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Accountable Care Organizations in California: Market Forces at Work?

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Abstract Accountable Care Organizations (ACOs), one of the most recent and promising health care delivery innovations, encourage care coordination among providers. While ACOs hold promise for decreasing costs by reducing unnecessary procedures, improving resource use as a result of economies of scale and scope, ACOs also raise concerns about provider market power. This study examines the market-level competition factors that are associated with ACO participation and the number of ACOs. Using data from California, we find that higher levels of preexisting managed care leads to higher ACO entry and enrollment growth, while hospital concentration leads to fewer ACOs and lower enrollment. We find interesting results for physician market power—markets with concentrated physician markets have a smaller share of individuals in commercial ACOs but a larger number of commercial ACO organizations. This finding implies smaller ACOs in these markets.

Keywords accountable care organizations, Affordable Care Act, market concentration

Introduction

A key component of the Patient Protection and Affordable Care Act (ACA) is the promotion of accountable care organizations (ACOs). Proponents of ACOs argue that care coordination in ACOs will increase the quality of care while decreasing costs due to a reduction in low-value, unnecessary, duplicative, or preventable procedures. Under an ACO, physicians and hospitals can coordinate care to increase the efficacy and efficiency of care for their shared patients. This may be especially true for patients with chronic conditions because care coordination can reduce the number of

procedures. Early results are mixed (Patel and Lieberman 2013). But in one setting, ACOs reduced Medicare spending among cancer patients, primarily through reducing hospital visits and hospice use, with no adverse effect on quality (Colla et al. 2013).

To reward ACOs for reducing costs, ACOs are awarded a "shared savings" payment, which is based on the difference in costs between the ACO's enrollees and a benchmark based on the provider's non-ACO patients. Unlike traditional fee-for-service practices, the shared savings payment rewards ACOs for reducing the quantity of care delivered. Thus the ACO has an incentive to restrict unnecessary or low-value care and to coordinate care between providers to ensure that appropriate care is delivered (Emanuel 2012).

However, the coordination of care inherent to ACOs may also serve as a form of or a facilitator of collusion. Concerns about the collusion effects of care coordination hinder care coordination across providers and organizations. Probably more importantly, federal and state "antikickback" laws, including the Stark Law, prevent payments for referrals and prohibit hospitals from rewarding physicians for reducing utilization, even if the services are actually inappropriate. These laws prevent many forms of coordination by contract (Leibenluft 2011; Cuellar and Gertler 2006). The promotion of ACOs by the ACA largely removes these obstacles.

As a result, economists and antitrust enforcers worry that ACOs have the potential to adversely affect competition in health care markets (Bacher et al. 2013). The horizontal and vertical integration encouraged by ACOs has the potential to reduce the number of competitors in a given market and provide ACOs with substantial market power and leverage over insurers (Scheffler, Shortell, and Wilensky 2012). This type of vertical integration between hospitals and physicians has been linked to higher prices and medical spending (Baker, Bundorf, and Kessler 2014).

Background on ACO Entry Patterns

Since the ACA codified the role of ACOs in the medical delivery system, ACOs have grown rapidly but unevenly. As one might expect, ACO growth has been more rapid in densely populated and wealthier areas (Lewis et al. 2013). On the competition side, larger physician practices drive ACO entry (Auerbach et al. 2013). Using a transaction costs framework, earlier work shows that higher health maintenance organization (HMO) enrollment increases ACO entry (Frech et al. 2014). The market power effects of existing health care organizations are important to understanding the potential competitive effects of ACOs. If the market is already highly

concentrated, an ACO may encourage more collusive outcomes, such as increases in prices.

Although ACO entry has been studied, ACO enrollment and growth have received less attention. This article expands on the literature and uses recent longitudinal data of California ACOs to examine ACO enrollment and the number of ACOs.

We emphasize the variations in competitiveness across health care markets. While other studies have emphasized demographic and other factors, we focus on the competitive characteristics of the provider market, which are more important and more relevant to policy. If ACOs are being stymied in concentrated markets, then consumers may be denied access to innovative care delivery. However, if providers in concentrated markets are eagerly forming ACOs, then antitrust enforcers may be concerned about ACOs increasing market power.

We expect that HMO penetration is positively correlated with ACO participation and the number of ACOs. Participation in ACOs allows providers a means to compete with HMOs that deliver integrated care. This mechanism may be especially true in California, where Kaiser Permanente has substantial market shares and market power. The best way for non-managed care providers to compete with Kaiser may be to form an ACO. Another explanation is that past experience with coordinated managed care incentive systems makes forming an ACO easier.

We also expect to find that hospitals with substantial market power deter ACO participation and growth to maintain their market power. One way an ACO can lower costs is by steering patients to lower-cost providers, which often implies less hospitalization. Hospitals with substantial market power may thus lose volume if ACOs succeed. Similarly, if physician groups with high market shares are able to charge higher prices than they would in less concentrated markets, then they may face decreased patient volume since an ACO steers patients to lower-cost providers. Thus physician groups in highly concentrated markets may opt to not form an ACO. Dominant physician groups may also be reluctant to form an ACO if they already perform substantial amounts of care coordination. Forming an ACO would involve sharing the benefits of their existing care coordination with hospitals.

