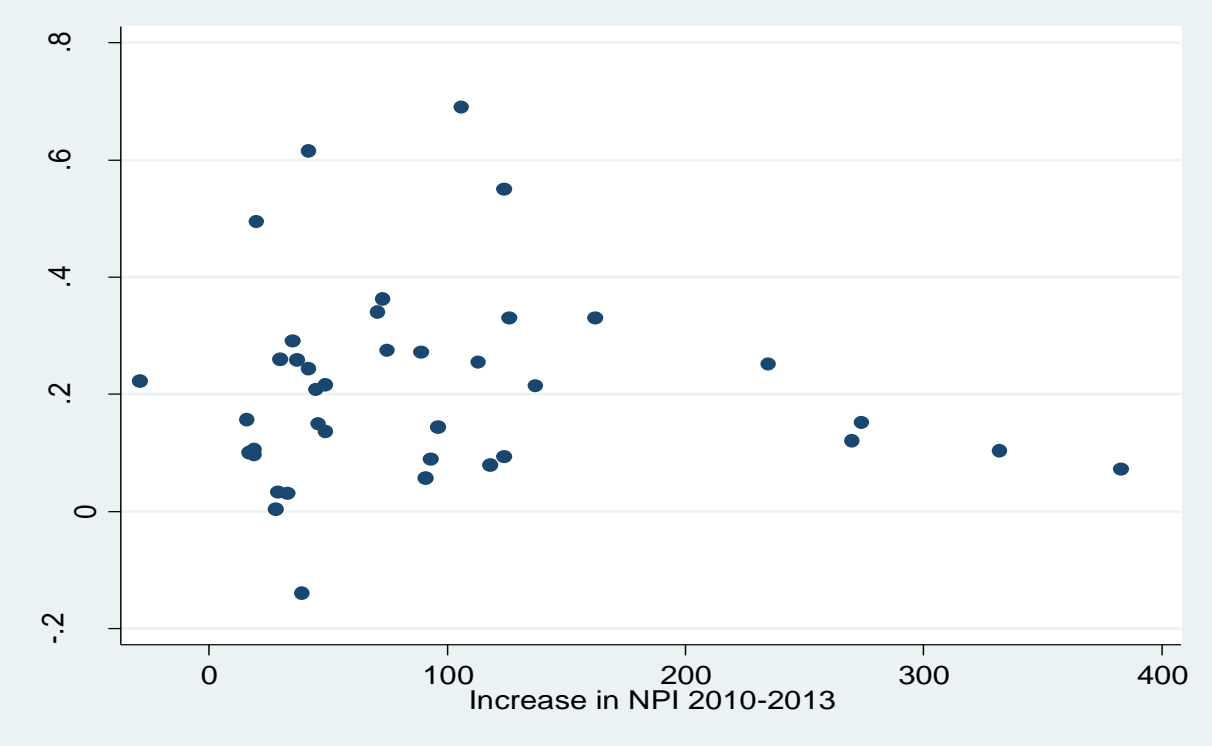


Figure 5: Avg Price increase for Integrating Physicians by Change in Number of NPIs in Purchasing system in 2010 to 2013



Notes: Each observation represents one of the chains that at some point has 100+ NPIs in our data.

Figure 6: Effect of 1st main PCP VI on Spending

Panel A: Full Sample

Figure 6A: Dep Var= VI Share of PCP E&M Visits

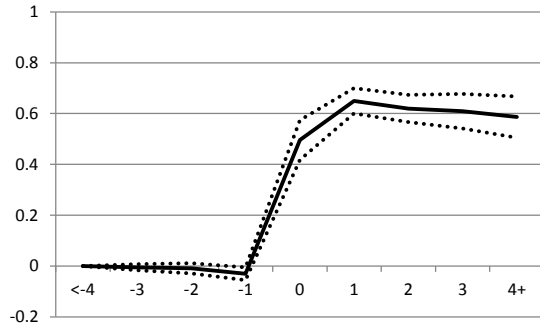


Figure 6B: Dep Var = ln(spending) | spending >0

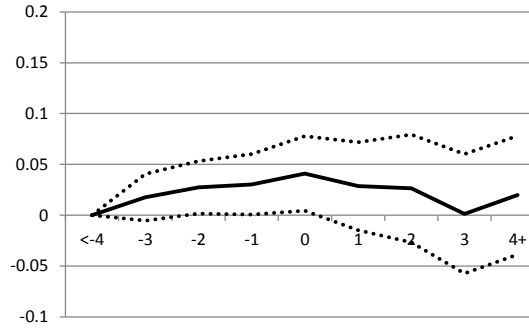


Figure 6C: Dep Var = P(spending >0)

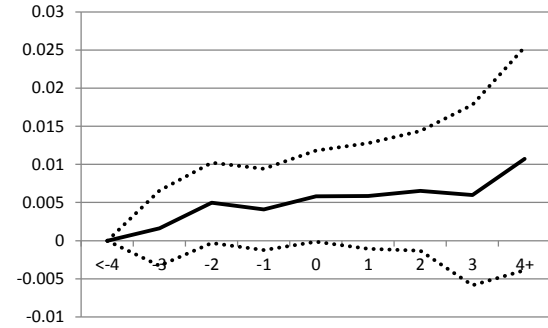
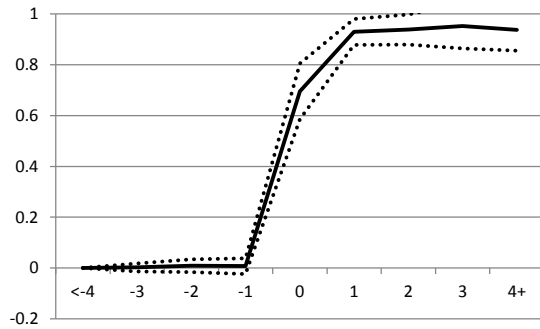


Figure 6A: Dep Var= VI Share of PCP E&M Visits



Panel B: Patients Staying with Same PCP in all years

Figure 6B: Dep Var = ln(spending) | spending >0

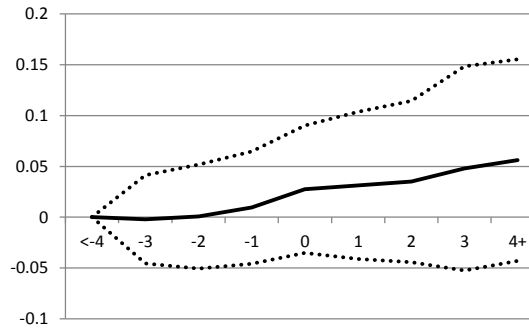
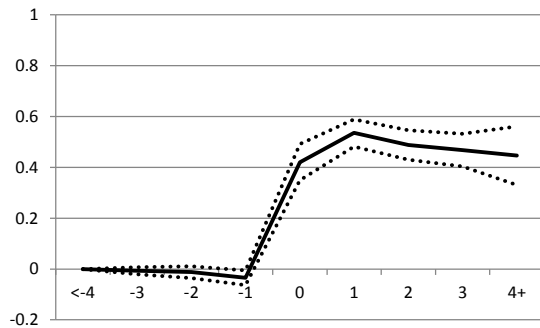


Figure 6A: Dep Var= VI Share of PCP E&M Visits



Panel C: Patients who Switch PCPs at some point

Figure 6B: Dep Var = ln(spending) | spending >0

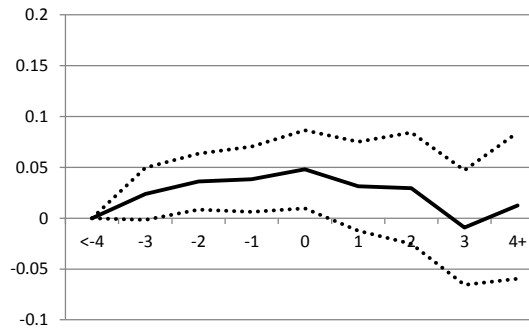
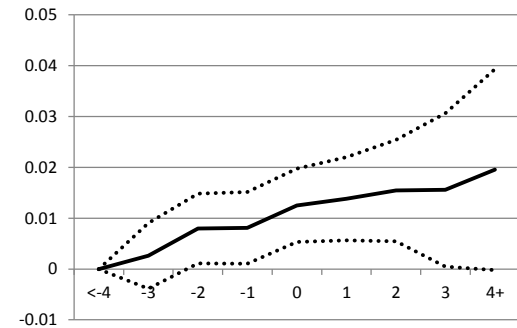
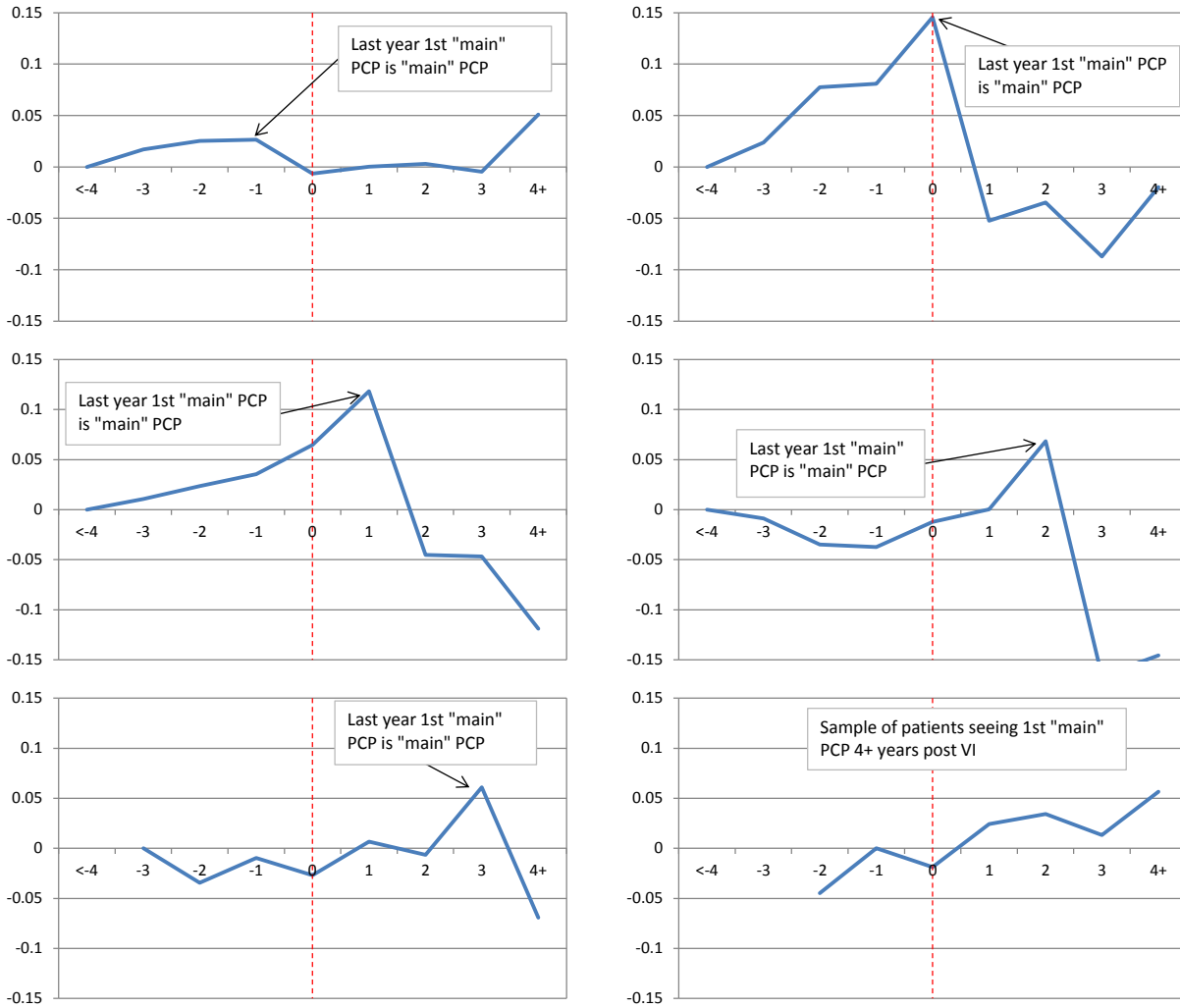


Figure 6C: Dep Var = P(spending >0)



Notes: Unit of observation is the enrollee year for enrollees who have had a PCP visit in the current year or prior years and whose "main" PCP in the first year they are in the data was not VI. Regression contains enrollee and CBSA x year fixed effects. Dashed lines represent 95% confidence based upon standard errors clustered by the cartesian product of each enrollee's first main PCP's main tax ID in each year and the physician's specialty.

Figure 7: Effect of 1st main PCP VI on Spending
 (Heterogeneity Based on Last year enrollee sees 1st "main" PCP)
 Dep Var = $\ln(\text{spending}) \mid \text{spending} > 0$



Notes: Lines represent lead and lag coefficients for the effect of an enrollee's first main PCP becoming VI on spending. Unit of observation is the enrollee year for enrollees who have had a PCP visit in the current year or prior years and whose "main" PCP in the first year they are in the data was not VI. Regression contains enrollee and CBSA x year fixed effects.

Figure 8: First stage regressions

Figure 8A: Dep Var = Share of Primary Care VI

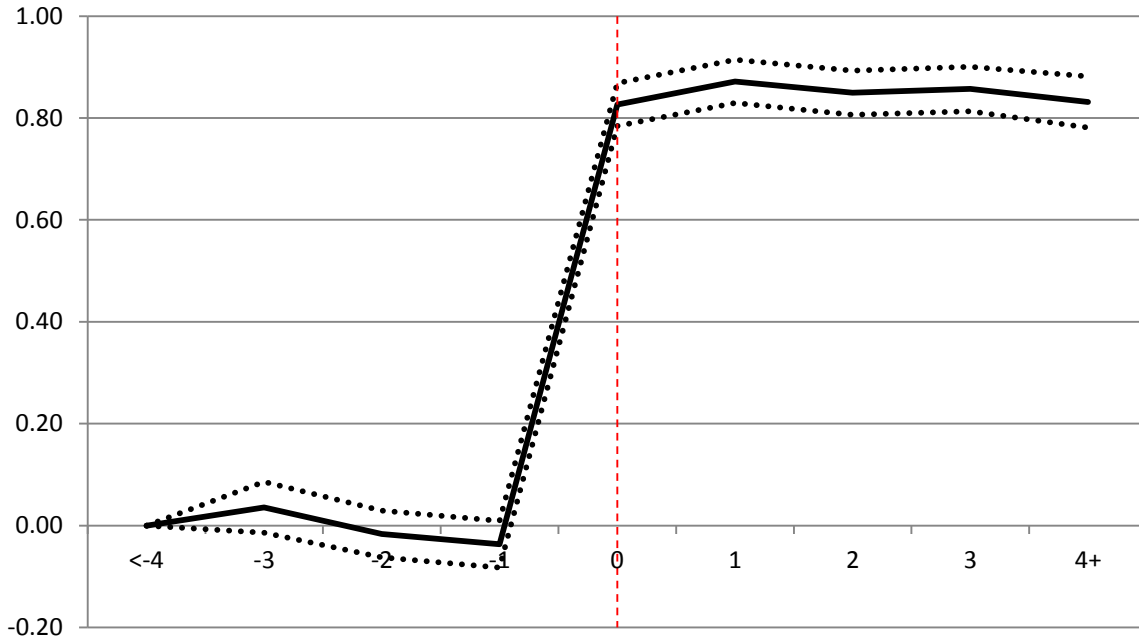
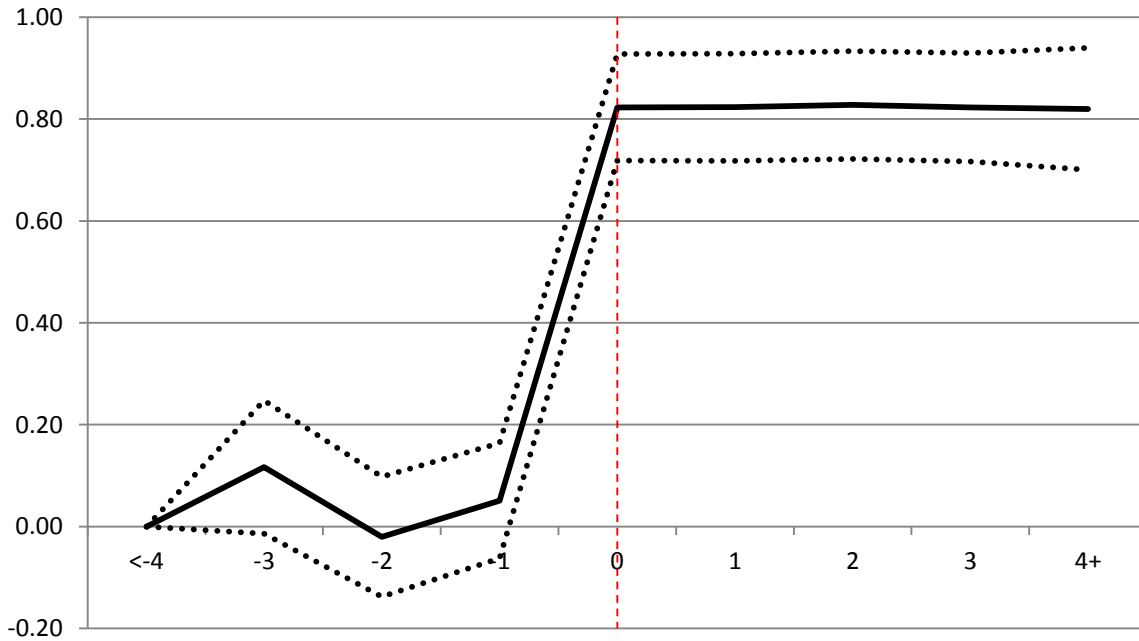
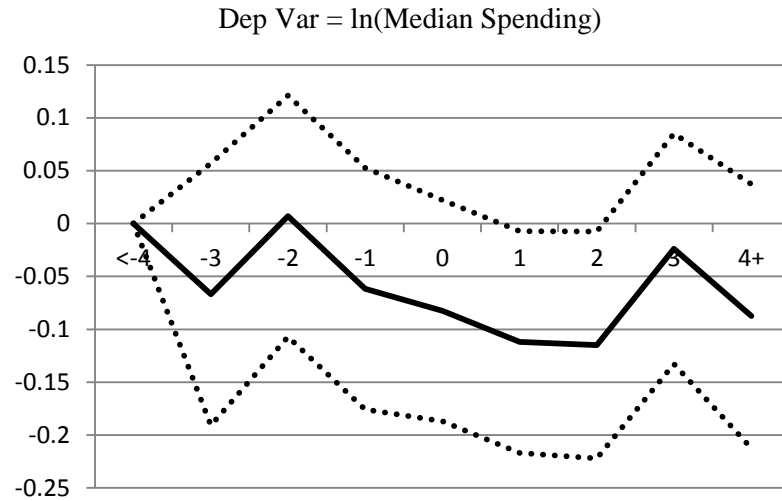
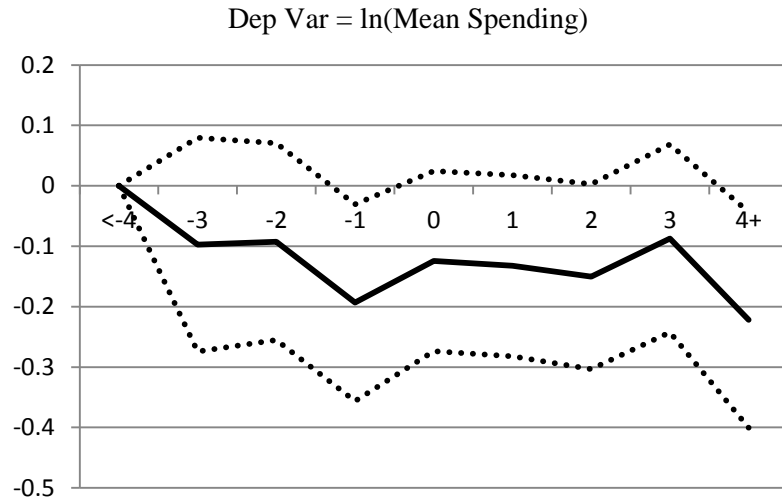


Figure 8B: Dep Var = Share of Specialty Care VI



Notes: Unit of observation is the zip code x year. Figures present the key instrument for regressions using as a dependent variable each of the three endogenous variables. All regressions were run using the same set of independent variables: lags and leads of dHHI, lags and leads of dShare of Specialty Care VI, lags and leads of dShare of Primary Care VI, zip code fixed effects, cbsa x year fixed effects, and HCCI's estimated average spending for the sample based on age and gender. Regressions are weighted by enrollee months. Point estimates and upper and lower bounds of 95% confidence interval are reported.

Figure 9: Reduced Form Regressions
 Indep Var = Δ Share of Primary Care VI



Indep Var = Δ Share of Specialist Care VI

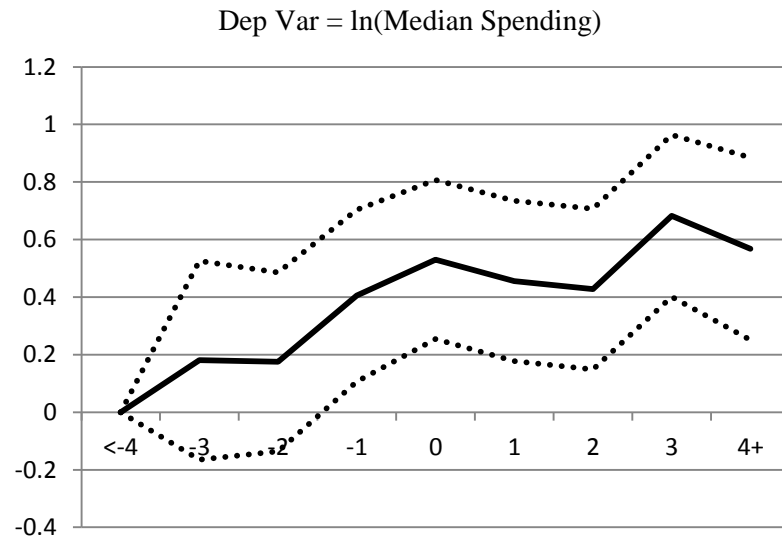
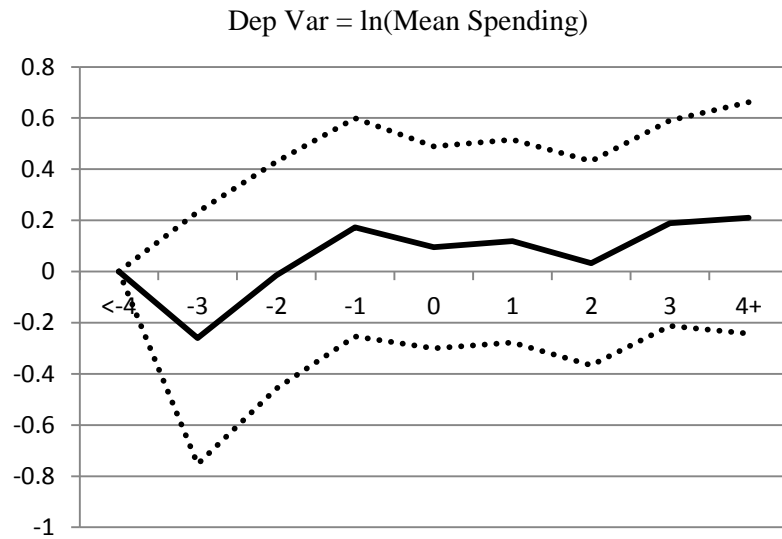


Figure 10: Average Price Increases from VI for all physicians of large systems vs Average Cost Increases for PCPs of the same large systems

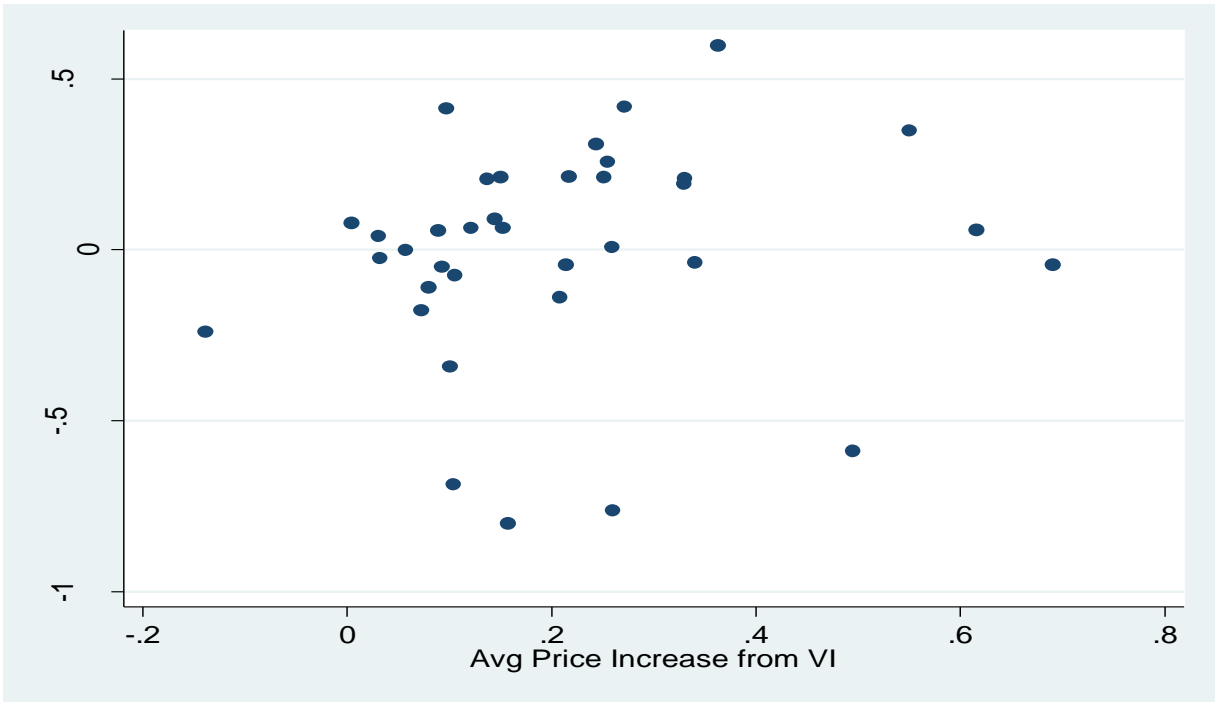
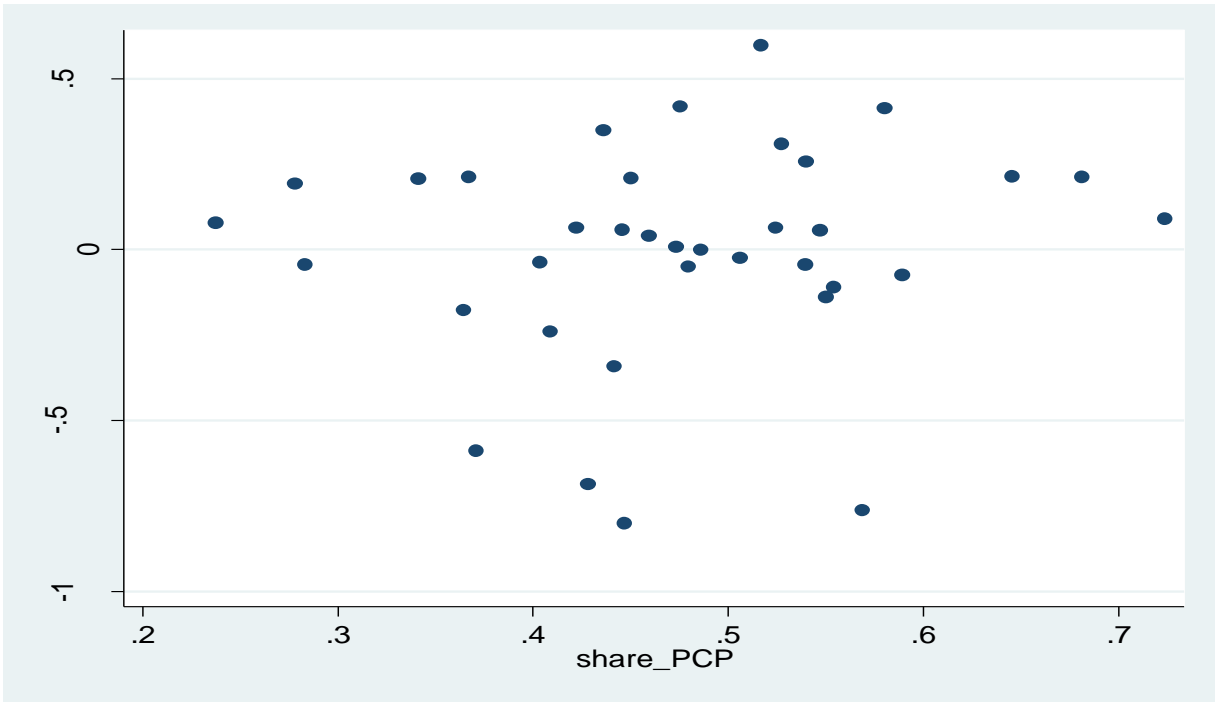


Figure 11: Average Price Increases from VI for all physicians of large systems vs share of owned Physicians that are PCPs



Notes: The Y variable in Figures 10 and 11 is the average cost increase by organization recovered from a regression like in Table 6, column (3), but rerun with chain level fixed effects for all chains ever having 100+ NPIs. We compare these with the average price increases by organization from VI and with the share of an organization's VI physicians which are PCPs.

Table 1: Patient Level Summary Statistics

	N	Mean	Median	Std Dev	Min	Max
<i>First PCP is Never VI</i>						
Age	4,395,785	45.38	46.00	9.65	26.00	63.00
Female	4,395,785	0.57	1.00	0.50	0.00	1.00
Age x sex Risk Score	4,395,785	1.27	1.22	0.42	0.40	2.34
Share of PCP visits that are VI	3,411,220	0.03	0.00	0.15	0.00	1.00
Average monthly spending	4,395,785	360	90	1,470	0	629,224
Has some spending in year	4,395,785	0.93	1.00	0.26	0.00	1.00
<i>First PCP is Always VI</i>						
Age	1,354,581	45.28	46.00	9.80	26.00	63.00
Female	1,354,581	0.57	1.00	0.49	0.00	1.00
Age x sex Risk Score	1,354,581	1.27	1.21	0.43	0.40	2.34
Share of PCP visits that are VI	1,075,570	0.93	1.00	0.24	0.00	1.00
Average monthly spending	1,354,581	404	103	1,579	0	324,159
Has some spending in year	1,354,581	0.94	1.00	0.24	0.00	1.00
<i>First PCP undergoes VI</i>						
Age	704,158	46.18	47.00	9.60	26.00	63.00
Female	704,158	0.57	1.00	0.49	0.00	1.00
Age x sex Risk Score	704,158	1.30	1.24	0.43	0.40	2.34
Share of PCP visits that are VI	504,656	0.36	0.00	0.47	0.00	1.00
Average monthly spending	704,158	385	94	1,640	0	488,028
Has some spending in year	704,158	0.92	1.00	0.27	0.00	1.00

Notes: Unit of observation is the patient x year. Sample is patients aged 25 x 64 with a PCP visit in the past or current year.

Table 2: Zip Code Summary Statistics

	N	Mean	Std Dev	Min	Max
<i>Avg Spending per enrollee x month</i>					
Mean	13,728	306	68	0	6,923
Median	13,728	65	17	0	4,827
Mean = 0	13,728	0.000000	0.000506	0.000000	1.000000
Median = 0	13,728	0.000014	0.003739	0.000000	1.000000
<i>Share of Spending, by Category</i>					
Durable Medical Equipment	13,725	0.02	0.01	0.00	0.58
Evaluation and Management	13,725	0.17	0.03	0.00	1.00
Other	13,725	0.13	0.05	0.00	0.84
Imaging	13,725	0.13	0.02	0.00	0.96
Procedures	13,725	0.24	0.04	0.00	0.90
Tests	13,725	0.08	0.01	0.00	0.74
Inpatient Facility	13,725	0.23	0.06	0.00	0.93
Specialist Share of Physician Spend	13,710	0.76	0.06	0.00	1.00
<i>Consolidation Measures</i>					
Share Primary Care VI	13,634	0.24	0.20	0.00	1.00
Share Specialist Care VI	13,625	0.14	0.12	0.00	1.00
HHI	13,728	0.32	0.09	0.05	1.00
$\Sigma\Delta$ Share Primary Care VI	13,728	0.11	0.37	0.00	2.49
$\Sigma\Delta$ Share Specialist Care VI	13,728	0.05	0.09	0.00	2.08
$\Sigma\Delta$ HHI	13,728	0.00	0.01	-0.11	0.13
<i>Percentiles of Enrollee months per zip code x year</i>					
25th percentile	556				
50th percentile	3,925				
75th percentile	12,148				
Number of zip codes	2,272				

Notes: Unit of observation is the zip code x year. Sample is patients aged 25 x 64. Observations are weighted by the number of enrollee months in each zip code x year.

Table 3: Effect of Vertical Integration on Physician Prices

Panel A: Dep Var = ln(Price)				
	(1)	(2)	(3)	(4)
Vertical Integration	0.148	0.128	0.126	0.0918
	[0.0208]***	[0.0206]***	[0.0205]***	[0.0145]***
Physician Specific HHI			0.0873	0.0895
			[0.0237]***	[0.0218]***
ln(UppcodeFF)				0.211
				[0.0101]***
(Vertical Integration)*ln(UppcodeFF)				0.267
				[0.0343]***
Year x CBSA FEs	x	x	x	x
Year x CBSA x Specialty FEs		x	x	x
R-sq	0.913	0.92	0.92	0.929
N	250,105	250,105	250,105	249,026
Panel B: Dep Var = ln(OPPrice)				
	(1)	(2)	(3)	(4)
Vertical Integration	0.16	0.136	0.134	0.102
	[0.0224]***	[0.0222]***	[0.0222]***	[0.0157]***
Physician Specific HHI			0.0766	0.0798
			[0.0246]***	[0.0227]***
ln(UppcodeFF)				0.203
				[0.00970]***
(Vertical Integration)*ln(UppcodeFF)				0.283
				[0.0356]***
Year x CBSA FEs	x	x	x	x
Year x CBSA x Specialty FEs		x	x	x
R-sq	0.901	0.91	0.91	0.92
N	245,208	245,208	245,208	244,129
Panel C: Dep Var = ln(IPPrice)				
	(1)	(2)	(3)	(4)
Vertical Integration	0.068	0.0586	0.0558	0.0545
	[0.0160]***	[0.0149]***	[0.0149]***	[0.0157]***
Physician Specific HHI			0.174	0.173
			[0.0323]***	[0.0323]***
ln(UppcodeFF)				0.0229
				[0.00956]**
(Vertical Integration)*ln(UppcodeFF)				0.00269
				[0.0246]
Year x CBSA FEs	x	x	x	x
Year x CBSA x Specialty FEs		x	x	x
R-sq	0.98	0.982	0.982	0.982
N	120,814	120,814	120,814	120,562

Notes: Unit of observation is the physician x year. We exclude the transition year from non-VI to VI. Regressions are weighted by Medicare PFS allowed. Standard errors in bracket are clustered by the cartesian product of a physician's main tax ID in each year and the physician's specialty. * p<0.10, ** p<0.05, *** p<0.01

**Table 4: Effect of Vertical Integration on Physician Prices
(By Physician Specialty)**

Panel A: Dep Var = ln(Price)					
Specialty (% of Phys Spend)	Primary Care (24%)	Surgery (14%)	Cardiology (4%)	Anesth/Diag Rad (6%)	Other (52%)
	(1)	(2)	(3)	(4)	(5)
Vertical Integration	0.1110 [0.0226]***	0.0900 [0.0476]*	0.2950 [0.0364]***	0.0390 [0.0708]	0.1290 [0.0270]***
R-sq	0.895	0.926	0.792	0.868	0.903
N	75,808	27,286	8,481	14,111	124,419
Panel B: Dep Var = ln(OPPrice)					
Specialty (% of Phys Spend)	Primary Care (24%)	Surgery (14%)	Cardiology (4%)	Anesth/Diag Rad (6%)	Other (52%)
	(1)	(2)	(3)	(4)	(5)
Vertical Integration	0.1090 [0.0232]***	0.1110 [0.0547]**	0.3100 [0.0387]***	0.0413 [0.0717]	0.1480 [0.0303]***
R-sq	0.892	0.849	0.800	0.868	0.901
N	73,643	26,592	8,437	13,803	122,733
Panel C: Dep Var = ln(IPPrice)					
Specialty (% of Phys Spend)	Primary Care (24%)	Surgery (14%)	Cardiology (4%)	Anesth/Diag Rad (6%)	Other (52%)
	(1)	(2)	(3)	(4)	(5)
Vertical Integration	0.1 [0.0176]***	0.0588 [0.0292]**	0.128 [0.0197]***	-0.0258 [0.0769]	0.0329 [0.0200]*
R-sq	0.931	0.992	0.86	0.888	0.865
N	35,911	19,654	7,590	8,886	48,773

Notes: Unit of observation is the physician x year. We exclude the transition year from non-VI to VI. Regressions are weighted by Medicare PFS allowed. Standard errors in bracket are clustered by the cartesian product of a physician's main tax ID in each year and the physician's specialty.

* p<0.10, ** p<0.05, *** p<0.01

**Table 5: Effect of Vertical Integration on Physician Prices
(By Acquirer's Characteristics)**

	Dep Var = ln(Price)		
	(1)	(2)	(3)
<i>By Inpatient Market Share</i>			
VI*Acquirer's share	0.187 [0.0778]**		
<i>By Ownership Type</i>			
For-Profit		0.128 [0.0219]***	
Non-Profit		0.152 [0.0290]***	
Government		0.148 [0.0669]**	
Unknown		0.17 [0.0523]***	
<i>By Service Type</i>			
Acute			0.15 [0.00923]***
Specialty			-0.0422 [0.0412]
LTC/Psych/Other			-0.0572 [0.0514]
Pediatric			-0.0117 [0.0999]
Unknown			0.17 [0.0266]***
R-sq	0.913	0.913	0.913
N	250,105	250,105	250,105

Notes: Unit of observation is the physician x year. We exclude the transition year from non-VI to VI. Regressions are weighted by Medicare PFS allowed. Standard errors in bracket are clustered by the cartesian product of a physician's main tax ID in each year and the physician's specialty.

For specification (1): Acquirer's inpatient share is calculated at the CBSA level (pooling across years), weighting inpatient admission by DRG weights. Regression contains fixed effects for cluster, year x CBSA, and VI x CBSA.

For specification (2): Acquiring system's ownership type is the admissions weighted main ownership type in the 2010 AHA data. Hospitals in the "unknown" category did not match to the AHA.

For specification (3): Service type is determined by matching to the 2010 AHA data and matching based on the system's primary service. Specialty includes specialty specific hospitals such as cardiac or orthopedic hospitals. Hospitals in the "unknown" category did not match to the AHA.

* p<0.10, ** p<0.05, *** p<0.01

Table 6: Effect of PCP VI on Spending: Using Variation in Integration Status of 1st PCP

	Endogenous Regression	First Stage	Reduced Form	IV
	Dep Var = ln(spending)	Dep Var = % of PCP visits VI	Dep Var = ln(spending)	Dep Var = ln(spending)
	(1)	(2)	(3)	(4)
% of PCP visits VI	0.0856 <i>[0.0221]***</i>			0.0318 <i>[0.0120]***</i>
1st PCP integrates		0.798 <i>[0.0363]***</i>	0.0254 <i>[0.0196]</i>	
N	1,567,278	1,567,331	1,567,278	1,567,278

Notes: Unit of observation is the enrollee x year for any enrollee who has a PCP E&M visit in the current year and whose "main" PCP in the year is the same as the patient's first "main" PCP. Regressions contain enrollee fixed effects, year x CBSA fixed effects for large CBSAs and year x state Fes for small CBSAs. Standard errors in bracket are clustered by the cartesian product of a physician's main tax ID in each year and the physician's specialty. * p<0.10, ** p<0.05, *** p<0.01

Table 7: Effect of zip code level Vertical Integration on Spending

	Dep Var = ln(mean spending)		Dep Var = ln(median spending)	
	Endogenous	IV	Endogenous	IV
	(1)	(2)	(3)	(4)
Share Primary Care VI	-0.016 <i>[0.0269]</i>	-0.0222 <i>[0.0466]</i>	-0.0468 <i>[0.0190]**</i>	-0.0921 <i>[0.0329]***</i>
Share Specialist Care VI	0.352 <i>[0.0349]***</i>	0.103 <i>[0.124]</i>	0.0897 <i>[0.0246]***</i>	0.336 <i>[0.0877]***</i>
R-sq	0.751	0.569	0.904	0.661
N	13,548	13,517	13,531	13,499

Notes: Unit of observation is the zip code x year. Regressions control for zip code fixed effects, cbsa x year fixed effects, zip code HHI and HCCI's estimated average spending for the sample based on age and gender.

Regressions are weighted by enrollee months. IV results instrument for both our measures of VI. Point estimates and upper and lower bounds of 95% confidence interval are reported. Standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 8: IV Estimates of the Effect of zip code VI on share of spending, by category.

	Dep Var = Share of spending, by BETOS category						
	DME	E&M visits	Imaging	Procedures	tests	Inpatient	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Share Primary Care VI	0.0014 <i>[0.00313]</i>	0.00233 <i>[0.00650]</i>	-0.0271 <i>[0.0113]**</i>	-0.00693 <i>[0.00559]</i>	0.00626 <i>[0.00931]</i>	0.000754 <i>[0.00365]</i>	0.0224 <i>[0.0204]</i>
Share Specialist Care VI	-0.0181 <i>[0.00831]**</i>	0.00266 <i>[0.0173]</i>	-0.0302 <i>[0.0299]</i>	0.0301 <i>[0.0148]**</i>	0.0229 <i>[0.0247]</i>	-0.00818 <i>[0.00968]</i>	0.00138 <i>[0.0541]</i>
R-sq	0.094	0.154	0.258	0.464	0.119	0.248	0.076
N	13,517	13,517	13,517	13,517	13,517	13,517	13,517

Notes: Unit of observation is the zip code x year. Regressions control for zip code fixed effects, cbsa x year fixed effects, zip code HHI and HCCI's estimated average spending for the sample based on age and gender. Regressions are weighted by enrollee months. Point estimates and upper and lower bounds of 95% confidence interval are reported. Standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01



December 2015

MEDICARE

Increasing Hospital-Physician Consolidation Highlights Need for Payment Reform

GAO Highlights

Highlights of [GAO-16-189](#), a report to congressional requesters

Why GAO Did This Study

Medicare expenditures for HOPD services have grown rapidly in recent years. Some policymakers have raised questions about whether this growth may be attributed to services that were typically performed in physician offices shifting to HOPDs. GAO was asked to examine trends in vertical consolidation and its effects on Medicare.

This report examines, for years 2007 through 2013, (1) trends in vertical consolidation between hospitals and physicians and (2) the extent to which higher levels of vertical consolidation were associated with more E/M office visits being performed in HOPDs. GAO analyzed, using various methods including regression analyses, the most recent available claims data from CMS and survey data from the American Hospital Association, in which hospitals report the types of financial arrangements they have with physicians.

What GAO Recommends

In order to prevent the shift of services from lower paid settings to the higher paid HOPD setting from increasing costs for the Medicare program and beneficiaries, Congress should consider directing the Secretary of the Department of Health and Human Services (HHS) to equalize payment rates between settings for E/M office visits—and other services that the Secretary deems appropriate—and to return the associated savings to the Medicare program. HHS provided technical comments on a draft of this report, which GAO incorporated as appropriate.

View [GAO-16-189](#). For more information, contact James Cosgrove at (202) 512-7114 or cosgrovej@gao.gov.

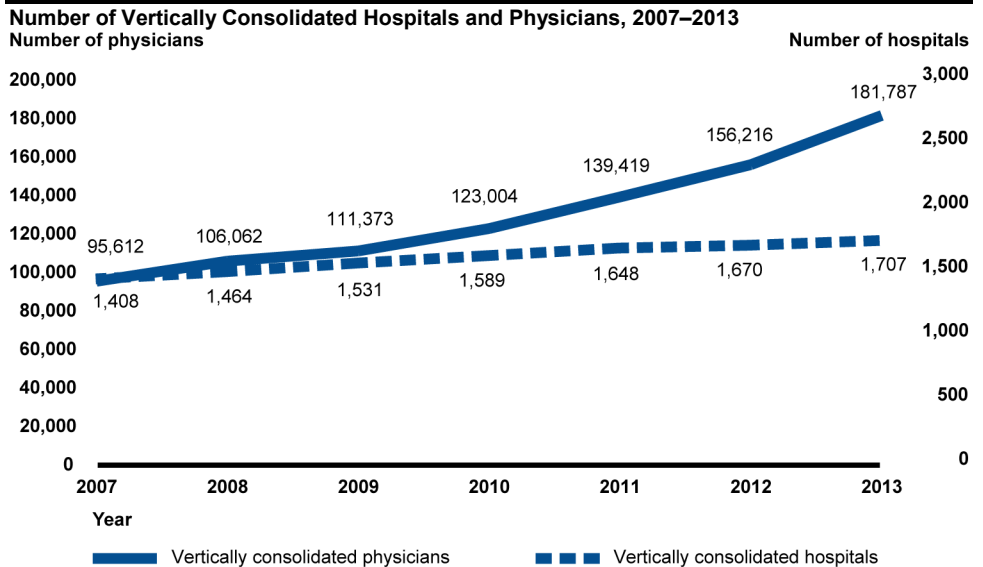
December 2015

MEDICARE

Increasing Hospital-Physician Consolidation Highlights Need for Payment Reform

What GAO Found

Vertical consolidation is a financial arrangement that occurs when a hospital acquires a physician practice and/or hires physicians to work as salaried employees. The number of vertically consolidated hospitals and physicians increased from 2007 through 2013. Specifically, the number of vertically consolidated hospitals increased from about 1,400 to 1,700, while the number of vertically consolidated physicians nearly doubled from about 96,000 to 182,000. This growth occurred across all regions and hospital sizes, but was more rapid in recent years. After hospitals and physicians vertically consolidate, services performed in physician offices, such as evaluation & management (E/M) office visits, can be classified as being performed in hospital outpatient departments (HOPD). Medicare often pays providers at a higher rate when the same service is performed in an HOPD rather than in a physician office. For example, in 2013, the total Medicare payment rate for a mid-level E/M office visit for an established patient was \$51 higher when the service was performed in an HOPD instead of a physician office.



Source: GAO analysis of American Hospital Association data. | GAO-16-189

Note: This analysis was limited to hospitals that served Medicare beneficiaries.

The percentage of E/M office visits—as well as the number of E/M office visits per beneficiary—performed in HOPDs, rather than in physician offices, was generally higher in counties with higher levels of vertical consolidation in 2007 through 2013. For example, the median percentage of E/M office visits performed in HOPDs in counties with the lowest levels of vertical consolidation was 4.1 percent in 2013. In contrast, this rate was 14.1 percent for counties with the highest levels of consolidation. GAO's findings suggest that Medicare will likely pay more than necessary for E/M office visits. Such excess payments are inconsistent with Medicare's role as an efficient purchaser of health care services. However, the Centers for Medicare & Medicaid Services (CMS)—the agency that is responsible for the Medicare program—lacks the statutory authority to equalize total payment rates between HOPDs and physician offices and achieve Medicare savings.

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Abbreviations

AHA	American Hospital Association
CMS	Centers for Medicare & Medicaid Services
E/M	evaluation & management
FFS	fee-for-service
HCPCS	Healthcare Common Procedure Coding System
HHI	Herfindahl-Hirschman Index
HHS	Department of Health and Human Services
HOPD	hospital outpatient department
MedPAC	Medicare Payment Advisory Commission
MedPAR	Medicare Provider Analysis and Review
OPPS	Outpatient Prospective Payment System

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December 18, 2015

Congressional Requesters

Medicare expenditures for hospital outpatient department (HOPD) services have grown rapidly, increasing from \$22.4 billion to \$36.3 billion from 2007 through 2013, or about 8.3 percent annually. In comparison, the national economy grew by an average annual rate of 2.4 percent, and total Medicare Part B spending grew by an average annual rate of 5.8 percent over the same period.¹ Some policymakers have raised questions about whether or to what extent the growth in spending on services performed in HOPDs may be attributed to services that were typically performed in physician offices shifting to HOPDs. Such a shift could undermine Medicare's ability to be an efficient purchaser of health care services, given that Medicare often pays providers at a higher rate—sometimes twice as much—when the same service is performed in an HOPD rather than in a physician office.

This difference in Medicare payment rates, based on where a service is performed, provides an incentive for hospitals to acquire physician practices and/or hire physicians as salaried employees—financial arrangements health care experts commonly refer to as vertical consolidation.² Other factors, such as new payment policies that reward coordination, may also incent vertical consolidation. After hospitals and physicians vertically consolidate, the same services that were once reimbursed at a lower total payment rate can be classified as HOPD services and reimbursed by Medicare at a higher total payment rate. For one common type of service that can be performed in both physician offices and HOPDs—evaluation & management (E/M) office visits—several organizations have estimated that equalizing payment rates

¹Medicare Part B covers certain HOPD, physician, and laboratory services, among other services. For Medicare spending figures, see *The 2015 Annual Report of The Boards of Trustees of The Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds* (Washington, D.C.: July 2015).

²Hospitals can employ physicians in multiple ways. For example, a hospital can directly hire physicians or acquire an already established practice. Throughout this report, we refer to hospitals and physicians in such arrangements as vertically consolidated hospitals and physicians, respectively.

between physician offices and HOPDs would save Medicare billions of dollars, with some estimates predicting savings of nearly \$1 billion to \$2 billion a year for the Medicare program and beneficiaries.³

You asked us to examine trends in vertical consolidation and its effects on Medicare. In this report, we examine, for years 2007 through 2013,

1. trends in vertical consolidation between hospitals and physicians and
2. the extent to which higher levels of vertical consolidation were associated with more E/M office visits being performed in HOPDs instead of physician offices.

To examine trends in vertical consolidation between hospitals and physicians from 2007 through 2013, we analyzed data from the American Hospital Association (AHA) Annual Survey Database,TM in which hospitals report the types of financial arrangements they have with physicians and the number of physicians in those relationships.⁴ We limited our analysis to hospitals that served Medicare beneficiaries during this period, which we identified using Medicare Provider Analysis and Review (MedPAR) files.⁵ Additionally, based on a review of pertinent literature, we identified and interviewed academic researchers and industry representatives about the various types of hospital-physician relationships, possible data

³E/M office visits are provided by physicians and nonphysicians to assess patients' health and manage their care. In general, Medicare pays roughly 80 percent of the payment rate for E/M office visits under Medicare Part B, and the beneficiary is responsible for the remaining 20 percent. Savings estimates came from entities such as the Bipartisan Policy Center and Medicare Payment Advisory Commission (MedPAC).

⁴At the time we conducted our analyses, 2013 AHA data were the most recent available. The AHA Annual Survey DatabaseTM is a comprehensive hospital database for health services research that is derived from the AHA annual survey of hospitals, which has been conducted since 1946. The survey is sent out to all hospitals that are open and operating in the U.S., a total of over 6,300 hospitals, and has had an average response rate of 76 percent from 2007 through 2013. Similar to previous research on vertical consolidation, we considered a hospital to be vertically consolidated if it had one of three types of relationships with physicians—an integrated salary, foundation, or equity model. See appendix I for a detailed description of these three arrangements.

⁵MedPAR files contain information on Medicare inpatient discharges for short-term acute care hospitals. At the time we conducted our analyses, 2013 MedPAR data were the most recent available. Limiting our analysis to only hospitals that serve Medicare beneficiaries results in excluding certain types of hospitals, such as Department of Veterans Affairs hospitals.

sources to track vertical consolidation, and health care system policies that could be driving consolidation.

To examine the extent to which higher levels of vertical consolidation were associated with more E/M office visits being performed in HOPDs instead of physician offices, we first examined trends in the setting where E/M office visits were performed.⁶ Specifically, we analyzed Medicare fee-for-service (FFS) claims from the Medicare Part B Carrier and Outpatient claim files from 2007 through 2013 to identify where E/M office visits were performed.⁷ To determine the extent to which higher levels of vertical consolidation were associated with more E/M office visits being performed in HOPDs rather than physician offices, we conducted two analyses. First, we ranked counties into quintiles based on the level of 2013 vertical consolidation in each county. Specifically, the counties in the lowest quintile were considered to have low levels of vertical consolidation, and the next four quintiles were considered to have medium-low, medium, medium-high, and high levels of vertical consolidation, respectively. Within each quintile, we then calculated a number of statistics, such as the median percentage and number of E/M office visits per beneficiary performed in HOPDs. For each quintile, we also calculated descriptive statistics, such as the median risk score, to determine whether counties with higher levels of vertical consolidation had sicker or healthier beneficiaries.⁸ Second, in order to ensure that the relationship between consolidation and where E/M office visits were performed was not spurious, we estimated panel-data regression models. Our models controlled for county characteristics, such as whether a

⁶For the purposes of this report, we focused on E/M office visits. Like E/M office visits, other services, such as imaging and surgical services, often have a higher total Medicare payment rate when performed in an HOPD, and the setting in which these services are performed could be affected by vertical consolidation.

⁷Medicare data from the Carrier file include claims from noninstitutional providers, such as physicians. Medicare data from the Outpatient file include claims from institutional outpatient providers, such as HOPDs. At the time we conducted our analyses, 2013 Outpatient and Carrier data were the most recent available.

⁸A beneficiary's risk score is the ratio of expected health care expenditures for that beneficiary under Medicare FFS relative to the average health care expenditures for all Medicare FFS beneficiaries.

county is urban or rural, and for health care market characteristics, such as the level of competition among hospitals and physicians.⁹

Our analysis has some limitations. While the response rate for the AHA Annual Survey Database™ was generally high for each year—on average, about 76 percent of all hospitals responded—and we made efforts to identify potentially problematic responses, the data on vertical consolidation was self-reported by hospitals. In addition, we were unable to make our measure of vertical consolidation reflect the intensity of vertical consolidation relationships—that is, the number of vertically consolidated physicians per hospital—because of data limitations.

We took several steps to ensure that the data used to produce this report were sufficiently reliable. Specifically, we assessed the reliability of the Medicare claims data we used and the AHA Annual Survey Database™ by interviewing officials responsible for overseeing and collecting these data, including officials from the Centers for Medicare & Medicaid Services (CMS)—the agency that is responsible for the Medicare program. We also reviewed relevant documentation and examined the data for obvious errors, such as missing values and values outside of expected ranges. We determined that the data were sufficiently reliable for the purposes of this report. See appendix I for more information regarding our scope and methodology.

We conducted this performance audit from February 2014 through December 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁹Our use of the AHA Annual Survey Database™ and Medicare claims data to investigate the effects of vertical consolidation builds off of previous research. For example, see: Baker, Laurence C., M. Kate Bundorf, and Daniel P. Kessler. “Vertical Integration: Hospital Ownership of Physician Practices is Associated with Higher Prices and Spending.” *Health Affairs* 33, no. 5 (May 2014).

Background

E/M Office Visits and Other Services with Total Payment Rates that Vary Across Settings

E/M office visits are frequently performed services during which a physician or other provider assesses a patient's health and begins managing his or her care.¹⁰ These services are predominantly performed in two settings—physician offices and HOPDs.¹¹ Medicare FFS paid for approximately 250 million E/M office visits in 2013.

Under Medicare's payment policy, Medicare's total payment rate is higher when an E/M office visit is provided in an HOPD rather than in a physician office.¹² When the service is provided in a physician office, Medicare makes a single payment to the physician at Medicare's physician fee schedule non-facility rate. When the service is provided in an HOPD, Medicare makes two payments—one payment at the physician fee schedule facility rate and another payment to the hospital, typically at the hospital outpatient prospective payment system (OPPS) rate. The total of these two payment rates is higher than Medicare's total payment rate when the service is provided in a physician office. For example, in 2013, the total Medicare payment rate for a mid-level E/M office visit for an established patient—billed under Healthcare Common Procedure Coding System (HCPCS) code 99213—was \$51 higher when the service was performed in an HOPD instead of a physician office (see table 1).

¹⁰To bill Medicare for these services, providers select a Healthcare Common Procedure Coding System (HCPCS) code that best represents the level of E/M service performed based on three elements: patient history, examination, and medical decision making. The combination of these three elements can range from a very limited encounter to a very detailed examination requiring an hour of the provider's time.

¹¹While E/M office visits can be performed in a variety of settings, 98 percent of E/M office visits were performed in physician offices or HOPDs in 2013.

¹²Medicare's total payment rate is higher when an E/M office visit is performed in an HOPD, regardless of whether or not a physician is vertically consolidated. For certain other types of services, Medicare's total payment can be higher when the service is performed in a physician office rather than an HOPD.

Table 1: Medicare Payment Rates for Evaluation & Management Office Visits, by Site of Service, 2013

HCPCS Code	Total Physician Fee Schedule Non-Facility Payment Rate	HOPD Rate			Dollar Difference Between Total Payment Rates
		Physician Fee Schedule Facility Rate	OPPS Payment Rate	Total HOPD Payment Rate	
99201	\$44	\$26	\$57	\$83	\$39
99202	75	49	74	123	48
99203	108	75	97	172	64
99204	165	128	128	257	92
99205	204	165	176	340	137
99211	20	9	57	66	45
99212	44	25	74	98	54
99213	73	50	74	123	51
99214	107	77	97	174	67
99215	143	108	128	236	93

Source: GAO analysis of Centers for Medicare & Medicaid Services data. | GAO-16-189

Notes: Healthcare Common Procedure Coding System (HCPCS), hospital outpatient department (HOPD), outpatient prospective payment system (OPPS). Evaluation & management office visits are provided by physicians and nonphysicians to assess patients' health and manage their care. The Medicare physician fee schedule and OPSS are two distinct payment systems. The payment rates established under each system are governed by separate requirements. The total HOPD payment rate may not be equal to the sum of its parts and the dollar difference between total payment rates may not be equal to the actual difference due to rounding.

While CMS modified the manner in which Medicare pays for E/M office visits after 2013, large differences in total payment rates continue to exist for E/M office visits. Beginning in 2014, CMS made the OPSS payment rate the same for all the HCPCS codes for E/M office visits. However, the new uniform OPSS payment rate combined with the physician fee schedule facility payment rate for E/M office visits provided in HOPDs continues to exceed the payment rate for the same services performed in physician offices. For example, in 2015, Medicare's total payment rate for E/M office visits ranged from \$58 to \$86 higher when performed in an HOPD compared to a physician office, depending on the specific HCPCS code billed.

Many other services, such as imaging and surgical services, are also reimbursed at a higher rate by Medicare when performed in HOPDs versus other settings.¹³ For example, Medicare's total payment rate for magnetic resonance imaging of the lumbar spine without dye (HCPCS code 72148) was about \$29 higher when performed in an HOPD compared to a physician office in 2013. Furthermore, Medicare's total payment rate for cataract surgery (HCPCS code 66984) was about \$760 higher when performed in an HOPD compared to an ambulatory surgical center in 2013.

Some industry groups argue that higher payment rates for services performed in HOPDs are justified because hospitals treat sicker patients, incur higher costs due to the need to furnish emergency services, and provide services that are unavailable elsewhere in the community for vulnerable populations, such as those dually eligible for Medicare and Medicaid. However, in separate reports, MedPAC and the Department of Health and Human Services (HHS) Office of Inspector General have recommended or suggested that Congress eliminate or reduce differences in Medicare total payment rates across settings for various services, including E/M office visits, imaging services, and surgical

¹³When provided in HOPDs, the OPPS payment rate for certain services includes dependent, ancillary, supportive, and adjunctive items, which are packaged into a single payment rate for the primary service. For E/M office visits, MedPAC found, in 2012, that packaged services account for a small percentage of total costs—about 2.5 percent. For other services, packaged items could represent a higher share of total costs.

services.¹⁴ To date, legislation fully addressing these recommendations has not been enacted.¹⁵

Billing Practices after Vertical Consolidation between Hospitals and Physicians

Recent research suggests that hospitals and physicians are increasingly vertically consolidated, which allows services to shift from physician offices to HOPDs.¹⁶ When hospitals and physicians vertically consolidate, the hospital-owned practice must meet certain criteria to gain what is known as provider-based status, which allows the hospital to bill the HOPD rate, thereby increasing Medicare's total payment rate for the same service.¹⁷ For example, the physician practice and hospital must be financially and clinically integrated. Further, although exceptions exist, physician practices are generally required to be within 35 miles of the hospital to gain provider-based status.¹⁸ If a practice meets these conditions, Medicare's total payment rate for the same service can be

¹⁴See Medicare Payment Advisory Commission, *Report to the Congress: Medicare Payment Policy* (Washington, D.C.: March 2012), which recommended that Congress enact legislation to equalize payment rates for E/M office visits provided in HOPDs and physician offices; *Report to the Congress: Medicare and the Health Care Delivery System* (Washington, D.C.: June 2013), which suggested that Congress could eliminate or reduce payment differences for services such as imaging and surgical services; and Department of Health and Human Services Office of Inspector General, *Medicare and Beneficiaries Could Save Billions if CMS Reduces Hospital Outpatient Department Payment Rates for Ambulatory Surgical Center-Approved Procedures to Ambulatory Surgical Center Payment Rates* (A-05-12-00020) (April 2014), which recommended that HHS seek legislation to exempt lowering the OPPS rates for ambulatory surgical center approved procedures from OPPS budget neutrality requirements.

¹⁵As a result of legislation enacted November 2, 2015, services furnished by off-campus HOPDs (i.e., HOPDs that are not located on a hospital campus) are excluded from the OPPS, effective January 1, 2017. However, this exclusion will not apply to services furnished by providers billing as HOPDs prior to enactment of the legislation—that is, all providers billing as HOPDs during our study—who would continue to be paid under the OPPS or to services provided by on-campus HOPDs. See Bipartisan Budget Act of 2015, Pub. L. No. 114-74, § 603, 129 Stat. 584, 597-598 (2015).

¹⁶See Kane, CK and Emmons, DW. "Policy research perspectives – New data on physician practice arrangements: private practice remains strong despite shifts toward hospital employment." American Medical Association, 2013.

¹⁷A provider-based entity comprises both the specific physical facility and the personnel and equipment needed to deliver the services at that facility.

¹⁸For example, a physician practice can gain provider-based status, even if the practice is located more than 35 miles away from the hospital, if the hospital and physician practice serve the same patient populations. For more information regarding provider-based status, including a list of requirements providers must meet to gain provider-based status, see 42 C.F.R. § 413.65(b) (2014).

substantially higher despite the fact that the practice's location, the physicians who practice there, and the beneficiaries served could be the same as before consolidation occurred.

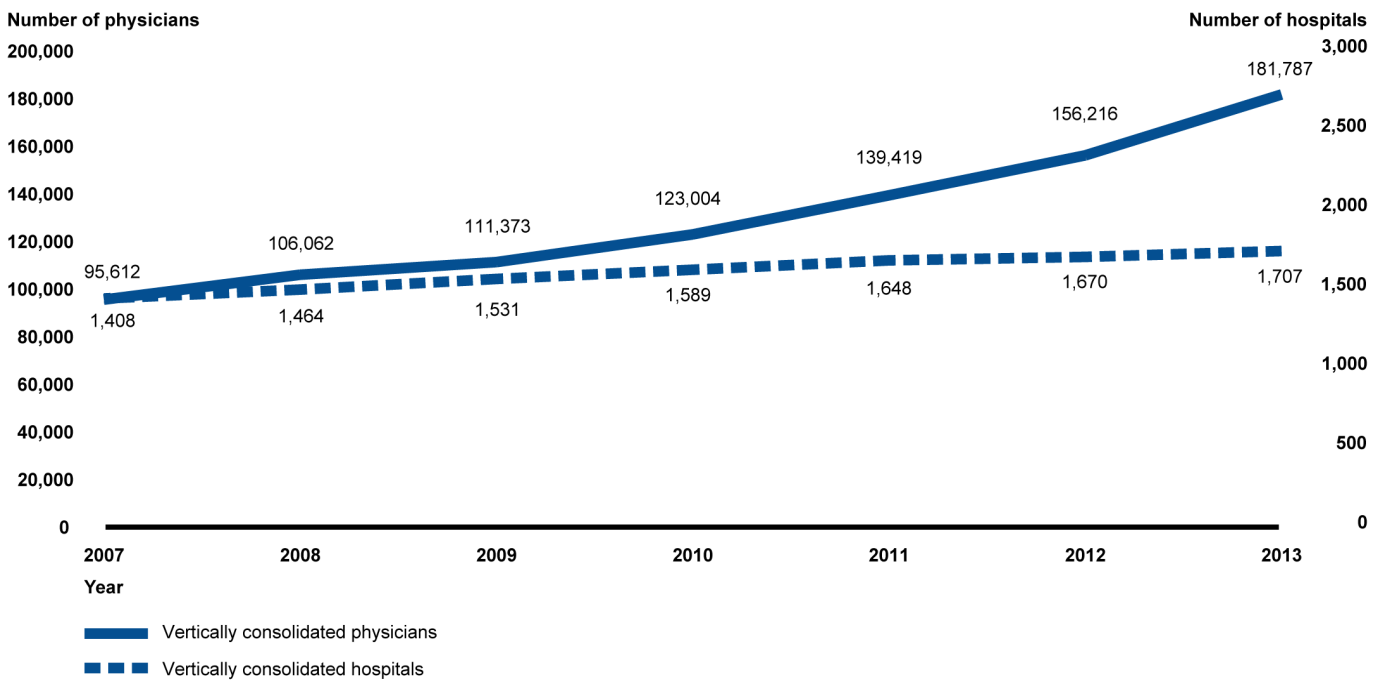
Data Indicate an Increase in Vertical Consolidation between Hospitals and Physicians from 2007 through 2013

Our analysis of AHA survey data shows that from 2007 through 2013, the number of vertically consolidated hospitals increased by 21 percent. Specifically, out of the approximately 4,700 surveyed hospitals included in our study, 1,408 or 30 percent of the hospitals reported having a vertical consolidation arrangement with physicians in 2007.¹⁹ This number increased to 1,707 or 36 percent in 2013—an average annual increase of 3.3 percent (see fig. 1).

In addition, AHA survey data also show that the number of vertically consolidated physicians nearly doubled between 2007 and 2013, with faster growth toward the end of this time period. Specifically, the number of these physicians increased from over 95,000 in 2007 to almost 182,000 in 2013—an average annual increase of 11.3 percent (see fig. 1). From 2010 to 2013, the number of vertically consolidated physicians grew at an average annual rate of 13.9 percent, compared to a rate of 8.8 percent from 2007 to 2010.

¹⁹We limited our analysis to include hospitals in the AHA Annual Survey Database™ that served Medicare beneficiaries on an inpatient basis based on our analysis of Medicare claims data, which resulted in about 4,700 hospitals for each year.

Figure 1: Number of Vertically Consolidated Hospitals and Physicians, 2007 through 2013

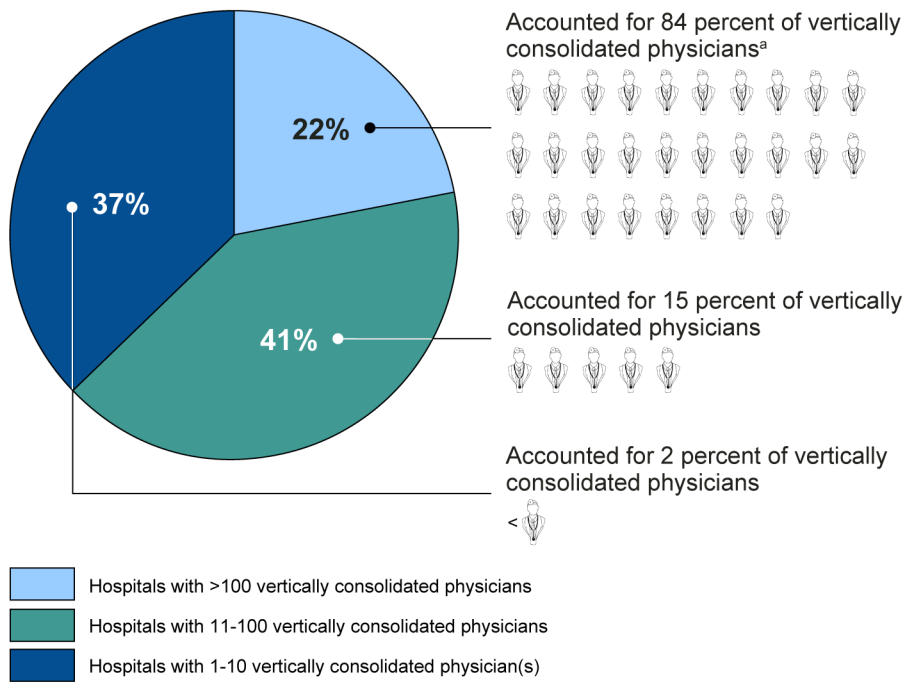


Source: GAO analysis of American Hospital Association data. | GAO-16-189

Note: We limited our analysis to hospitals that served Medicare beneficiaries on an inpatient basis based on our analysis of Medicare claims data.

Although the increase in the number of vertically consolidated physicians occurred across a broad range of hospitals from 2007 through 2013, relatively few hospitals accounted for a large number of these physicians. AHA’s survey data show that the number of vertically consolidated physicians increased across all regions of the country; in both urban and rural areas; and among hospitals of different sizes. However, relatively few hospitals accounted for a large number of vertically consolidated physicians. For example, the 372 out of 1,707 vertically consolidated hospitals that had more than 100 vertically consolidated physicians accounted for 84 percent of all vertically consolidated physicians but only 22 percent of vertically consolidated hospitals in 2013 (see fig. 2).

Figure 2: Distribution of Vertically Consolidated Hospitals and Physicians, 2013



Source: GAO analysis of American Hospital Association data. | GAO-16-189

Notes: The percentage of hospitals is based on 1,707 vertically consolidated hospitals out of the 4,689 total hospitals included in our analysis for 2013. We limited our analysis to hospitals that served Medicare beneficiaries on an inpatient basis based on our analysis of Medicare claims data.

^aPercentages may not sum to 100 due to rounding. Each physician figure represents 3 percentage points.

Researchers and industry representatives whom we interviewed offered numerous potential explanations for the recent increases in vertical consolidation.²⁰ Some stated that the trend could partially be explained by higher Medicare payment rates for services performed in HOPDs compared to other settings, the desire among some hospitals to gain market share, and changes in health care payment and delivery systems. For example, accountable care organizations, bundled payment models, and Medicare’s Hospital Readmissions Reduction Program—which

²⁰We spoke with several researchers who conducted studies on hospital-physician relationships and with industry representatives from organizations such as the AHA, American Medical Association, America’s Health Insurance Plans, and Medical Group Management Association.

penalizes hospitals for high rates of readmissions—provide incentives to vertically consolidate in order to improve care for beneficiaries, maximize payments, and minimize penalties.²¹ Researchers and industry representatives whom we interviewed also mentioned that the increasing challenges associated with managing a private physician practice, including financial and regulatory burdens, could also explain some of the increase in vertical consolidation. Some of these researchers and representatives added that hospitals and physicians may be vertically consolidating to enhance care coordination and improve efficiency.

Vertical Consolidation Associated with Higher Utilization of Medicare E/M Office Visits in Hospital Outpatient Departments

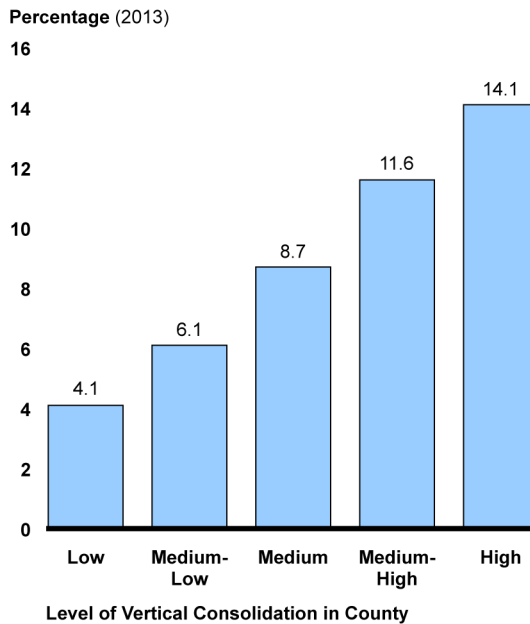
The percentage of E/M office visits—as well as the number of E/M office visits per beneficiary—performed in HOPDs, rather than physician offices, was generally higher in counties with higher levels of vertical consolidation in 2007 through 2013. The beneficiaries from counties with relatively high levels of vertical consolidation were not sicker, on average, than beneficiaries in counties with lower levels of consolidation.

Percentage of Medicare E/M Office Visits Performed in HOPDs Higher in Counties with Higher Levels of Vertical Consolidation

Our analysis of AHA and Medicare claims data shows that the percentage of E/M office visits performed in HOPDs was generally higher in counties with higher levels of vertical consolidation in 2013. Specifically, after dividing counties into five equal groups based on their 2013 level of consolidation, we found that the median percentage of E/M office visits performed in HOPDs in the group of counties with the lowest levels of vertical consolidation was 4.1 percent. In contrast, this rate was 14.1 percent for the counties with the highest levels of consolidation (see fig. 3).

²¹Accountable care organizations are groups of doctors, hospitals, and other providers who voluntarily join together with the goal of better coordinating high quality care and realizing financial savings. A bundled payment is a single payment made to providers for all services to treat a given condition or provide a given treatment. In commenting on this report, CMS officials stated that the 340B Drug Pricing Program could also provide an incentive for hospitals to acquire physician practices. This program requires drug manufacturers to provide outpatient drugs to eligible health care organizations/covered entities at significantly reduced prices.

Figure 3: Median Percentage of Medicare E/M Office Visits Performed in Hospital Outpatient Departments, by County Level of Vertical Consolidation, 2013



Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Note: Counties were sorted into quintiles based on their level of vertical consolidation in 2013. Specifically, the counties in the lowest quintile were considered to have low levels of vertical consolidation, and the next four quintiles were considered to have medium-low, medium, medium-high, and high levels of vertical consolidation, respectively.

For years 2007 to 2012, the percentage of E/M office visits performed in HOPDs was also generally higher in counties with higher levels of vertical consolidation, though the association was weaker compared to 2013. For example, the median percentage of E/M office visits performed in HOPDs in the group of counties with the lowest level of vertical consolidation was 3.9 percent in 2007, compared to a median of 7.3 percent in the counties with the highest levels of consolidation.

As part of our analysis, we also calculated the number of E/M office visits in each county on a per beneficiary basis. We found that the number of E/M office visits performed in HOPDs per 100 Medicare beneficiaries was also generally higher in counties with higher levels of vertical consolidation each year from 2007 through 2013. For example, in 2013 the number of E/M office visits performed in HOPDs per 100 beneficiaries

was 26 for the counties with low levels of vertical consolidation, whereas the number was substantially higher—82 services per 100 beneficiaries—in counties with the highest level of vertical consolidation.²² We found similar correlations in 2007 through 2012. (See app. III for additional analyses of the number of E/M office visits performed in HOPDs in counties with different levels of vertical consolidation from 2007 through 2013.)²³

The association we found between higher levels of vertical consolidation and higher utilization of E/M office visits in HOPDs remained even after controlling for differences in county-level characteristics and other market factors that could affect the setting in which E/M office visits are performed. Specifically, we developed a regression model that controlled for county characteristics that do not change over relatively short periods of time, such as whether a county is urban or rural, and county characteristics that could change over time, such as the level of competition among hospitals and physicians within counties. Our regression model's results were similar to our initial results: the level of vertical consolidation in a county was significantly and positively associated with a higher number and percentage of E/M office visits performed in HOPDs—that is, as vertical consolidation increased in a given county, the number and percentage of E/M office visits performed in HOPDs in that county also tended to be higher. (See app. I and app. II for more information on our regression model and results.)

²²While there were changes in the absolute numbers, counties with higher levels of consolidation tended to have a higher percentage and number of E/M office visits performed in HOPDs after accounting for the total volume of services and the number of beneficiaries in a county, respectively.

²³We also examined the effect of vertical consolidation on the total number of E/M office visits. For more information, see appendix IV.

Medicare Beneficiaries in Counties with Higher Levels of Vertical Consolidation Were Not Sicker Than Those in Counties with Lower Levels of Consolidation

Beneficiaries from counties with higher levels of vertical consolidation were not sicker, on average, than beneficiaries from counties with lower levels of consolidation. Specifically, beneficiaries from counties with higher levels of vertical consolidation tended to have either similar or slightly lower median risk scores, death rates, rates of end-stage renal disease, and rates of disability compared to those from counties with lower levels of consolidation (see table 2).²⁴ Further, counties with higher levels of consolidation had a lower percentage of beneficiaries dually eligible for Medicaid, who tend to be sicker and have higher Medicare spending than Medicare beneficiaries who are not dually eligible for Medicaid.²⁵ This suggests that areas with higher E/M office visit utilization in HOPDs are not composed of sicker than average beneficiaries.

Table 2: Characteristics of Medicare Beneficiaries, by County Level of Vertical Consolidation, 2013

County Level of Vertical Consolidation	Median Risk Score	Median Age	Median Percentage That Died in Year	Median Percentage with End-Stage Renal Disease	Median Percentage Disabled	Median Percentage Dual Eligibles
Low	0.96	69.8	5.2%	1.0%	22.6%	21.4%
Medium-Low	0.95	70.2	5.2	0.8	20.1	16.3
Medium	0.93	70.7	5.1	0.7	18.2	15.0
Medium-High	0.93	70.7	5.1	0.7	18.5	15.4
High	0.93	70.3	5.0	0.7	19.7	14.9

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Counties were sorted into quintiles based on their level of vertical consolidation in 2013. Specifically, the counties in the lowest quintile were considered to have low levels of vertical consolidation, and the next four quintiles were considered to have medium-low, medium, medium-high, and high levels of vertical consolidation, respectively. A beneficiary's risk score is the ratio of expected health care expenditures for that beneficiary under Medicare fee-for-service relative to the average health care expenditures for all Medicare fee-for-service beneficiaries. End-stage renal disease is a condition of permanent kidney failure.

²⁴While the absolute numbers experienced small changes, beneficiaries from counties with higher levels of vertical consolidation tended to have either similar or slightly lower average risk scores, death rates, rates of end-stage renal disease, disability rates, and rates of dual eligibles compared to those from counties with lower levels of consolidation after weighting for the number of beneficiaries who lived in a county. A beneficiary's risk score is the ratio of expected health care expenditures for that beneficiary under Medicare FFS relative to the average health care expenditures for all Medicare FFS beneficiaries. End-stage renal disease is a condition of permanent kidney failure.

²⁵For an examination of spending by dual eligibility status, see: Congressional Budget Office, *Dual-Eligible Beneficiaries of Medicare and Medicaid: Characteristics, Health Care Spending, and Evolving Policies* (Washington, D.C.: June 2013).

As we previously stated, the extent of vertical consolidation grew from 2007 through 2013. Coinciding with that growth, we found that E/M office visits were performed more frequently in the higher paid HOPD setting in counties with higher levels of vertical consolidation. Such excess payments are inconsistent with Medicare's role as an efficient purchaser of health care services. According to CMS, the agency does not have the statutory authority to equalize total payment rates between HOPDs and physician offices. Further, CMS lacks the authority to return the associated savings to the Medicare program.²⁶ Therefore, absent legislative intervention, the Medicare program will likely pay more than necessary for E/M office visits.

Conclusions

From 2007 through 2013, the number of vertically consolidated physicians nearly doubled, with faster growth in more recent years. Regardless of what has driven hospitals and physicians to vertically consolidate, paying substantially more for the same service when performed in an HOPD rather than a physician office provides an incentive to shift services that were once performed in physician offices to HOPDs after consolidation has occurred. Our findings suggest that providers responded to this financial incentive: E/M office visits were more frequently performed in HOPDs in counties with higher levels of vertical consolidation. We found this association in both our analysis of E/M office visit utilization in counties with varying levels of vertical consolidation and in our regression analyses. Further, our analysis of 2013 health status data suggests that beneficiaries from counties with higher levels of vertical consolidation, where we found more E/M office visits performed in HOPDs, were not sicker, on average, than beneficiaries who lived in counties with lower levels of consolidation, where we found fewer E/M office visits performed in HOPDs.

While vertical consolidation has potential benefits, we found that the rise in vertical consolidation exacerbates a financial vulnerability in Medicare's

²⁶The Secretary of HHS is required to annually revise the groups, relative payment weights, and the wage and other adjustments to the hospital outpatient services that are paid under the OPSS to take into account changes in medical practice, changes in technology, the addition of services, new cost data, and other relevant information and factors. However, any such adjustments must be offset by adjustments in other relative weights in a budget neutral manner. Social Security Act § 1833(t)(9)(A), (B). Because of this budget neutrality requirement, Medicare would not realize savings resulting from such revisions, in that forgone payments would not be returned to the Medicare program.

payment policy: Medicare pays different rates for the same service, depending on where the service is performed. Although Medicare aims to be an efficient purchaser of health care services, CMS has stated that the agency currently lacks the authority to equalize payment rates between settings. Further, CMS lacks the authority to return the associated savings to the Medicare program. Until the disparity in payment rates for E/M office visits is addressed, Medicare could be expending more resources than is necessary.

Matter for Congressional Consideration

In order to prevent the shift of services from physician offices to HOPDs from increasing costs for the Medicare program and beneficiaries, Congress should consider directing the Secretary of HHS to equalize payment rates between settings for E/M office visits—and other services that the Secretary deems appropriate—and to return the associated savings to the Medicare program.

Agency and Third-Party Comments and Our Evaluation

HHS provided technical comments on a draft of this report, which we incorporated where appropriate. In addition, we provided two organizations—the American Medical Association and AHA—the opportunity to review our draft because these organizations represent the types of providers and care settings that were the main focus of our report. The American Medical Association had no comments. AHA did not comment on the main finding of our report—that higher levels of vertical consolidation were associated with more E/M office visits being performed in HOPDs instead of physician offices. Further, AHA noted several reasons why, in their opinion, a service performed in an HOPD should receive a higher Medicare reimbursement compared to when the same service is performed in other settings. AHA did comment on two specific aspects of our report—our characterization of beneficiary health status and reasons why vertical consolidation occurs. A summary of these comments and our response are below.

AHA gave several reasons why a service performed in an HOPD should receive a higher Medicare reimbursement compared to when the same service is performed in other settings, such as physician offices. For example, AHA commented that HOPD payment rates are based on audited cost reports and should not be based on physician payment rates. We acknowledge that it might be inappropriate to equalize the total Medicare payment rate for all services. However, Medicare aims to be a prudent purchaser of health care services, and that goal is not achieved if Medicare's total payment rate for certain services—such as E/M office

visits—is substantially higher simply because hospitals have acquired physician practices. Other entities such as MedPAC have also suggested that Medicare base its payments for services on the lowest cost, clinically appropriate setting.

AHA stated that it disagreed with what it interpreted our report to show—that overall, patients treated at HOPDs are not sicker than those treated at physician offices. Our report does not make such an assertion, but does include our finding that beneficiaries residing in counties with higher levels of vertical consolidation were not sicker, on average, than beneficiaries residing in counties with lower levels of consolidation. Given that counties with higher levels of vertical consolidation had more E/M office visits performed in HOPDs, our evidence suggests that areas with higher E/M office visit utilization in HOPDs were not composed of sicker than average beneficiaries.

AHA commented that vertical integration—what our report terms vertical consolidation—is an essential ingredient for successful implementation of the Patient Protection and Affordable Care Act and that we failed to adequately account for reasons other than payment differentials that drive vertical consolidation. Our report notes multiple reasons, identified by the researchers and industry experts we interviewed, as to why hospitals and physicians might vertically consolidate. These potential reasons include certain payment and delivery changes associated with the Patient Protection and Affordable Care Act. While we identified multiple factors that may be contributing to increases in vertical consolidation, a full analysis of the causes or the appropriateness of vertical consolidation between hospitals and physicians was outside the scope of our work.

We are sending copies of this report to the appropriate congressional committees, the Secretary of HHS, and the CMS administrator. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact me at (202) 512-7114 or cosgrovej@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

A handwritten signature in black ink, appearing to read 'James Cosgrove', with a stylized, cursive script.

James Cosgrove
Director, Health Care

List of Requesters

The Honorable Orrin Hatch
Chairman

The Honorable Ron Wyden
Ranking Member
Committee on Finance
United States Senate

The Honorable Mike Enzi
Chairman
Subcommittee on Primary Health and Retirement Security
Committee on Health, Education, Labor and Pensions
United States Senate

The Honorable Jim McDermott
Ranking Member
Subcommittee on Health
Committee on Ways and Means
House of Representatives

Appendix I: Scope and Methodology

This appendix describes the scope and methodology used to examine our two objectives: (1) trends in vertical consolidation between physicians and hospitals from 2007 through 2013 and (2) the extent to which higher levels of vertical consolidation were associated with more evaluation & management (E/M) office visits being performed in hospital outpatient departments (HOPD) instead of physician offices from 2007 through 2013.

Examining Trends in Vertical Consolidation between Hospitals and Physicians

To examine trends in vertical consolidation between hospitals and physicians, we used survey data from the American Hospital Association (AHA) Annual Survey Database,TM in which hospitals report what types of relationships they have with physicians and the number of physicians in those relationships, and Medicare Provider Analysis and Review (MedPAR) files, which contain information on Medicare inpatient discharges for short-term acute care hospitals, from 2007 through 2013. First, we used MedPAR data to identify hospitals that served at least one Medicare beneficiary from 2007 through 2013. We then took that list of hospitals—which are identified using their Centers for Medicare & Medicaid Services Certification Number—and, using the AHA Annual Survey Database,TM determined whether each hospital was vertically consolidated with physicians in each year from 2007 through 2013. Similar to previous research on vertical consolidation, we considered a hospital to be vertically consolidated if it had one of three types of relationships with physicians—an integrated salary, foundation, or equity model. (See table 3 for a description of these three arrangements.)

Table 3: Select Types of Hospital-Physician Arrangements Reported in AHA Annual Survey DatabaseTM

Type of relationship	Description
Integrated salary model	Physicians are salaried by the hospital or another entity of a health system to provide medical services for primary care and specialty care.
Equity model	A professional corporation that allows established practitioners to become shareholders in exchange for the tangible and intangible assets of their existing practices.
Foundation	A corporation, organized either as a hospital affiliate or subsidiary, which purchases both the tangible and intangible assets of one or more medical group practices. Physicians remain in a separate corporate entity but sign a professional services agreement with the foundation.

Source: GAO summary of American Hospital Association data documentation. | GAO-16-189

To identify the number of vertically consolidated hospitals, we counted the number of hospitals with any one of these three types of relationships. To identify the number of vertically consolidated physicians, we implemented edits to modify reported counts of vertically consolidated physicians that

we believed were likely duplicative and then summed the number of physicians. We identified duplicative survey responses as those where hospitals reported more than 10 vertically consolidated physicians and also reported the same number of vertically consolidated physicians as another hospital in the same hospital system.¹ In such instances, we assumed that the total number of vertically consolidated physicians associated with a hospital system was reported multiple times by more than one hospital.

Additionally, based on a review of pertinent literature, we identified and interviewed industry representatives and academic researchers. To better understand hospitals' perspectives on vertical consolidation, we interviewed officials from AHA. Similarly for physicians, we interviewed the American Medical Association and Medical Group Management Association. We also interviewed numerous academic researchers to better understand issues such as the various types of hospital-physician relationships, possible data sources to track vertical consolidation, and health care system policies that could be driving consolidation.

Examining the Extent to Which Higher Levels of Vertical Consolidation Were Associated with More E/M Office Visits Being Performed in Hospital Outpatient Departments

¹We did not identify hospitals as potentially reporting duplicative counts of vertically consolidated physicians if they reported 10 or fewer physicians because 1) a very small percentage of the overall number of vertically consolidated physicians were associated with hospitals with 10 or fewer physicians and 2) we believed that the chances of two hospitals in the same system coincidentally having the same number of vertically consolidated physicians increased as the number of vertically consolidated physicians per hospital decreased.

Bivariate Analyses and
Variable Construction

To attribute E/M office visits to a given county, we used the beneficiary county of residence that was listed on the Carrier and Outpatient file claims.² To determine the total number of E/M office visits that were performed in a given county, we combined the number of E/M office visits from the Carrier file and the number of E/M office visits associated with professional claims in the Medicare Outpatient file.³ To determine the number of E/M office visits performed in HOPDs in a given county, we summed the number of services billed in the Medicare Outpatient file, including services provided by critical access hospitals.⁴ The number of E/M office visits performed in physician offices was calculated by subtracting the number of HOPD services from the total number of services.⁵ To calculate the number of services per Medicare beneficiary in a given county, we used the Medicare Denominator file to identify fee-for-service (FFS) beneficiaries.⁶

²We defined E/M office visits as HCPCS codes 99201-99215. For the purposes of this study, we did not differentiate based on the intensity of E/M office visits.

³We considered an Outpatient file service a professional service if the bill type was 85x and the revenue center was 096x, 097x, or 098x. For more information on this, see the Medicare Claims Processing Manual, Chapter 4.

⁴Specifically, we analyzed claims with a type of bill 13x or 85x and excluded professional claims. As a sensitivity analysis, we determined the number of HOPD services using the place of service code on Carrier claims. This specification tended to indicate that a slightly lower percentage of services were performed in HOPDs. In 2013, for example, we found that 10.1 percent of E/M office visits were performed in HOPDs using the place of service variable, compared to 11.1 percent using Outpatient file claims. However, when we tested this alternative specification, counties with higher levels of consolidation still had higher HOPD utilization. In 2013, for example, the counties in the bottom quintile in terms of vertical consolidation had a median of 4.5 percent of office visits performed in HOPDs compared to 12.9 percent for the counties in the highest quintiles. This range is similar to the one we found using our Outpatient file claims as the numerator of the percentage—4.1 percent to 14.1 percent.

⁵We classified all services not performed in HOPDs as being performed in a physician office, as less than 2 percent of E/M office visits were performed in settings other than an HOPD or physician office during our study period.

⁶The Medicare Denominator file contains demographic and enrollment information about Medicare beneficiaries.

To calculate the level of vertical consolidation in each county, we used the AHA Annual Survey DatabaseTM and MedPAR claims.⁷ First, we calculated the share of MedPAR services that were delivered by vertically consolidated hospitals in each zip code in which a beneficiary received at least one service.⁸ We then created a weighted average hospital level vertical consolidation measure using all the zip codes a hospital served in a year. Finally, we created a weighted average county level vertical consolidation measure based on the hospitals that served each county.⁹ To calculate control variables for our regression analyses, we used a similar process. Specifically, we calculated variables for profit status, public vs. private ownership, hospital size, teaching status, whether a hospital belonged to a system, and Herfindahl-Hirschman Indexes (HHI) for hospital and physician market concentration.¹⁰

To determine how the level of vertical consolidation in a county was associated with the setting in which E/M office visits were provided before controlling for other factors, we conducted a bivariate analysis for every year from 2007 through 2013. Specifically, we ranked counties into quintiles based on the level of consolidation in each county in 2013. In the bottom quintile were the 20 percent of counties with the lowest levels of

⁷Because we did not know the markets of the vertically consolidated physicians, we used the MedPAR markets of the hospitals with whom they are consolidated as a proxy. As a sensitivity analysis, we used HOPD markets as a proxy, as those markets could better proxy physician markets. When we used HOPD markets instead of the MedPAR markets, counties with higher levels of consolidation still had higher HOPD utilization. In 2013, for example, the counties in the bottom quintile had a median of 5.4 percent of E/M office visits performed in HOPDs compared to 14.8 percent for the counties in the highest quintile. This range is similar to the one we found using MedPAR data—4.1 percent to 14.1 percent.

⁸For this analysis, we considered a hospital to be vertically consolidated if it had more than 10 vertically consolidated physicians. This prevented hospitals that had a very small number of vertically consolidated physicians as counting the same as hospitals with significantly more physicians.

⁹For each county, this variable is between 0 and 1; a value of 1 represents a county that is served entirely by hospitals whose entire market area—that is, zip codes of the beneficiaries served by the hospital—is served by vertically consolidated hospitals and a value of 0 represents a county that is served entirely by hospitals whose entire market areas are served by hospitals that are not vertically consolidated.

¹⁰For the purposes of creating our measure of horizontal hospital concentration, we considered all hospitals that were part of the same system to be part of the same hospital because we assumed that hospitals that are part of the same system do not compete with one another in the same manner as hospitals that are not part of the same system.

vertical consolidation; such counties were considered to have low levels of vertical consolidation. In order, the next four quintiles were considered to have medium-low, medium, medium-high, and high levels of vertical consolidation. For 2007 through 2012, we used the same thresholds to sort counties into the five levels of consolidation. Within each of the five county groups for each year, we then calculated the 1) median and mean percentage of E/M office visits that were performed in HOPDs and physician offices and 2) the median and mean number of E/M office visits per beneficiary performed in HOPDs, physician offices, and in total.

To determine whether counties with higher levels of vertical consolidation had sicker or healthier beneficiaries, we calculated descriptive statistics for beneficiaries who lived in a given county in 2013 using the Medicare denominator file.¹¹ Specifically, for each county, we calculated the mean and median risk score, age, and the percentage of beneficiaries that died, had end-stage renal disease, were disabled, and were dually eligible for Medicare and Medicaid.¹² Similar to the bivariate analysis described above, we then ranked counties into quintiles based on the level of vertical consolidation in 2013. Within the quintiles, we calculated the median and mean values for each of the variables.

Panel-Data Regression Model

We developed an econometric model to analyze the effect of vertical consolidation on the setting where beneficiaries received E/M office visits from 2007 through 2013. Specifically, we analyzed how the level of vertical consolidation affected 1) the percentage of E/M office visits performed in HOPDs, 2) the number of E/M office visits performed in HOPDs per beneficiary, and 3) the total number of E/M office visits per beneficiary. Our analysis used data for 3,121 U.S. counties from 2007 through 2013.

Dependent Variables

- For the model analyzing the percentage of E/M office visits performed in HOPDs, we used the log-odds transformation (also called the logit

¹¹We limited these calculations to only Medicare FFS beneficiaries. These beneficiaries can receive services outside of their county of residence. With the exception of the death rate, all characteristics were weighted based on the number of months a beneficiary was enrolled in Medicare. Weighting the death rate by the number of months beneficiaries were enrolled in Medicare artificially deflates the death rate.

¹²When calculating the risk score, we excluded beneficiaries that were newly enrolled, enrolled in Medicare Advantage, had end-stage renal disease, or were in a long term care facility. The risk score used was normalized and adjusted for coding intensity.

transformation) of this proportion. Specifically, we used the following formula for this dependent variable:

$$Y_{it} = \log(r_{it}/(1 - r_{it}))$$

Where r_{it} represents the proportion of E/M office visits that were provided in an HOPD, and the i and t subscripts represent the county and year, respectively.¹³ This formulation has the advantage of allowing the dependent variable to range over all values for any value of r between zero and one.¹⁴

Explanatory Variables

- For our models analyzing the number of E/M office visits performed in HOPDs per beneficiary and the total number of E/M office visits per beneficiary, our dependent variables were the logarithm of the number of services per beneficiary.
- Our key explanatory variable was the level of vertical consolidation. Our hypothesis was that higher levels of vertical consolidation would be associated with a higher percentage and number of E/M office visits being performed in HOPDs.
- Our model controlled for horizontal physician and horizontal hospital concentration, using HHIs. We hypothesized that greater concentration of market power among physicians would lead to E/M office visits being provided in physician offices rather than HOPDs, all else being equal. In contrast, we hypothesized that greater concentration of market power among hospitals would lead to E/M office visits being provided in HOPDs rather than physician offices, all else being equal.
- Our model included hospital characteristic variables to account for possible differences in hospital size and institutional arrangements. Specifically, our model included variables for the following hospital characteristics: profit status, public vs. private ownership, hospital

¹³We also ran a model using the proportion r_{it} , and the results for our main variable of interest, vertical consolidation, were similar in terms of sign and significance.

¹⁴This transformation required that the value of r_{it} be strictly greater than 0 and less than 1. Although there were no observations with a value of 0, about 0.5 percent of our observations were equal to or exceeded 1. For any value equal to or greater than 1, we changed the value to 0.9999 for the model estimation. To ensure that the small number of values that were transformed did not unduly affect our results, we also ran the model excluding these observations.

Model Specification

size, teaching status, and whether a hospital belonged to a system.

- Our model included time fixed effects (a dummy variable for each year in the analysis). In addition, we included county fixed effects (a dummy variable for each of the 3,121 counties in the analysis). These county fixed effects assist in controlling for unobserved heterogeneity.

The regression analysis used a panel data model for 3,121 U.S. counties for the years 2007 through 2013 as follows:

$$Y_{it} = \sum_i c_i + \sum_t f_t + \sum_h \alpha_h Z_{it}^h + \varepsilon_{it}$$

In this model:

- Y_{it} is the dependent variable for county i in year t . For the model analyzing the percentage of E/M office visits performed in HOPDs, the dependent variable is the logit transformation of the percentage of services in an HOPD setting—that is, $Y_{it} = \log(r_{it}/(1 - r_{it}))$, where r_{it} is the percentage of E/M office visits in an HOPD. For our models analyzing the number of E/M office visits performed in HOPDs per beneficiary and the total number of E/M office visits per beneficiary, $Y_{it} = \log(s_{it})$, where s_{it} is the number of services per Medicare beneficiary.
- c_i is a fixed effect or dummy variable for county i .
- f_t is a fixed effect or dummy variable for year t .
- Z_{it}^h are the hospital-characteristic variables and market structure variables, such as horizontal physician HHI, horizontal hospital HHI, and vertical consolidation, associated with county i at time t , and α_h are the parameters associated with each of these variables.
- ε_{it} are the error terms.
- We used `xtivreg2` in STATA to estimate our models.¹⁵ Our parameter estimates are consistent given the assumptions of our model. Our

¹⁵The `xtivreg2` procedure in STATA implements Instrumental Variable/General Method of Moments estimation of the fixed-effects and first-differences panel data models with possibly endogenous regressors.

standard errors are robust to heteroskedasticity and clustering at the county level.

- The hospital characteristics, the horizontal hospital HHI, and the vertical consolidation measures were calculated using MedPAR data, while the dependent variable was calculated using Outpatient and Carrier file data. This separation reduced the likelihood that these market characteristics were correlated with unobserved determinants of the setting where beneficiaries received E/M office visits. However, the physician HHI measure was calculated using Carrier file data, so we tested this variable for endogeneity.¹⁶

Limitations

Our study has some limitations. While the response rate for the AHA Annual Survey DatabaseTM was high for each year—about 76 percent—the data on vertical consolidation was self-reported by hospitals. In the process of examining the AHA Annual Survey Database,TM we identified responses that we believe were likely duplicative. However, our ability to identify and fix duplicative responses is limited because we were not able to directly contact survey respondents based on our data licensing agreement. Second, because the AHA Annual Survey DatabaseTM does not contain identifying information for vertically consolidated physicians, we used hospital inpatient markets to proxy vertically consolidated physician markets. Although this is a limitation, we conducted a sensitivity analysis with HOPD markets, and our results held. Further, we believe there are several reasons why vertically consolidated physician markets should substantially overlap with hospital inpatient markets. For example, physician practices generally must be located within 35 miles of its parent hospital to bill as an HOPD, and many payment reforms—such as accountable care organizations, bundled payments, and Medicare’s Hospital Readmissions Reduction Program—reward hospitals for managing their patients across inpatient and outpatient settings. Third, vertically consolidated hospitals varied widely in terms of the number of vertically consolidated physicians associated with them. While our bivariate and regression analyses only consider a hospital vertically

¹⁶Other work on the effects of market concentration on prices has instrumented the key concentration measures, see, for example, W. N. Evans et al. “Endogeneity in the Concentration-Price Relationship: Causes, Consequences, and Cures.” *The Journal of Industrial Economics*, vol. XLI, no. 4, December 1993. However, our work focused on modeling the setting where beneficiaries received services and utilization, not price. Although work by Baker et al. analyzing prices did not use instrumental variables, we wanted to test for the possibility that there was endogeneity of the horizontal physician HHI variable.

consolidated if it has more than 10 vertically consolidated physicians, we were unable to make our measure of vertical consolidation reflect the intensity of vertical consolidation relationships—that is, the number of vertically consolidated physicians per hospital—because of data limitations. Finally, time lags may occur between vertical consolidation and our measures of how often E/M office visits are performed in an HOPD. A hospital can purchase physician practices and not convert them to HOPDs immediately or ever. Consequently, these lags may be long and variable, and we have no systematic data to measure the timing of these possible effects.

Data Reliability and Audit Standards

We took several steps to ensure that the data used to produce this report were sufficiently reliable. Specifically, we assessed the reliability of the Centers for Medicare & Medicaid Services data and the AHA Annual Survey Database™ we used by interviewing officials responsible for overseeing these data sources. We also reviewed relevant documentation and examined the data for obvious errors, such as missing values and values outside of expected ranges. We determined that the data were sufficiently reliable for the purposes of this report.

We conducted this performance audit from February 2014 through December 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Full Regression Results

This appendix provides more detailed results for the models we used to analyze the effect of vertical consolidation on the setting where beneficiaries received E/M office visits from 2007 through 2013.

- Counties with higher levels of vertical consolidation were significantly more likely to have a higher proportion of their E/M office visits performed in HOPDs. These counties also had a significantly higher rate of utilization of E/M office visits in HOPDs. However, those same counties also had a significantly lower rate of overall utilization of E/M office visits, although the size of this negative association was smaller.¹ Specifically, all else being equal, our models predict that a county with no vertical consolidation going to completely consolidated would experience:
 - an increase in the percent of E/M office visits performed in HOPDs of 2.7 percentage points on average;
 - an increase in the number of E/M office visits per beneficiary being performed in HOPDs of approximately 30 percent on average; and
 - a decrease in the total number of E/M office visits per beneficiary of less than 2 percent on average.
- We used a set of medical service supply variables from the Area Health Resource Files as instruments: the number of federal and non-federal active MDs as a percentage of the total population, total hospital beds per capita, and whether the area was designated as a health care professional shortage area for primary care physicians.²

¹In order to conduct additional sensitivity analyses, we examined alternative specifications for our models. First, we replaced the logit transformation in our model that analyzed the percentage of E/M office visits performed in HOPDs with a simple percent of E/M office visits in an HOPD and found similar results for vertical consolidation. Secondly, we estimated our utilization per beneficiary equations using levels rather than logs and found similar results in terms of sign and significance on the main variable of interest—namely, the vertical hospital consolidation measure.

²Area Health Resources Files (AHRF) contain county, state, and national level data on a broad range of health resources and socioeconomic indicators which impact demand for health care. The AHRF provides current as well as historic data for more than 6,000 variables for each of the nation's counties and contains information on health facilities, health professions, measures of resource scarcity, health status, economic activity, health training programs, and socioeconomic and environmental characteristics.

- In our models of the percentage of E/M office visits performed in HOPDs and total number of E/M office visits per beneficiary, the C-test accepted the null hypothesis of exogeneity of the physician horizontal Herfindahl-Hirschman Index (HHI) variable, and the Hansen J-statistic accepted the null hypothesis that our instruments were valid. The Sanderson-Windmeijer test also supported our use of these instruments, by rejecting the null hypothesis of weak instruments.
- In our model of the number of E/M office visits performed in HOPDs, the Hansen J-statistic accepted the null hypothesis that our instruments were valid, and the Sanderson-Windmeijer test rejected the null hypothesis of weak instruments. However, the C-test rejected the null hypothesis of exogeneity of the physician horizontal HHI variable, so we report our instrumental variable estimates for our log of utilization of E/M office visits performed in HOPDs.
- A full set of results is provided in table 4.

Table 4: Regression Estimation Results for U.S. Counties, 2007 through 2013

	Ordinary least squares estimate of logit of percent HOPD	Instrumental variable estimate of log of per beneficiary utilization in HOPD	Ordinary least squares estimate of log of per beneficiary utilization overall
Vertical consolidation	0.311*** (0.0000)	0.304** (0.0016)	-0.0179* (0.0106)
Physician horizontal Herfindahl-Hirschman Index (HHI)	-4.538*** (0.0000)	-13.48 (0.1117)	0.735*** (0.0000)
Hospital horizontal HHI	0.426 (0.1534)	0.838 (0.0548)	0.0229 (0.4897)
For-profit hospitals	-0.408*** (0.0001)	-0.241* (0.0348)	-0.0297 (0.0612)
Public ownership hospitals	0.580*** (0.0000)	0.652*** (0.0002)	-0.0232 (0.1824)
Hospitals with 100 to 300 beds	-0.626*** (0.0002)	-0.420** (0.0013)	0.0260 (0.0938)
Hospitals with more than 300 beds	-0.587*** (0.0004)	-0.263* (0.0392)	0.0195 (0.2525)
Teaching hospitals	-0.0267	-0.00288	-0.0126

Appendix II: Full Regression Results

	Ordinary least squares estimate of logit of percent HOPD	Instrumental variable estimate of log of per beneficiary utilization in HOPD	Ordinary least squares estimate of log of per beneficiary utilization overall
	(0.6930)	(0.9672)	(0.1986)
System hospitals	0.151 (0.0764)	0.0459 (0.4344)	0.0194* (0.0216)
2007 dummy	-0.535*** (0.0000)	-0.473*** (0.0000)	-0.0744*** (0.0000)
2008 dummy	-0.445*** (0.0000)	-0.390*** (0.0000)	-0.0762*** (0.0000)
2009 dummy	-0.354*** (0.0000)	-0.307*** (0.0000)	-0.0621*** (0.0000)
2010 dummy	-0.378*** (0.0000)	-0.318*** (0.0000)	0.00573** (0.0014)
2011 dummy	-0.254*** (0.0000)	-0.203*** (0.0000)	-0.00988*** (0.0000)
2012 dummy	-0.105*** (0.0000)	-0.0840*** (0.0000)	-0.0150*** (0.0000)
Observations	21,847	21,847	21,847

p-values in parentheses - * p<0.05, ** p<0.01, * p<0.001**

Source: GAO analysis of Centers for Medicare & Medicaid Services data, Area Health Resources Files, and American Hospital Association data. | GAO-16-189

Appendix III: Evaluation & Management Office Visit Utilization by Level of Vertical Consolidation, 2007 through 2013

The percentage of E/M office visits—as well as the number of E/M office visits per 100 beneficiaries—performed in HOPDs was generally higher in counties with higher levels of vertical consolidation from 2007 through 2013 (see tables 5 - 11).

Table 5: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2007

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	3.9%	22	599
Medium-Low	5.9	30	547
Medium	6.2	31	534
Medium-High	7.9	38	545
High	7.3	39	580

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Table 6: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2008

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	3.7%	21	608
Medium-Low	6.2	33	556
Medium	7.2	36	532
Medium-High	9.8	45	528
High	8.2	43	582

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

**Appendix III: Evaluation & Management Office
Visit Utilization by Level of Vertical
Consolidation, 2007 through 2013**

Table 7: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2009

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	3.8%	22	614
Medium-Low	6.7	35	572
Medium	7.0	37	545
Medium-High	8.9	45	537
High	8.4	46	577

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Table 8: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2010

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	3.8%	23	644
Medium-Low	5.9	34	610
Medium	7.5	42	573
Medium-High	7.3	41	588
High	8.5	52	620

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Appendix III: Evaluation & Management Office
 Visit Utilization by Level of Vertical
 Consolidation, 2007 through 2013

Table 9: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2011

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	3.8%	23	641
Medium-Low	6.2	36	607
Medium	8.3	46	564
Medium-High	7.9	49	599
High	9.8	57	600

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Table 10: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2012

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	4.1%	24	636
Medium-Low	6.6	38	610
Medium	8.9	49	572
Medium-High	9.7	56	582
High	11.8	66	600

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Table 11: Utilization of E/M Office Visits in Total and in HOPDs, by County Level of Vertical Consolidation, 2013

Level of Vertical Consolidation	Median Percentage of E/M Office Visits Performed in HOPDs	Median Number of E/M Office Visits Performed in HOPDs per 100 Beneficiaries	Median Number of Total E/M Office Visits per 100 Beneficiaries
Low	4.1%	26	658
Medium-Low	6.1	37	622
Medium	8.7	49	580
Medium-High	11.6	65	586
High	14.1	82	601

Source: GAO analysis of Centers for Medicare & Medicaid Services and American Hospital Association data. | GAO-16-189

Notes: Evaluation & management (E/M), hospital outpatient department (HOPD).

Appendix IV: Association between Vertical Consolidation and Overall Utilization of Evaluation & Management Office Visits across All Settings

To examine whether vertical consolidation affected total utilization, we examined the association between vertical consolidation in a county and the total number of evaluation & management (E/M) office visits per beneficiary and found mixed results. Specifically, while counties with the lowest level of vertical consolidation had higher total utilization of E/M office visits compared to counties with the highest levels of vertical consolidation, total utilization of E/M office visits neither increases nor decreases consistently as the level of vertical consolidation increases in a county in our bivariate analysis. For example, in 2013, the median number of total E/M office visits per 100 beneficiaries decreased from 658 among the counties with the lowest levels of vertical consolidation to 580 among counties with a medium level of vertical consolidation; however, among counties with high levels of vertical consolidation, the number increased to 601.¹ Furthermore, unlike our results examining the setting in which E/M office visits were performed, our results changed when we tested an alternative measure of vertical consolidation.² For example, using the alternative specification, the median number of total E/M office visits per 100 beneficiaries in counties with the highest level of vertical consolidation was at least 10 services per 100 beneficiaries higher than in counties with the lowest level of consolidation in 4 out of 7 years from 2007 through 2013.

¹We found similar patterns in each year from 2007 through 2012. We also tested the association between vertical consolidation and total volume of E/M office visits using a regression based analysis and found a small, significant association. See appendix II for more detailed results.

²Because we did not know the markets of the vertically consolidated physicians, we used the MedPAR markets of the hospitals with whom they are consolidated as a proxy. As a sensitivity analysis, we used HOPD markets as a proxy, as those markets can better proxy physician markets.

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

James Cosgrove, (202) 512-7114 or cosgrovej@gao.gov

Staff Acknowledgments

In addition to the contact above, Jessica Farb, Assistant Director; Todd Anderson; Krister Friday; Michael Kendix; Richard Lipinski; Brian O'Donnell; Dan Ries; Said Sariolghalam; Eric Wedum; and Jennifer Whitworth made key contributions to this report.

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Hospital-Employed Physicians Drive Up Costs, Say 16 States

Robert Lowes | September 02, 2014

The attorneys general (AGs) of 16 states warn that hospital employment of physicians, which is considered in many quarters to be the inevitable fate of medical practice, is driving up healthcare costs without necessarily improving the quality of care.

The AGs sounded this alarm last month in a federal appellate case in which the Federal Trade Commission is seeking to prevent St. Luke's Health System in Boise, Idaho, from merging with Saltzer Medical Group in nearby Nampa on antitrust grounds. The AGs side with the government, as do America's Health Insurance Plans, a trade association. The case spotlights the economics of hospitals employing physicians and the challenges of implementing the Affordable Care Act.

Healthcare reform was the ostensible rationale for St. Luke's, Idaho's largest health system, to acquire the 40-physician Saltzer Medical Group, the state's largest, independent multispecialty practice. Both parties viewed the merger as a step toward creating an integrated, more efficient system of care in which reimbursement depends on patient outcomes, not the volume of services. The Affordable Care Act is pushing hospitals and physicians in that direction.

Another local hospital, however, did not view the merger so favorably. St. Alphonsus Medical Center in Nampa and its parent health system sued in federal district court in 2012 to overturn the merger, saying it would stifle competition. The Federal Trade Commission made the same objection in a second suit that was combined with the first. The federal agency contended that the merger would give the new entity a dominant, 80% market share in terms of adult primary care in Nampa and would raise healthcare costs in the process.

Siding with St. Alphonsus and the Federal Trade Commission, US District Judge B. Lynn Winmill ordered St. Luke's in June to divest itself of the Saltzer Medical Group. Winmill noted that the merger would give St. Luke's greater leverage to negotiate higher reimbursement rates from insurers. In addition, the hospital system could boost revenue for X-rays, laboratory tests, and other ancillary services performed in physician offices by charging insurers a higher hospital facility rate, even though the location of the services remained the same. Winmill cited an estimate from Blue Cross of Idaho that put this markup at 30% to 35%.

The Saltzer physicians would benefit from this simple billing technicality, Winmill said in a court document titled "Findings of Fact and Conclusion of Law." Their new employer, St. Luke's, planned to give them a 30% raise "by obtaining 'higher hospital reimbursement' from the health plans."

The referral patterns of the Saltzer physicians once they joined St. Luke's also would likely hurt competition among area hospitals, according to Winmill. The professional service agreements signed by the physicians permitted them to admit patients to any hospital they wanted to, but Winmill pointed to evidence showing that employed physicians invariably reduce referrals to other hospitals in favor of their own.

Winmill lauded the stated intention behind the merger — creating an integrated system that could improve the quality of care and reduce costs in a pay-for-performance environment — but said that St. Luke's and the medical group could achieve that goal without combining.

The Might of 800-Pound Gorillas

St. Luke's and the Saltzer Medical Group quickly took their cause to the US Court of Appeals for the Ninth Circuit. In their initial brief, they said Winmill should not have based his antitrust analysis on the small healthcare market in Nampa, just 20 miles outside Boise, one of several nearby communities in which Nampa patients could find lower-cost providers. Nearly one third of Nampa residents were already traveling outside of Nampa for adult primary care.

In addition, the ability of St. Luke's to charge higher prices for ancillary services in physician offices translates into increased costs only if patients cannot avail themselves of lower-price competitors because of the health system's market power in Nampa, the health system and medical group argued. However, Winmill failed to assess whether St. Luke's indeed would wield that market power postmerger, they said. "The district court finding is meaningless."

St. Luke's and Saltzer also said higher prices for ancillary services were not necessarily in the cards. Although Blue Cross of Idaho predicted a 30% to 35% increase, it had negotiated a contract with St. Luke's before the merger that would prevent a price hike of this magnitude from materializing if it acquired the medical group. "The district court failed entirely to consider Blue Cross's countervailing leverage," they said.

The appellate court put the unwinding of the St. Luke's-Saltzer merger on hold until it reached a decision.

National Implications

The appellate case has national implications for marriages between hospitals and physician groups, as evidenced by the friend-of-the-court brief from the AGs of California, Illinois, Pennsylvania, and 13 other states. These officials stated that they have seen first-hand the effects of hospitals acquiring physician practices; namely, increased bargaining power with health insurers, higher hospital facility fees for physician services, and loss of referrals to rival hospitals.

"These developments," the AGs wrote, "have all led to higher prices for insurers, resulting in consumers paying higher premiums, deductibles, and co-pays."

The AGs noted that the higher prices charged by a dominant healthcare provider in a particular market do not usually motivate patients to seek less expensive providers down the road. Most are unwilling or unable to travel long distances for medical care, and insured patients are insensitive to price anyway because out-of-pocket expenses constitute "only a small fraction of their total healthcare costs." As a result, 800-pound gorillas in the provider world get their way, according to the AGs.

Similar to US District Judge Winmill, the AGs acknowledged that greater collaboration between hospitals and medical groups in the form of shared electronic health records, coordinated patient outreach, and the implementation of best practices can improve the quality of care.

"However, the benefits of integration can be achieved by means that preserve competition," the AGs wrote, referring to such creations of healthcare reform as accountable care organizations. They added that hospitals and physician groups can share patient records without having to merge; there are other ways to get on the same digital page.

America's Health Insurance Plans reached the same conclusion in its friend-of-the-court brief: "The marketplace is moving strongly toward reform without a need for anticompetitive provider consolidation."

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Edited by David Leonhardt

The Up hot
PUBLIC HEALTH

When Hospitals Buy Doctors' Offices, and Patient Fees Soar

Margot Sanger-Katz @sangerkatz FEB. 6, 2015

Imagine you're a Medicare patient, and you go to your doctor for an ultrasound of your heart one month. Medicare pays your doctor's office \$189, and you pay about 20 percent of that bill as a co-payment.

Then, the next month, your doctor's practice has been bought by the local hospital. You go to the same building and get the same test from the same doctor, but suddenly the price has shot up to \$453, as has your share of the bill.

Patients around the country are getting that unpleasant surprise, as more and more doctors' offices are being bought by hospitals. Medicare, the government health insurance program for those 65 and over or the disabled, pays one price to independent doctors and another to doctors who work for large health systems — even if they are performing the exact same service in the exact same place.

This week, the Obama administration recommended a change to eliminate much of that gap. Despite expected protests from hospitals and

doctors, the idea has a chance of being adopted because it would yield huge savings for Medicare and patients.

In the dry language of the annual budget, the White House asks Congress to “encourage efficient care by improving incentives to provide care in the most appropriate ambulatory setting.” In normal English, that means reducing financial incentives that are causing many doctors to sell their practices to hospitals just to take advantage of extra revenue.

The heart doctors are a great example. In 2009, the federal government cut back on what it paid to cardiologists in private practice who offered certain tests to their patients. Medicare determined that the tests, which made up about 30 percent of a typical cardiologist’s revenue, cost more than was justified, and there was evidence that some doctors were overusing them. Suddenly, Medicare paid about a third less than it had before.

But the government didn’t cut what it paid cardiologists who worked for a hospital and provided the same test. It actually paid those doctors more, because the payment systems were completely separate. In general, Medicare assumes that hospital care is by definition more expensive to provide than office-based care.

You can imagine the result: Over the past five years, the number of cardiologists in private practice has plummeted as more and more doctors sold their practices to nearby hospitals that weren’t subject to the new cuts. Between 2007 and 2012, the number of cardiologists working for hospitals more than tripled, according to a survey from the American College of Cardiology, while the percentage working in private practice fell to 36 percent from 59 percent. At the time of the survey, an additional 31 percent of practices were either in the midst of merger talks or considering it. The group’s former chief operating officer once described the shift to me as “like a migration of wildebeests.”

Cardiologists are not the only doctors who have been migrating toward

hospital practice. In the last few years, there have been increases in the number of doctors working for hospitals across the specialties. And spreads between fees for office services exist in an array of medical services, down to the basic office visit. The president's proposal would apply to all doctors working in off-campus, hospital-owned practices.

Shifting practice ownership patterns have ripple effects for patients with private insurance, too. Like Medicare, most private insurers pay higher prices to hospitals than to independent doctors.

Private insurers tend to copy many of Medicare's payment policies. And, in general, large hospital groups tend to have more negotiating clout with insurers, meaning they can bargain for higher prices than smaller practices.

The administration's proposal would essentially end that system of different prices for similar services. Medicare would pay the same for any visit, test or procedure offered by doctors who work in private practice and by those who work in off-campus practices that are owned by hospitals. Doctors who work in the hospital building could still be paid the higher hospital rate. But the free-standing practice that suddenly changes hands would not continue to be paid more.

The result, in dollar terms, is estimated to be very large. According to the White House's calculation, Medicare would save nearly \$30 billion over 10 years if Congress required the payment switch. That's more than Medicare could save if it raised the eligibility age to 67. And that doesn't even count the money that could be saved by Medicare patients whose co-payments will also go down.

Hospitals don't like the idea. Nearly all the money would come out of their pockets, and they argue that running a medical practice really does cost more for hospitals than it does for independent physician practices. Hospitals have to stay open at all hours, run emergency rooms and comply with an array of regulatory requirements that physician-owned practices don't need to worry

about.

“You can't just convert it and be exactly the same,” said Rich Pollack, an executive vice president at the American Hospital Association. “You have to meet the requirements.”

The Medicare Payment Advisory Committee, a group of experts that advises Congress, thinks that the pay differences should be narrowed, but only for a select set of medical services in which it's really clear that there's no difference between the care offered by a hospital and a physician office.

The pay differences, of course, are not the only reason that more doctors are going to work for hospitals. There are generational trends: Younger doctors are less interested in entrepreneurship and more interested in predictable hours and salary. And another Medicare program is trying to create financial incentives for health systems to manage patients' entire health care experience, which many hospitals find easier to do if they employ the doctors.

Still, Robert Berenson, a physician and a senior fellow at the Urban Institute, said it's clear that a lot of recent doctor-hospital mergers have been driven by Medicare's disparate pay policies. He thinks the budget proposal lacks needed subtlety, but he supports equalizing many payments in concept. “If hospitals are going to employ physicians, it should be done for the right reasons, not the wrong reasons,” he said.

The change would have big consequences, especially for hospitals, which have already endured several rounds of recent Medicare cuts. But in contrast to a lot of things in the president's budget, it's hard to dismiss this proposal as mere wishful thinking. Congress is often looking for places to save money in the Medicare budget, in part because it must find money every year to keep all doctors' pay from declining precipitously — the result of a misguided payment formula passed in the 1990s.

“The list of available offsets is dwindling,” said Eric Zimmerman, a partner at the lobbying firm McDermott Will & Emery, who represents many health care providers. In an email, he described the doctor’s pay proposal as one that “may be moving to the top of the list.”

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COMPETITION IN HEALTH CARE MARKETS

**Keynote Address by Julie Brill
Commissioner, Federal Trade Commission
2014 Hal White Antitrust Conference
June 9, 2014
Washington, D.C.**

Good evening, and many thanks to Bates White, and especially Joe Farrell for inviting me to address you this evening. I am delighted to be part of today's conference.

My remarks tonight will focus on health care and competition. This year represents the FTC's 100th anniversary, and we have much to celebrate when it comes to health care and competition. And I can't think of a more appropriate topic for this conference given the key role economic analysis plays in the FTC's health care enforcement program. In no other area of our work has it proved to be more important to get the economic analysis correct in order to achieve the right result.

The history of our hospital merger program well illustrates this point. After the federal antitrust agencies successfully challenged a number of hospital mergers in the 1980s and early 1990s,¹ we suffered a string of court losses in the mid- and late-1990s, even in cases involving highly concentrated hospital markets.² In 2002, the FTC decided to take a step back and examine the reasons for our losses, and whether our analysis of hospital markets was correct.

¹ See, e.g., *FTC v. University Health, Inc.*, 938 F.2d 1206 (11th Cir. 1991); *United States v. Rockford Mem'l*, 717 F.Supp. 1251, *aff'd*, 898 F.2d 1278 (7th Cir. 1990).

² *Hosp. Bd. of Directors of Lee County*, 38 F.3d 1184 (11th Cir. 1994); *FTC v. Freeman Hospital*, 69 F.3d 260 (8th Cir. 1995); *FTC v. Butterworth Health Corp.*, 946 F. Supp. 1285 (W.D. Mich. 1996), *aff'd mem.*, 121 F.3d 708 (6th Cir. 1997); *United States v. Mercy Health Servs.*, 902 F. Supp. 968 (N.D. Iowa 1995), *vacated as moot*, 107 F.3d 632 (8th Cir. 1997); *United States v. Long Island Jewish Medical Center*, 983 F. Supp. 121 (E.D.N.Y. 1997); *FTC v. Tenet Healthcare Corp.*, 186 F.3d 1045 (8th Cir. 1999). See also *State of California v. Sutter Health System*, 84 F. Supp. 2d 1057 (N.D. Cal. 2000), *aff'd*, 217 F.3d 846 (9th Cir. 2000), *amended by*, 130 F. Supp. 2d 1137 (N.D. Cal. 2001).

We engaged in an in-depth retrospective study, used our 6(b) authority to collect data from hospitals and insurance companies, and held workshops along with DOJ.³ Cory Capps of Bates and White, and other economists contributed significantly to our understanding as well.⁴ This intense period of reflection led to several important papers demonstrating that the consummated mergers stemming from the hospital merger challenges we lost – including those involving non-profits – resulted in anticompetitive effects, particularly increased prices.⁵ We also determined that our losses were due in part to the courts’ acceptance of faulty economic analysis of geographic markets (through improper reliance on the Elzinga-Hogarty test) and competitive effects (through improper use of critical loss analysis).⁶

³ Michael G. Vita & Seth Sacher, *The Competitive Effects of Not-for-Profit Hospital Mergers: A Case Study*, 49 J. INDUS. ECON. 63 (2001); *Everything Old is New Again: Health Care and Competition in the 21st Century*, Prepared Remarks of Timothy J. Muris before the 7th Annual Competition in Health Care Forum (Nov. 7, 2002), available at http://www.ftc.gov/sites/default/files/documents/public_statements/everything-old-new-again-health-care-and-competition-21st-century/murishealthcarespeech0211.pdf; Press Release, Fed. Trade Comm’n, FTC Chairman Announces Public Hearings on Health Care and Competition Law and Policy to Begin in February 2003 (Nov. 7, 2002), available at <http://www.ftc.gov/opa/2002/11/murishealthcare.shtm>; FED. TRADE COMM’N & DEP’T OF JUSTICE, IMPROVING HEALTH CARE: A DOSE OF COMPETITION (July 2004), available at <http://www.ftc.gov/reports/healthcare/040723healthcarerpt.pdf>.

⁴ See Cory Capps, David Dranove, & Mark Satterthwaite, *Competition and Market Power in Option Demand Markets*, RAND JOURNAL OF ECONOMICS vol. 34, no. 4 (2003), at 737–63; Robert J. Town & Gregory Vistnes, *Hospital Competition in HMO Networks*, JOURNAL OF HEALTH ECONOMICS vol. 20, no. 5 (2001), at 733–53.

⁵ Steven Tenn, *The Price Effects of Hospital Mergers: A Case Study of the Sutter-Summit Transaction*, Fed. Trade Comm’n Bureau of Economics, Working Paper No. 293, (2008), available at <http://www.ftc.gov/be/workpapers/wp293.pdf>; David J. Balan & Patrick S. Romano, *A Retrospective Analysis of the Clinical Quality Effects of the Acquisition of Highland Park Hospital by Evanston Northwestern Healthcare*, Fed. Trade Comm’n Bureau of Economics, Working Paper No. 307 (2010), available at <http://www.ftc.gov/be/workpapers/wp307.pdf>; Christopher Garmon & Deborah Haas-Wilson, *Hospital Mergers and Competitive Effects: Two Retrospective Analyses*, 18 INT’L J. ECON. BUS. 17 (2011); Aileen Thompson, *The Effect of Hospital Mergers on Inpatient Prices: A Case Study of the New Hanover – Cape Fear Transaction*, 18 INT’L J. ECON. BUS. 91 (2011); Orley Ashenfelter, Daniel Hosken, Michael Vita & Matthew Weinberg, *Retrospective Analysis of Hospital Mergers*, 18 INT’L J. ECON. BUS. 5 (2011).

⁶ See Cory Capps, David Dranove, Shane Greenstein, & Mark Satterthwaite, *Antitrust Policy and Hospital Mergers: Recommendations for a New Approach*, *Antitrust Bulletin* 47 (Winter 2002): 677-714; Cory Capps, David Dranove, Shane Greenstein, & Mark Satterthwaite, *The Silent Majority Fallacy of the Elzinga-Hogarty Criteria: A Critique and New Approach to Analyzing Hospital Mergers*, NBER Working Paper 8216 (2001). See also Cory Capps, *From Rockford to Joplin and Back Again: The Impact of Economics on Hospital Merger Enforcement*, BATES WHITE ECONOMIC CONSULTING (Apr. 2012), available at <http://html.documation.com/cds/health12/support/pdfs/12-1.pdf>; Cory S. Capps, *Economic Analysis of Hospital Mergers in the 21st Century, A New Economic Toolkit for Assessing*

Our intense retrospective paid off, as it helped us develop a better economic and legal enforcement framework specifically tailored to the unique competitive dynamics of hospital mergers. Using bargaining and “willingness-to-pay” modeling, our new framework more accurately reflects the ways in which hospitals compete.⁷ Under this model, if a merger among providers that are close substitutes increases the merged provider’s leverage with health plans because of inadequate alternatives, the provider gains the ability to obtain supra-competitive pricing. Using this improved enforcement framework beginning with our *Evanston* case,⁸ we now have an impressive string of victories under our belt,⁹ including most recently in the Sixth

Hospital Mergers, Antitrust in Healthcare Conference, ABA and American Health Lawyers Association (May 4, 2012), *available at* <http://html.documation.com/cds/health12/support/pdfs/12-1.pdf>.

⁷ The “willingness-to-pay” model is based on the real life negotiation strategies between hospitals and private insurers, where rates are determined by each party’s bargaining leverage. A hospital provider’s bargaining leverage depends on the value that it brings to the managed care organizations’s (MCO) network. For example, the hospital’s value could be based on the hospital’s location, or its reputation for quality. The more desirable a hospital is to an MCO’s enrollees, the higher the price the MCO is willing to pay to include a hospital in its network. In turn, an MCO’s bargaining leverage depends on the number of patients it can offer a hospital provider, and importantly, its ability to “walk-away” and assemble a network without the hospital using alternative hospitals in the geographic market that are acceptable substitutes.

⁸ *In the Matter of Evanston Northwestern Healthcare Corp.*, Docket No. 9315 (Commission Opinion), Aug. 6, 2007, *available at* <http://www.ftc.gov/sites/default/files/documents/cases/2007/08/070806opinion.pdf>.

⁹ *In the Matter of Inova Health System Foundation and Prince William Health System, Inc.*, Docket No. 9326, (Order Dismissing Complaint), 2008, *available at* www.ftc.gov/sites/default/files/documents/cases/2008/06/080617orderdismisscmpt.pdf; *In the Matter of Reading Health System and Surgical Institute of Reading*, Docket No. 9353 (Order Dismissing Complaint), 2012, *available at* <http://www.ftc.gov/sites/default/files/documents/cases/2012/12/121207readingsircmpt.pdf>; Fed. Trade Comm’n v. OSF Healthcare System and Rockford Health System, No. 3:11-cv-50344 (N.D. Ill. 2012), *available at* www.ftc.gov/sites/default/files/documents/cases/2012/04/120505rockfordmemo.pdf; FTC v. Phoebe Putney Health System, Inc., 568 U.S. ___, 133 S. Ct. 1003, 185 L. Ed. 2d 43 (2013); Fed. Trade Comm’n v. Phoebe Putney Health System, Inc., No. 1:11-CV-00058-WLS (M.D. Ga. 2013), *available at* <http://www.ftc.gov/sites/default/files/documents/cases/2013/06/130606phoebestip.pdf>; Statement of Bureau of Competition Director Richard Feinstein on announcement by Capella Healthcare that it will abandon its plan to acquire Mercy Hot Springs, June 27, 2013, *available at* <http://www.ftc.gov/news-events/press-releases/2013/06/statement-ftc-competition-director-richard-feinstein-todays>.

Circuit, where the court upheld our challenge to the merger between ProMedica and St. Luke's in the Toledo, Ohio area.¹⁰

ProMedica

ProMedica is the first case in 15 years – and the first case since we developed our new enforcement framework – in which a US Court of Appeals has reviewed a Commission's decision to block a hospital merger. As many of you know, the Sixth Circuit's decision in *ProMedica* was an overwhelming victory for the Commission on all counts.

There are a number of important aspects to the Sixth Circuit's decision. Let me mention two of the most notable ones from an economic perspective.

First, the court relied on evidence showing a strong correlation between ProMedica's market share and prices in this market. The court found that before the merger, ProMedica's share of the market was 46.8 percent, followed by the next largest competitor, Mercy, with 28.7 percent, then University of Toledo Medical Center with 13 percent, and finally the smallest, St. Luke's, with 11.5 percent. The court found that ProMedica's prices were on average 32 percent higher than Mercy's, 51 percent higher than UTMC's, and 74 percent higher than St. Luke's.¹¹ Thus, the higher the market share, the higher the prices.

The court further determined that the higher prices were not explained by higher quality of services or underlying costs, but rather were the result of ProMedica's greater bargaining leverage with health insurance plans.¹² In this respect the court adopted the Commission's use of bargaining modeling and "willingness-to-pay" theory. Using that analysis, the court agreed with

¹⁰ *ProMedica Health System, Inc. v. Fed. Trade Comm'n*, No. 12-3583 (6th Cir. April 22, 2014). ProMedica filed for rehearing and en banc review on June 3, 2014.

¹¹ *Id.* at 14.

¹² *Id.* at 3.

the Commission that post-merger, ProMedica would have much greatly enhanced bargaining leverage, because health plans simply could not offer a competitive product without including either ProMedica or St. Luke's in their hospital network.¹³

Second, the court recognized the appropriate role of presumptions in merger analysis as articulated in the 2010 Horizontal Merger Guidelines.¹⁴ The court said it was correct for the Commission to apply a presumption of illegality to a merger in which there was a strong correlation between market share and price, and where the merger would create further concentration in an already highly concentrated market.¹⁵ The court found that this merger increased the Herfindahl-Hirschman Index (HHI) by 1,078 (more than five times the increase necessary to trigger the presumption of illegality) to a total of 4,391 (almost double the 2,500 threshold for a highly concentrated market).¹⁶ Noting that these numbers “blew through [the HHI] barriers in spectacular fashion,”¹⁷ the court said “at some point the Commission is entitled to take seriously the alarm sounded by a merger’s HHI data.”¹⁸

I am proud to have authored the Commission’s decision in *ProMedica*. And I give enormous credit to former FTC Chairman Tim Muris and Mike Vita from our Bureau of Economics, who recognized fifteen years ago that our hospital merger work had hit an iceberg, and worked very hard to right our health care enforcement ship. The *ProMedica* decision

¹³ *Id.* at 14–15.

¹⁴ U.S. DEPT. OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES (Aug. 19, 2010) § 5.3, available at <http://www.ftc.gov/os/2010/08/100819hmg.pdf> [hereinafter 2010 HORIZONTAL MERGER GUIDELINES].

¹⁵ *ProMedica Health System, Inc.*, No. 12-3583 at 15.

¹⁶ *Id.* at 12.

¹⁷ *Id.*

¹⁸ *Id.* at 15.

demonstrates that, because of the foresight and groundbreaking work of our predecessors, my fellow Commissioners and I can set a clearer path for our hospital merger enforcement work.

Some believe we may be facing a similar challenge today to our work analyzing physician acquisitions and other forms of provider consolidation in light of the policies articulated under the Patient Protection and Affordable Care Act (ACA),¹⁹ arguing that the ACA and antitrust enforcement are at cross purposes.²⁰ I do not believe that is the case, because the FTC's work and the ACA share the common goals of promoting high quality and cost-effective health care. This is not the first time I and my fellow Commissioners have tried to set aside concerns about the alleged conflict between our antitrust enforcement work and the ACA,²¹ and I'm sure it won't be the last.

So let me turn to the relationship between the ACA and antitrust law, and how this issue was addressed in one of our other recent health care enforcement cases.

¹⁹ Patient Protection and Affordable Care Act, Pub. L. No. 11-48, 124 Stat. 119 (2010) [hereinafter Affordable Care Act].

²⁰ See, e.g., Connecticut State Medical Society, Testimony in Support of House Bill 6431 An Act Concerning Cooperative Health Care Arrangements, March 5, 2013, *available at* <https://www.csms.org/upload/files/2013%20Testimony/HB%206431%20AAC%20Cooperative%20Health%20Care%20Arrangements.pdf>; Joe Carlson, Pulled In Two Directions, Providers Pursuing Coordinated Care Confused by Antitrust Actions, *Modern Healthcare*, December 15, 2012, *available at* <http://www.modernhealthcare.com/article/20121215/MAGAZINE/312159986>; David Balto, Making Health Reform Work, Accountable Care Organizations and Competition, February 2011, Center for American Progress, *available at* <http://www.dcantitrustlaw.com/assets/content/documents/CAP/Making%20Health%20Reform%20Work.pdf>.

²¹ Remarks of Commissioner Julie Brill at 2013 National Summit on Provider Market Power, Promoting Healthy Competition in Health Care Markets: Antitrust, the ACA, and ACOs (Jun. 11, 2013), *available at* <http://www.ftc.gov/public-statements/2013/06/promoting-healthy-competition-health-care-markets-antitrust-aca-and-acos>; Remarks of Chairwoman Edith Ramirez at 11th Annual Loyola Antitrust Colloquium, Antitrust, Accountable Care Organizations, and the Promise of Healthcare Reform (Apr. 29, 2011), *available at* http://www.ftc.gov/sites/default/files/documents/public_statements/antitrust-accountable-care-organizations-and-promise-health-care-reform/110429loyolaspeech.pdf; Remarks of Commissioner Maureen K. Ohlhausen, before the Connecticut Bar Association, Health Care, Technology, and Health Care Technology: Promoting Competition and Protecting Innovation (Feb. 26, 2014), *available at* http://www.ftc.gov/system/files/documents/public_statements/203081/140226healthcaretechnology_0.pdf.

The Affordable Care Act and Competition Enforcement

Health care in the U.S. is provided by entities operating in markets, and the ACA does nothing to change that. Free market competition is built into the U.S. health care system's DNA today, just as it was 50 years ago.

Most hospitals and doctors are private actors, and roughly 50 percent of health care spending is paid for through commercial insurance. While the other roughly 50 percent of health care spending is publicly financed through Medicare and Medicaid, much of the health care received by beneficiaries of those programs is provided by private hospitals and physicians that operate in markets.²²

The ACA is structured to operate within those underlying competitive markets. With respect to health care financing, the ACA provides for the creation of state-based health insurance marketplaces.²³ The "exchanges" offer individuals and small employers a range of competing health insurance products that might otherwise be unavailable or unaffordable. This expansion of access enables consumers to be more responsive to the cost and quality of provider networks. The exchanges also encourage greater competition in local insurance markets, driving premiums down for consumers.²⁴

With respect to health care delivery, the ACA's Medicare Shared Savings Program encourages groups of providers to form Accountable Care Organizations (ACOs) to work

²² Martin Gaynor, Competition Policy In Health Care Markets: Navigating The Enforcement And Policy Maze, HEALTH AFFAIRS, May 2014, available at <http://content.healthaffairs.org/content/early/2014/05/13/hlthaff.2014.0333.full>.

²³ Affordable Care Act, *supra* note 19, Section 1322.

²⁴ See Leemore Dafny, Mark Duggan & Subramaniam Ramanarayanan, *Paying a Premium on Your Premium? Consolidation in the U.S. Health Insurance Industry*, 102(2) AM. ECON. REV., 1161-85, available at <http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.102.2.1161>.

together to coordinate care for Medicare fee-for-service beneficiaries.²⁵ An ACO participating in the Medicare Shared Savings Plan may share in savings they create if the ACO meets certain criteria set out by the Secretary of HHS, including quality performance standards.

Thus, both the ACA's health care financing provisions and the its Medicare Shared Savings Program depend in large part on well-functioning competitive markets in order to provide the intended benefits to consumers. The ACA does not replace the market-based nature of the industry. While it is true that Medicare and Medicaid rates may be set by one payer, the underlying health care providers are still competing in their own health care markets on important non-price factors, such as quality and access. Many of those same providers compete in the private-payer commercial market as well. The ACA aids in this process by incentivizing providers to be creative in health care delivery, providing higher quality, lower cost care, but importantly it doesn't mandate a particular structure.

Antitrust enforcement – including preventing firms from accumulating undue market power through mergers and acquisitions – is therefore just as crucial now as it was before the ACA in ensuring that our health care markets in the U.S. work well. There is a wealth of empirical evidence of the harmful effects of high concentration among health care providers.²⁶

²⁵ Affordable Care Act, *supra* note 19, at 395 (Section 3022). ACOs have also formed outside the context of the Medicare Shared Savings Program to bring similar care coordination efforts to commercially-insured patients. See David Muhlestein, *Continued Growth of Public and Private Accountable Care Organizations* (Feb. 19, 2013), available at <http://healthaffairs.org/blog/2013/02/19/continued-growth-of-public-and-private-accountable-care-organizations/> (noting that while there are more than 250 Medicare Shared Savings Program ACOs, there are a total of 428 ACOs in 49 states, including private sector, non-Medicare ACOs).

²⁶ See, e.g., Eduardo Porter, *One Reason Health Insurance Premiums Vary So Much*, N.Y. TIMES (May 15, 2014) (citing research by Leemore Dafny, Christopher Ody & Jonathan Gruber), available at <http://www.nytimes.com/2014/05/16/upshot/why-health-insurance-premiums-vary-so-much.html>; Eduardo Porter, *Health Care's Overlooked Cost Factor*, N.Y. TIMES, June 11, 2013, at B1.

Numerous studies have found that the existence of excess provider market power results in higher prices, lower quality, and less innovation.²⁷

Implementation of the ACA and other health care policy changes has coincided with a wave of mergers among hospitals, physicians, and other health care providers.²⁸ Some providers have pointed to the ACO program as a justification for potentially problematic mergers, complaining that the federal government is “speaking out of both sides of its mouth,” with the Medicare program encouraging providers to come together and create organizations that will enable greater collaboration, while the antitrust agencies challenge them.

These contentions are creative, but misguided. First, the ACA neither requires nor encourages providers to merge or otherwise consolidate, but rather encourages providers to create entities that *coordinate* the provision of patient care services. In fact, ACOs may be

²⁷ See, e.g., Martin Gaynor et al., *Death by Market Power: Reform, Competition and Patient Outcomes In the National Health Service*, Apr. 30, 2012, available at http://www.andrew.cmu.edu/user/mgaynor/Assets/Death_by_Market_Power.pdf; Clark C. Havighurst & Barak Richman, *The Provider-Monopoly Power Problem in Health Care*, 89 OREGON L. REV. 847 (2011); Robert Berenson, Paul Ginsburg, & Nicole Kemper, *Unchecked Provider Clout in California Foreshadows Challenges to Health Reform*, HEALTH AFFAIRS, Apr. 2010; WILLIAM B. VOGT & ROBERT TOWN, THE ROBERT WOOD JOHNSON FOUND., HOW HAS PROVIDER CONSOLIDATION AFFECTED THE PRICE AND QUALITY OF HOSPITAL CARE? (2006), available at http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2006/rwjf12056/subassets/rwjf12056_1. Prices for inpatient hospital services in particular have risen dramatically. A study published in the *American Journal of Managed Care* in March of last year found that from 2008 to 2010, inpatient hospital prices increased 8.2 percent per year, with wide variation in price levels. Jeff Lemieux & Teresa Mulligan, *Trends in Inpatient Hospital Prices, 2008-2010*, 19(3) AM. J. MANAG. CARE, e106 (2013). Data show that increasing provider consolidation is one contributor to rising hospital prices. See THE ROBERT WOOD JOHNSON FOUND., THE IMPACT OF HOSPITAL CONSOLIDATION—UPDATE (2012), available at http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2012/rwjf73261. See also James C. Robinson, *Hospital Market Concentration, Pricing, and Profitability in Orthopedic Surgery and Interventional Cardiology*, 17(6) AM. J. MANAG. CARE, e241 (2011), available at <https://www.blueshieldca.com/sites/make-care-affordable/documents/Hospital-market-concentration-pricing-profitability.pdf>.

²⁸ See, e.g., Provider Mergers and Consolidation Continue at a Ferocious Pace, AHIP Coverage, January 23, 2014, available at <http://www.ahipcoverage.com/2014/01/23/provider-mergers-and-consolidations-continue-at-a-ferocious-pace/>.

formed through contractual arrangements that are well short of a merger, such as a joint venture.²⁹

Second, neither the ACA statute nor the implementing regulations express a preference for consolidation *among competing entities*. The ACA final program rule stipulates that CMS will rely on the antitrust agencies to use “their existing enforcement processes for evaluating concerns raised about an ACO’s formation or conduct and [to file] antitrust complaints when appropriate.”³⁰ Importantly, CMS can exclude from the Shared Savings Program any ACO that violates the antitrust laws, and CMS has promised to “coordinate closely with the Antitrust Agencies throughout the application process and the operation of the Shared Savings Program to ensure that the implementation of the program does not have a detrimental impact upon competition.”³¹

Third, far from being a barrier to procompetitive collaboration envisioned in the ACA, antitrust aligns naturally with the goals of ACOs. By serving as a watchdog against firms accumulating undue market power and engaging in anticompetitive conduct, antitrust promotes market behavior that creates efficiencies and benefits consumers. Antitrust law permits providers to engage in a wide array of legitimate collaborative activities, including ACO arrangements, as well as many mergers and consolidations, so long as the conduct is not likely to

²⁹ As CMS stated in its final rules: “we do not believe that mergers and acquisitions by ACO providers and suppliers are the only way for an entity to become an ACO. The statute permits ACO participants that form an ACO to use a variety of collaborative organizational structures, including collaborations short of merger. . . . We reject the proposition that an entity under single control, that is an entity formed through a merger, would be more likely to achieve the three-part aim [of the Shared Savings Program].” Dep’t of Health & Human Servs., Centers for Medicare & Medicaid Servs., Medicare Program; Medicare Shared Savings Program: Accountable Care Organizations, 42 C.F.R. § 425 (2011), 76 Fed. Reg. 67,826 (Nov. 2, 2011)[hereinafter CMS Final Rule], at 67,843.

³⁰ *Id.* at 67,826. See also FED. TRADE COMM’N & U.S. DEP’T OF JUSTICE, STATEMENT OF ANTITRUST ENFORCEMENT POLICY REGARDING ACCOUNTABLE CARE ORGANIZATIONS PARTICIPATING IN THE MEDICARE SHARED SAVINGS PROGRAM, 76 Fed. Reg. 67026, 67030-31 (Oct. 28, 2011); Susan S. DeSanti, *ACO Antitrust Guidelines: Coordination Among Federal Agencies* 1 (Dec. 2011).

³¹ CMS Final Rule, *supra* note 29, at 67,842.

harm consumer welfare through higher cost or lowered quality.³² This is not a new concept for antitrust regulators – we embraced it as far back as 1996.³³ With regard to aggregation of market power – whether through mergers or otherwise – antitrust law uses a scalpel, not a sledgehammer, and carefully analyzes each case to bar only those that on balance threaten to harm consumers.³⁴

Now we have a new court decision squarely supporting the view that the ACA and competition law are not in conflict, but aligned. A federal district judge in Idaho upheld our challenge of the acquisition of the Saltzer physician group by the hospital St. Luke’s.³⁵ The parties argued that the merger was justified by the ACA, but the court believed the evidence showed otherwise.

³² For a more detailed discussion of the antitrust analysis of such arrangements, *see, e.g.*, Letter from Markus H. Meier, Assistant Director, Health Care Division, Bureau of Competition to Michael E. Joseph, Esq., McAfee & Taft (Feb. 13, 2013) (concerning Norman PHO), *available at* <http://www.ftc.gov/os/2013/02/130213normanphoadvltr.pdf>; Letter from Markus H. Meier, Assistant Director, Health Care Division, Bureau of Competition to Christi J. Braun, Esq., Ober, Kaler, Grimes & Shriver (Apr. 13, 2009) (concerning TriState Health Partners, Inc.), *available at* <http://www.ftc.gov/opa/2009/04/tristate.shtm>; Letter from Markus H. Meier, Assistant Director, Health Care Division, Bureau of Competition to John J. Miles, Esq., Ober, Kaler, Grimes & Shriver (June 18, 2007) (concerning Follow-Up to 2002 MedSouth, Inc. Staff Advisory Opinion), *available at* <http://www.ftc.gov/bc/adops/070618medsouth.pdf>; Letter from Markus H. Meier, Assistant Director, Bureau of Competition to Christi J. Braun, Esq., and John J. Miles, Esq., Ober, Kaler, Grimes & Shriver (Sept. 17, 2007) (concerning Greater Rochester Independent Practice Association, Inc.), *available at* <http://www.ftc.gov/opa/2007/09/clinicalintegration.shtm>; Letter from David R. Pender, Acting Assistant Director, Health Care Division, Bureau of Competition to Clifton E. Johnson, Esq., and William H. Thompson, Esq., Hall, Render, Killian, Heath & Lyman (Mar. 28, 2006) (concerning Suburban Health Organization), *available at* <http://www.ftc.gov/opa/2006/03/shor31.shtm>.

³³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, STATEMENTS OF ENFORCEMENT POLICY IN HEALTH CARE (1996), *available at* <http://www.ftc.gov/bc/healthcare/industryguide/policy/hlth3s.pdf>.

³⁴ *See* 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 14.

³⁵ Federal Trade Commission v. St. Luke’s Health System, LTD., Findings of Fact and Conclusions of Law, Case No. 1:13-CV-00116-BLW (D. Idaho Jan. 24, 2014). St. Luke’s has appealed the decision to the Ninth Circuit.

St. Luke's/Saltzer

The case began in March 2013, when we filed a joint complaint with the Idaho Attorney General challenging St. Luke's Health System's acquisition of Saltzer Medical Group.³⁶ The complaint alleged that the merger between Idaho's largest health care system and the state's largest independent, multi-specialty physician practice would be anticompetitive, creating a dominant single provider of adult primary care physicians in the Nampa, Idaho area, with nearly 80 percent of the market. Although the transaction in some respects was vertical – a large hospital system acquiring a physician group – it was also a horizontal merger, consolidating a large majority of physicians and physician groups in what was already the largest health care system in Idaho. Our complaint focused on the horizontal aspect of the case.

After a full trial, in January of this year, the federal district court held that the acquisition violated Section 7 of the Clayton Act and the Idaho Competition Act, and ordered St. Luke's to fully divest itself of Saltzer's physicians and assets.

St. Luke's argued that the acquisition was needed in order for it to lower costs and improve health care quality, citing the ACA.³⁷ The Commission carefully investigated each of St. Luke's claims, keeping in mind the goals of the ACA as well as the importance of competition to its proper function, and found that St. Luke's – with its 500-plus employed physicians and integrated health care system – already had the ability to achieve significant cost

³⁶ Complaint for Permanent Injunction, *Federal Trade Commission v. St. Luke's Health System, LTD.*, Case No. 1:13-CV-00116-BLW (D. Idaho Mar. 26, 2013).

³⁷ FTC trial counsel referred to St. Luke's argument as the "health care reform" defense, or the "give the monopoly a chance" defense, quoting from defense counsel's brief: "Indeed, the procompetitiveness of the Saltzer transaction is underscored by the fact that it accords with, and carries out, the federal policy, reflected in the [ACA], of encouraging large, clinically-integrated physician-hospital networks designed to reduce the overall cost of health care through the precise methods that will be implemented as a consequence of this transaction." Presentation, *Federal Trade Commission, Opening Statement: Federal Trade Commission & State of Idaho v. St. Luke's Health System, Ltd. & Saltzer Medical Group, P.A.* 73 (Sept. 23, 2013), <http://www.ftc.gov/system/files/documents/cases/130923stlukeslides.pdf>.

savings and quality improvements without acquiring Saltzer. The district court agreed. St. Luke's was not able to prove that further consolidation would allow it to achieve significant additional cost savings and quality improvements – the evidence just wasn't there.

While the district court applauded St. Luke's for its efforts to improve the delivery of health care and credited St. Luke's with at least intending that the acquisition would improve patient outcomes, the court found that St. Luke's had other ways to achieve the same goals that would not run afoul of the antitrust laws.³⁸ Importantly, the court found that physicians are committed to improving the quality of healthcare and lowering costs regardless of whether they are employed or independent, and that the committed team – not any specific organizational structure – is the key to integrated medicine.³⁹

St. Luke's documents did not help it on this point – one internal St. Luke's document, authored by a St. Luke's board member, stated that “Employing physicians is not achieving better cost, it's achieving better profit.”⁴⁰ Moreover, St. Luke's Vice President of Payer Relations, who previously worked for Advocate Health, a Chicago-based health care physician group well known for its high-quality care, testified that Advocate Health provided independent

³⁸ *St. Luke's Health System, LTD.*, 1:13-CV-00116-BLW, at 3. The court found that St. Luke's efficiency claims were not merger specific, citing the 2010 HORIZONTAL MERGER GUIDELINES, *supra* note 14, and *F.T.C. v. H.J. Heinz Co.*, 246 F.3d 708, 722 (D.C. Cir. 2001). *Id.* at 38, 46. St. Luke's argued that broadening the use of its health information technology would improve quality and create efficiencies. But the evidence wasn't there. St. Luke's was in the process of developing an “Affiliate” electronic medical records program to its own “Epic” program that would allow independent physicians to access Epic, thus the court held that the merger was not necessary in order for St. Luke's to achieve efficiencies associated with sharing medical records. *Id.* at 37-38. Moreover, the evidence showed that St. Luke's was years away from having Epic installed at all of its facilities. The Commission also presented evidence that Idaho has a Health Data Exchange that facilitates interaction between medical records across the entire state. Presentation, *supra* note 37, at 69.

³⁹ *St. Luke's Health System, LTD.*, 1:13-CV-00116-BLW, at 32.

⁴⁰ Presentation, *supra* note 37, at 62.

physicians significant financial benefits if they met specific quality metrics; it was not necessary for Advocate Health to employ physicians to improve health care quality.⁴¹

The economic evidence also belied St. Luke's arguments. St. Luke's argued that its past acquisitions led to lower cost healthcare. The FTC's economic expert, Professor David Dranove, evaluated this claim, and found no supporting evidence. Professor Dranove compared costs to patients of St. Luke's acquired primary care physicians with those of primary care physicians who were not acquired by St. Luke's, and found either no significant spending changes, or an actual increase in total spending.⁴² Professor Dranove found that, if anything, the evidence suggested that the acquisition of Saltzer was more likely to result in cost increases.⁴³

The Commission's case was bolstered by the fact that there was evidence showing that St. Luke's had already successfully used its market power to increase reimbursements a few years earlier, through enhanced negotiating leverage after acquiring physician groups in a different region in Idaho. In Magic Valley, St. Luke's amassed a large percentage of the area's primary care physicians and was able to successfully exercise market power.⁴⁴

In sum, the *St. Luke's/Saltzer* decision demonstrates that the ACA is not a free pass. Although the ACA encourages integration of health care delivery, there are many mechanisms for achieving this goal. While the FTC doesn't challenge the vast majority of health care provider acquisitions,⁴⁵ we will step in to challenge acquisitions that give a firm market power

⁴¹ *Id.* at 67.

⁴² *Id.* at 63.

⁴³ *Id.*

⁴⁴ *St. Luke's Health System, LTD.*, 1:13-CV-00116-BLW, at 18.

⁴⁵ For example, from 2002 to 2012, the FTC challenged just six hospital mergers out of 970 total hospital merger and acquisition deals, less than one percent of the total transactions. *See* "Hospital Merger and Acquisition Trends,

that creates a serious risk of competitive harm to consumers. The ACA and antitrust enforcement are aligned in the need to achieve this goal.

Thank you.

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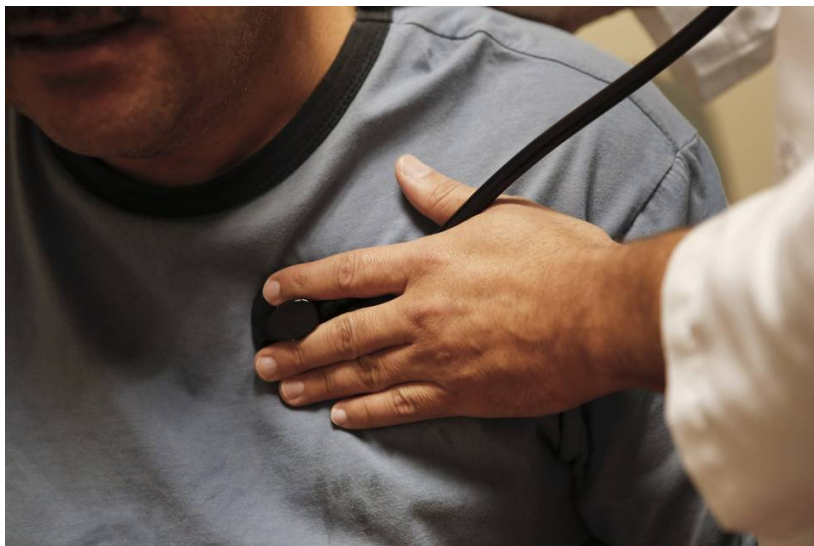
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Outpatient Medical Care Prices Are Rising, Study Shows

Increase reflects hospitals acquiring more doctor practices



A doctor checks the vitals of a patient in Los Angeles, Calif. in 2013. As hospitals have acquired more doctor practices, prices for outpatient medical services have gone up, according to a new study. *PHOTO: PATRICK T. FALLON/BLOOMBERG NEWS*

By **ANNA WILDE MATHEWS**

Updated Oct. 19, 2015 11:27 a.m. ET

As hospitals have acquired more doctor practices, prices for outpatient medical services have gone up, according to a new study that will fuel debate over the impact of the merger boom sweeping through health care.

The new study, in the journal *JAMA Internal Medicine*, looked at what happened to the cost and volume of health-care services as physicians became more integrated into hospitals, by working for them or selling their practices to hospital systems. Overall, outlays for inpatient stays didn't change significantly, but spending on outpatient care increased.

The uptick in outpatient costs wasn't due to physicians ordering or performing more services, the researchers found, because increases in utilization of outpatient care were "minimal." Instead, it "was driven almost entirely by price increases," they wrote.

The study focused on the effects among commercially insured people; insurers generally pay health-care providers contracted rates that are decided through negotiations, unlike government programs such as Medicare, which pays set rates. Large integrated health systems may be able to win better rates because of their size and the likelihood that they include hospitals that would be seen as vital by many consumers and employers that pay for insurance plans—meaning that insurers need to include them in networks, even if the price is high. Individual doctor practices are more at risk of being left out of a network if they don't take the insurer's price.

The increase in outpatient spending likely reflects the stronger negotiating clout held by hospitals, compared with most physician groups, said J. Michael McWilliams, an associate professor at Harvard Medical School and an author of the paper. "The market power that is in the hospital's hands is conferred to the physician practice," he said, boosting the rates it can receive.

The study, which focused on a period from 2008 to 2012 and looked at 240 cities, relied on Medicare data and a separate database that reflected claims for commercially insured patients.

The researchers found only limited integration, based on what they said was a conservative definition. At the end of the four-year span, 21.3% of the physicians in the communities studied, on average, worked for a hospital-owned practice, up from 18%.

In a community where physician-hospital integration increased by about five

percentage points over the four-year span, the researchers found that overall outpatient spending would be about \$75 higher a year, per insured consumer—about 3.1% more. However, that figure was an average across all commercially insured people; for a particular individual whose doctor practice was acquired by a hospital, the increase would be far sharper, estimated at around \$1,400, Dr. McWilliams said.

“The study had very important results,” said Paul Ginsburg, a professor at the University of Southern California, who said “we should be very concerned” about the finding as doctors increasingly go to work for hospitals. In addition to hospitals acquiring physician groups, they are merging among themselves to form ever-larger systems. At the same time, insurers are engaged in their own deal frenzy, with pending combinations that would shrink the industry’s top five to three.

Gerard Anderson, a professor at Johns Hopkins University, said the limited size of the increase in outpatient spending in the new study raised questions about whether hospitals were actually recovering the cost of acquiring physician practices. Similar efforts to employ physicians in the 1990s often backfired, he said: “It was a bad financial investment before and it seems like we’re doing it again.”

In a statement, the American Hospital Association said the study “is not reflective of the changes happening in today’s health-care market,” because it doesn’t show the impact of growing use of new forms of payment that “have led to quality improvement and slower cost growth.” Hospital price growth recently has been at a historic low, the association said.

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Physicians Practices Reimbursement Report

Amy Cooper, Executive Director
Healthfirst

Vermont's Independent Practice Association

01/06/2015

Professional Fees are the Only Payment Source for Independent Physicians

<u>Payment Source</u>	<u>Independent Physicians</u>	<u>Hospitals</u>	<u>Academic Hospitals</u>
Professional Fees			
Commercial Payers	✓	✓	✓
Medicare	✓	✓	✓
Medicaid	✓	✓	✓
Facility Fees			
Commercial Payers		✓	✓
Medicare		✓	✓
Medicaid		✓	✓
Medical Education Payments			
Medicare DIRECT Grad Med Education payments			✓
Medicare INDIRECT GME augmentation			✓
Medicaid Fixed Annual Payment to UVMHC			✓
Medical School Tuition from Students			✓
Medical School Endowment + Donations			✓

- Independent physicians are a critical component of a high-quality, lower cost health care system
- Hospitals are paid additional facility fees for outpatient office visits at practices they own
- 95% of independent physicians in VT see patients with all insurance and the uninsured, often with sliding fee schedules and no ability to “cost-shift”
- Independent physicians also teach medical students voluntarily

THE SUBJECT OF THIS REPORT/DISCUSSION IS PROFESSIONAL FEES ONLY

2014 Data Shows Much Sharper Payment Variation for Primary Care Codes than in 2012

2012 Data from Dec 1 Phys. Practice Report

CPT Code	Ind. Physician	Academic Hospital	VAR %
99213	\$80.68	\$98.71	122%
99214	\$120.03	\$148.77	124%
90471	\$26.82	\$38.41	143%
99396	\$142.77	\$180.44	126%
36415	\$7.37	\$10.28	139%
90460	\$34.60	\$33.50	97%
90658	\$19.74	\$27.09	137%
90472	\$20.04	\$29.89	149%
99395	\$129.59	\$163.17	126%
87880	\$23.52	\$49.70	211%

2014 Data from Blue Cross

Ind. Physician	Academic Hospital	VAR %
\$78.00	\$177.00	227%
\$117.00	\$261.00	223%
\$25.00	\$43.00	172%
\$149.00	\$307.00	206%
\$9.00	N/A	N/A
N/A	N/A	N/A
\$16.00	N/A	N/A
\$15.00	\$46.00	307%
\$135.00	\$287.00	213%
\$25.00	\$49.00	196%

Comparing Professional Fees ONLY for these codes

Average Variation 138%

220%

Payment Variations in Specialty Codes are Even More Severe

2014 Data Sample of Specialty Procedural Codes
(Not addressed in Dec 1 report)

Comparing Professional Fees ONLY for these codes

CPT Code	Specialty	Ind. Physician	Academic Hospital	VAR %
45378	Gastroenterology - Dx Colonoscopy	\$584	\$1,356	232%
45385	Gastroenterology - Colonoscopy with removal of tumor, polyp, or lesions	\$765	\$1,819	238%
20610	Pain Med - Drain and/or injection of major joint or bursa	\$116	\$235	203%
92012	Ophthalmology - Eye Exam Est Patient	\$84	\$278	331%
11000	Dermatology - Skin Biopsy Single Lesion	\$109	\$349	320%
17000	Dermatology – Destruction Of Premalignant Lesion	\$83	\$273	329%

Average Variation **275%**

Pay Parity for Independent Physicians Would...

- Help reduce overall spending by supporting and maintaining this lower-cost care delivery model
- Maintain choice for patients to visit independent practices by keeping them in business
- Keep physicians practicing in Vermont
- Achieve GMCB/the Administration/Act 48's stated goals of fairness and transparency
- Not be overwhelming to achieve, considering there are a comparatively small number of independent physicians and parity would only apply to professional fees

Patients in universal coverage, low-cost systems with equal physician pay access most of their care through independent physicians

- France
 - Health Care Expenditures 11.6% of GDP
 - 70% of primary care and 50% of specialists are self-employed
- Germany
 - Health Care Expenditures 11.3% of GDP
 - Almost all outpatient doctors work in private practice
 - 50% of doctors in primary care, 75% of patients access same day or next day appointments
- Canada
 - Health Care Expenditures 11.2% of GDP
 - Majority of family physicians are self-employed
- Vermont
 - Health Care Expenditures 20% of GDP
 - Majority of physicians employed in higher-cost hospital settings
 - Patients losing access to personalized, convenient, affordable care offered by independent practices

Sources: Healthcare Triage: Aaron Carroll - Canada : <https://www.youtube.com/watch?v=1TPr3h-UDA0>; France: <https://www.youtube.com/watch?v=yF69KVbUaQ>; Germany: <https://www.youtube.com/watch?v=NdarqEbDeV0>

Summary

- **Independently owned physician practices are central to lower-cost universal coverage delivery systems**, as data from other countries shows
- **The important role of independently owned practices in offering efficient care at lower overall cost, and maintaining diverse choices for patients** ought to be prominently considered as Vermont contemplates health care reform
- **The issue is more critical to Vermonters than the report suggests.** The Administration's Dec 1 Physician Practices Report starts to demonstrate the pay variation problem, but only reported primary care, and used older data
- **This situation is acute and precarious for VT small physician practices** because of major shifts in VT health care delivery that occurred in the past 2 years, after the Report's data

Appendix

2014 Data Comes From BCBS Website

BlueCross BlueShield of Vermont
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Message Center: 5 New
Welcome **AMY COOPER**

Tools, Resources, Media, and News:
Here you will find tools and resources to help assist you with:

- Policy related questions
- Links to helpful resources
- Transaction Tools to help you manage your policy

Other important notifications and newsletters will also be found here.

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Update your address or phone number, order an ID Card, or Print a Proof of Coverage letter.

Price and Quality Tools
Use these tools to research price and quality information associated with your health care coverage.

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Control what information is visible.

Member Center
Visited Nov/Dec 2014

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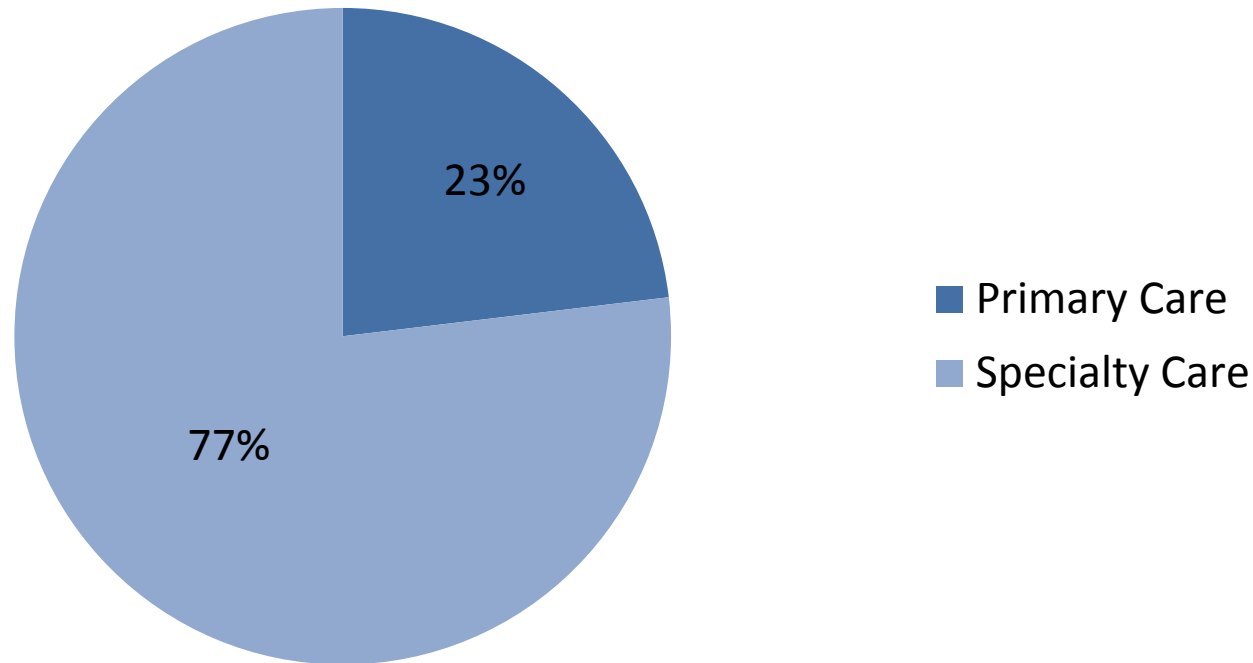
Detailed Price Report by Code

John Doe, MD

		VHP
Category/Code	Description	Provider's Median Price*
Professional Services		
99213	OFFICE/OUTPATIENT VISIT ESTABLISHED PATIENT - 15 MINUTES	\$177.00
99214	OFFICE/OUTPATIENT VISIT ESTABLISHED PATIENT - 25 MINUTES	\$261.00
99243	OFFICE CONSULTATION - 40 MINUTES	\$301.00
99396	PREVENTIVE VISIT - AGE 40 THROUGH 64 YEARS	\$307.00

Primary Care is a Small Portion of Total Spending Compared to Specialty Care

**Total Expenditures on Professional Fees
2013 Medicare Data***



Source: * 2013 CMS Medicare Claims Data for ACCGM, Healthfirst's Medicare ACO



The Official Website of the Attorney General of Massachusetts

Attorney General Maura Healey

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MARTHA COAKLEY
ATTORNEY GENERAL

For Immediate Release - June 24, 2014




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AG Final Resolution with Partners Would Alter Provider's Negotiating Power, Restrict Growth and Health Costs

BOSTON –In a resolution that will fundamentally alter the provider's negotiating power for 10 years and control health costs across its entire network, Attorney General Martha Coakley today reached a final agreement with Partners HealthCare resolving her office's antitrust investigation into the organization.

Filed in Suffolk Superior Court today, the consent judgment is expected to be considered by a judge at a hearing at a later date. If approved by the court, the consent judgment will resolve an antitrust investigation by the Attorney General's Office into Partners and its acquisition of South Shore Hospital.

- [Consent Judgment](#)  17MB
- [Memorandum of the Commonwealth of Massachusetts in Support of the Entry of Final Judgment](#)  3MB
- [Commonwealth v. Partners HealthCare System](#)  3MB

"Our office was the first to shine a light on the ability of Partners to charge higher prices based on its negotiating power," AG Coakley said. "Today's resolution is the first action of its kind to directly address that market dysfunction. While a lawsuit could have blocked Partners' expansion to South Shore Hospital, it also would have maintained the unacceptable status quo in the health care market. Today's resolution goes well beyond that by reducing the negotiating power of Partners, limiting its ability to acquire physicians, and controlling costs across its entire network."

The Consent Judgment is the result of extensive investigations into Partners' market conduct and proposed acquisitions. The Office of the Attorney General issued its first Civil Investigative Demands regarding Partners' conduct and affiliation practices in 2009. Following Partners' announcement of its proposed acquisitions of South Shore in 2012, and of Hallmark in 2013, the Attorney General issued additional Civil Investigative Demands to evaluate the likely competitive impact of those proposed acquisitions. In February, the Health Policy Commission (HPC) released a report concluding that Partners' acquisition of South Shore would result in increased costs and referred the report to the AG's Office for further investigation.

As part of these investigations, attorneys and staff of the Attorney General's office and their experts have reviewed hundreds of thousands of documents, compiled and reviewed economic projections, interviewed witnesses, and conducted depositions of relevant market participants. The Attorney General also coordinated her investigation with that of the Antitrust Division of the Department of Justice. Staff and experts of each office often worked together to examine the potential competitive effects of the various transactions and practices at issue.

The conditions set forth in the agreement include: allowing payers to split Partners into separate contracting entities for up to 10 years; preventing Partners from contracting with affiliate physician groups that are not part of its owned hospitals for 10 years; capping health costs at the rate of inflation across the entire Partners network through 2020; capping its physician growth for five years; and blocking further hospital expansion in eastern Massachusetts, including Worcester County, for the next seven years.

A monitor, selected by the AG's Office and paid for by Partners, will ensure that every part of the agreement is fulfilled over the duration of the consent judgment. If Partners violates the terms of the consent judgment, the organization could be held in contempt of court and face penalties.

The HPC has not yet completed its review of the proposed Hallmark transaction. The Consent Judgment includes a provision requiring that Partners and the Attorney General confer to seek to mitigate any material price impacts predicted by the HPC in its final review as a result of the proposed acquisition.

Following this investigation, the terms included in the consent judgment today include:

Component Contracting – 7 to 10 years

Payers will be allowed to contract with Partners Network providers on a component basis, reducing Partners' bargaining power in the market. Those components will include: academic medical centers, community hospitals and physicians, South Shore Hospital, and Hallmark Health Systems. The academic medical centers and community hospitals will remain separate components for 10 years. South Shore and Hallmark will remain separate components for seven years and then become part of the community hospital group.

Restriction on physician affiliate contracting – 10 years

Partners will cease joint contracting on behalf of non-owned physician group affiliates outside its own physician hospital organizations. This has traditionally been a way that Partners has expanded its market reach as compared to other providers. This restriction would also not apply to physicians employed within the Partners network.

Comprehensive Partners network price growth restriction – 6.5 years

Partners cannot raise its costs across its network more than the rate of general inflation, which over the last several years has averaged between one and two percent and has stayed below the medical market’s average. The inflation rate is also well below the rates traditionally negotiated by Partners over the past decade and the current Health Policy Commission benchmark of 3.6 percent. This price restriction covers all of Partners services, including hospitals, out-patient facilities, physicians, health care professionals, and all other related Partners billed services. In any year that Partners does not comply with this cost freeze, it will refund to payers the amounts charged or received.

South Shore Hospital price growth cap – 6.5 years

Independently, South Shore Hospital’s prices will also be limited to the rate of general inflation. This separate price restriction will help directly address the cost concerns raised by the referral from the Health Policy Commission’s “Market Impact Review.”

Physician growth restriction – 5 years

The number of Partners network community physicians will not exceed the Partners 2012 baseline physician level for three years. The acquisition of South Shore Hospital means that Partners will be within 200 physicians of the 2012 levels. Partners then cannot grow its community physicians by more than two percent for years four and five. All community physicians as well as AMC physicians practicing in the community will be counted toward this community physician cap.

Hospital growth restriction – 7 years

Partners is prevented from acquiring hospitals in eastern Massachusetts – defined as Worcester County and areas further east – absent review and approval by the Attorney General’s Office. Emerson Hospital, a current Partners affiliate, is not subject to this discretionary review. However, any proposed purchase of Emerson by Partners would be subject to HPC review and antitrust review as all other hospital acquisitions.

Independent monitoring – 10 years

An independent monitor will be chosen by the Attorney General’s Office and paid for by Partners to ensure that Partners adheres to the terms of the agreement. If Partners violates the terms of the consent judgment, the organization could be held in contempt of court and face penalties.

Chief of the AG’s Antitrust Division Will Matlack, Assistant Attorneys General Matthew Lyons, Michael Franck, Michael MacKenzie, Paralegal/Economic Analysis Daniel Van Lunen, Assistant Attorney General and Chief of the AG’s Public Protection and Advocacy Bureau Mary Freeley, and Deputy Attorney General Chris Barry-Smith worked on this case.

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Office of the WV Attorney General

Patrick Morrisey **Consumer Protection Hotline 1-800-368-8808**

(<http://www.ago.wv.gov/>)

(<http://www.ago.wv.gov/Pages/consumercomplaint.aspx>)

Attorney General (/Pages/default.aspx) > Press Room (/pressroom/Pages/default.aspx) > 2015 Press Releases

AG Patrick Morrisey Announces Antitrust Agreement in Cabell Huntington Hospital, St. Mary's Medical Center Acquisition

7/31/2015

CHARLESTON, W.Va. – Attorney General Patrick Morrisey today announced his Office's Antitrust Division has reached an agreement with Cabell Huntington Hospital, Inc., in its acquisition of St. Mary's Medical Center.

The agreement, filed Friday morning in Cabell County Circuit Court, establishes a series of conditions to ensure the acquisition complies with the West Virginia Antitrust Act, the federal Sherman Antitrust Act, and all other applicable state and federal laws.

"My Office takes its antitrust responsibility very seriously," Attorney General Morrisey said. "We strive to make sure any mergers or acquisitions preserve economic competition and do not have a negative effect on the state and its citizens."

In November, Cabell Huntington Hospital announced an agreement to acquire St. Mary's after the Pallottine Missionary Sisters, the Catholic-affiliated organization that had operated the hospital for 90 years, decided to end their sponsorship of the medical center.

"This acquisition represents the combination of two large and vitally important health care centers in the greater Huntington area," Attorney General Morrisey said. "St. Mary's Medical Center and Cabell Huntington Hospital represent the seventh and eleventh largest private employers in the state, respectively, and the top two employers in Cabell County. Serving residents of three states, the combined hospital company would represent the second-largest hospital chain in the state."

Under the agreement, Cabell Huntington and St. Mary's do not admit to any violations of state or federal antitrust laws. The hospitals voluntarily cooperated with the Attorney General's Office in a good faith effort in the interest of promoting appropriate standards of conduct within the health care industry.



The Daily Briefing

News for Health Care Executives

Obama signs budget deal that cuts hospital payments. Here's what you need to know.

Congress passed the legislation last week

November 03, 2015

[See the Advisory Board's take on this story.](#)

President Obama on Monday signed into law a two-year budget deal that will curb payments to new hospital-owned physician practices and extend other reimbursement cuts.

The [House](#) and the [Senate](#) last week both passed the measure, which will also suspend the country's \$18.1 trillion debt limit through March 2017 and increase spending caps for domestic agencies by \$50 billion in fiscal year (FY) 2016 and \$30 billion during FY 2017.

Changes to payments for hospital-owned physician practices

Under the deal, beginning in 2017 Medicare will no longer pay certain hospital-owned physician practices higher rates than independently owned practices. The reimbursement changes will apply to hospital-owned physician practices acquired or opened since Monday—the date the law was signed—that are located farther than 250 yards from a hospital's main campus.

Site-neutral payments: The billion-dollar Medicare revenue hit you should plan for now

Such facilities instead will "be eligible for reimbursements from either the Ambulatory Surgical Center ... or the Medicare Physician Fee Schedule," according to a summary of the legislation. Facilities that received hospital outpatient department (HOPD) reimbursement as of the date the law was signed will be grandfathered in under the policy.

The **American Hospital Association (AHA)** and the **Federation of American Hospitals** have both spoken out against severely limiting hospitals' ability to receive HOPD reimbursement for services furnished at off-campus facilities.

AHA EVP Thomas Nickels said in a [statement](#), "This untested idea may endanger patient access to care, especially among patients who are sicker, the poor, minorities, and seniors who often receive care in hospital outpatient departments."

Other health care provisions

The budget agreement will lessen, but not eliminate, a premium increase for about 15 million Medicare beneficiaries. Under the measure, monthly Medicare Part B premiums will increase to about \$120, rather than to \$159, for roughly 30% of beneficiaries. Meanwhile, annual deductibles for all Medicare beneficiaries will increase to about \$167, rather than to \$223.

Further, the measure will extend a two-percentage-point reduction in Medicare payments to physicians and hospitals through the end of a 10-year budget, which will fund an estimated \$25.8 billion of the deal.

Related

[Hospitals fight extension to Medicare sequester cuts](#)

The budget agreement also will:

- Eliminate an Affordable Care Act mandate that requires large companies to automatically enroll employees in health plans unless the workers opt out of the coverage; and
- Require generic drugmakers to give greater discounts to Medicaid if prices of the drugs rise more quickly than inflation (Fabian, [The Hill](#), 11/2; Krawzak, [Roll Call](#), 11/2).

The Advisory Board's take



[Piper Su](#), VP of Health Policy, The Advisory Board

The budget agreement is notable both from a political and policy perspective. It is a rare occasion these days to have Congress move a bipartisan fiscal package with relatively little delay, and the timeline of the law will ensure that the next time Congress will need to revisit these budget issues will be in the spring of 2017 after the presidential election.

The agreement also includes notable health care policies, including a provision that will severely limit hospitals' ability to receive HOPD reimbursement for services furnished at off-campus facilities. Also, the 2% Medicare payment reduction that was originally required as part of the sequestration law in 2011 will be extended for an additional year to provide much-needed revenue in the agreement.

These policy changes continue a trend of using health care program savings for more broad

government funding needs—a trend that some lawmakers note as setting a dangerous precedent.

It will be important to watch how the new policies are implemented by HHS to fully understand their effect, so keep an eye out for additional program guidance on the changes in the coming months.



The New York Times | <http://nyti.ms/1GwXB8M>

Edited by David Leonhardt

The Up hot
PUBLIC HEALTH

Prices Are Higher When Hospitals Buy Doctors' Practices. That's Set to Change.

Margot Sanger-Katz @sangerkatz OCT. 28, 2015

In the last few years, there has been something of an acquisition boom in doctors' practices, as hospitals have been snapping them up.

Congress may have just cut a deal to slow down all that deal making. As part of the big budget agreement between the White House and congressional leaders, lawmakers want to take away a big incentive driving those mergers: the higher prices that doctors' offices could charge Medicare when they were owned by a hospital.

The way it works now, an orthopedist who sets a bone in a private practice office is paid less than that same orthopedist in that same office if it is owned by a hospital. That difference can lead to bigger costs for the federal government — and for seniors, who have to pay a portion of the cost of their medical visits.

Hospitals argue that their higher payments rightly reflect their higher costs of providing care: They are bound by more requirements, tend to see

sicker patients and have to subsidize costly services, like emergency rooms, that independent doctors do not. Nevertheless, the price differences have been criticized by the Medicare Payment Advisory Commission (MedPAC), which suggests improvements to Congress, and by the Obama administration, which has sought to equalize the prices in its budget.

The critics say that paying higher prices just because of who owns a practice drives up health care costs and distorts business incentives. Studies show that the mergers can also drive up costs for privately insured patients.

I wrote about this difference — and the push to eliminate it — earlier this year.

The current budget deal, if it passes, would let any current hospital-owned practice continue to pocket the higher prices, but it would prevent future practices from being able to get higher payments just by merging with a hospital. In order to get hospital-size payments in the future, doctors' offices will need to be located "on campus."

"This is a big deal," said Robert Berenson, a fellow at the Urban Institute and a former vice chairman of MedPAC. "Through the back door, they made a change they couldn't do through the front door, it seems to me."

The legislation, as written, might create some distortions of its own. By setting payment based on the location of doctors' offices and not the services they are providing, the new rule might discourage hospitals from expanding services into underserved neighborhoods. The MedPAC suggestion was that the prices should be the same for certain services in all settings, not that the difference should depend on the location of the practice.

The change in policy probably won't completely erase the recent trend because the ability to charge higher prices isn't the only reason hospitals and doctors are merging. Other parts of Medicare are increasingly pushing doctors and hospitals to work together closely to manage the health of patients, a goal

some people think is easier to achieve when everyone works in the same organization. Congress has also been increasing pressure on doctors to measure and report the quality of the care they deliver, something that small, independent practices are finding hard to do without assistance. Still, Congress may be eliminating one big financial incentive for these mergers.

The Upshot provides news, analysis and graphics about politics, policy and everyday life. Follow us on Facebook and Twitter. Sign up for our newsletter.

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