California Health Care Delivery System

This study focuses solely on California, which differs somewhat from the typical state. California has the highest share of managed care enrollees

(Kaiser Family Foundation 2013). The restricted networks and utilization control methods of managed care are forerunners to the cost-control methods of ACOs (Kerr et al. 1995). Managed care organizations have traditionally used their market share and restrictive networks to obtain lower provider prices. Partly as a response to the "managed care boom" in the late 1990s, providers have been consolidating to increase bargaining power with insurers. As a result, the California health care marketplace contains dominant hospital systems and large, integrated physician groups (Berenson, Ginsburg, and Kemper 2010). Compared with other states, California has high fee-for-service prices for common medical services (Castlight Health, n.d.).

In addition, California is home to the nation's largest integrated delivery system, Kaiser Permanente. It provides insurance and delivery for approximately 40 percent of California's privately insured population. This share varies greatly by geographic area. For example, Kaiser's share is much higher in Northern California counties than it is in Southern California counties. In some counties, it has no presence at all. Kaiser operates its own physician practices and hospitals and serves as its own insurer. Therefore, Kaiser, which is paid in a capitated system, has a strong financial incentive to reduce costs. Kaiser resembles a large ACO, only with much more powerful incentives—all savings achieved through care coordination or patient management are kept in the system. The presence of Kaiser, which commonly has lower prices than comparable competitors, limits the market power of other providers and insurers. The availability of ACOs may allow non-Kaiser providers to further integrate and coordinate care by contract and thereby compete more directly with Kaiser.

Methods

ACO Data

Cattaneo and Stroud, a California-based health care consulting firm, provides the ACO data used for this study. Funded by the California Healthcare Foundation, Cattaneo and Stroud regularly surveys all California private and Medicare ACOs. The firm gathers data on ACO size, participating physicians, and geographic scope. High-level ACO administrators typically complete the survey, and the response rate is close to 100 percent. Cattaneo and Stroud provided data from four survey waves spanning eighteen months: August 2012, March 2013, August 2013, and February 2014.

We examine two key variables from the Cattaneo and Stroud survey. First, we examine the share of individuals participating in a commercial or

Medicare ACO. For commercial ACOs, individuals are assigned to an ACO, but for the Medicare ACOs, they are attributed ex post by the Centers for Medicare and Medicaid Services, on the basis of primary care physicians used. Thus we examine the number of commercial and Medicare ACOs in a county. Using the four survey waves, we create a longitudinal panel, which gives us a unique database to examine California ACOs.

County Data

We supplemented this data with several sources of county health care marketplace and demographic information. Often referred to as "managed care light," ACOs may enter markets with existing managed care presence. For private ACOs, we use the share of privately insured individuals who are enrolled in an HMO, and for Medicare ACOs we use the share of Medicare beneficiaries who are enrolled in Medicare Advantage. Both are from the 2009 HealthLeaders-InterStudy survey.

We construct hospital concentration indexes from the American Hospital Association's 2010 annual hospital survey. We use hospital beds to measure each hospital's Herfindahl-Hirschman Index (HHI), a common measure of market concentration, ranging from 0.0 to 1.0.[1] An HHI of 1.0 implies a single monopoly firm. The Federal Trade Commission (FTC) and the Antitrust Division of the US Department of Justice categorize markets with an HHI of less than 0.15 as unconcentrated, 0.15 to 0.25 as moderately concentrated, and over 0.25 as highly concentrated (DOJ and FTC 2010). For physician concentration, we use a similar HHI where group size determines market share. We include all specialties. The physician data are from the 2011 IMS Physician Insights database.

Statistical Approach

We first analyzed the determinants of the share of the relevant populations participating in an ACO for each county and in each period. For commercial ACOs, we use the share of commercially insured individuals in a county, and for Medicare ACOs we use the share of Medicare beneficiaries. To analyze the number of private and Medicare ACOs in a county, we used the count of private and ACOs as the dependent variable.

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1. The HHI is the sum of the squared market shares within a market. For example, for a market with two hospitals, one with 67 percent of the market and one with 33 percent, the HHI is $0.67^2 + 0.33^2 = 0.56$. The HHI is sometimes analyzed in terms of percentage, rather than proportionate, market shares. If so, the range is 0–10,000. For the example above, in percentages, the HHI is $67^2 + 33^2 = 5,600$.

In all specifications, we included survey wave fixed effects and the three market characteristic variables that we hypothesize influence ACO participation—HMO enrollment, hospital market concentration, and physician market concentration. To express HMO enrollment we use a variable indicating if the county has above the California-median share of insured individuals (commercially insured for commercial ACOs and Medicare beneficiaries for Medicare ACOs) enrolled in an HMO. For both provider market concentration measures, we follow the FTC guidelines and categorize each county as a market that is unconcentrated (HHI is below 0.15), moderately concentrated (HHI is between 0.15 and 0.25), or highly concentrated (HHI is above 0.25). We also control for the size of the relevant insured population. Controlling for population is important since ACO enrollment and ACOs are concentrated in urban areas

Results

Descriptive Statistics

ACO Participation. Figure 1 presents the share of insured individuals enrolled in commercial and Medicare ACOs. In most counties, the ACO share is small. The exceptions are Inyo, Mono, Colusa, and San Francisco Counties, which have participation rates close to 10 percent. The high rates in the first three counties are idiosyncratic, since low-population counties are generally less likely to have ACOs. San Francisco is home to several successful ACOs.

The first panel of table 1 presents the number and share of ACO participants. The number of commercial and Medicare ACO participants is similar, but the share of Medicare beneficiaries is nearly seven times greater because the Medicare-eligible population is much smaller. In addition, the 2012–14 growth in the number of ACO participants per county is similar for commercial and Medicare ACOs, but the growth in the share of ACO participants is larger for Medicare ACOs.

Number of ACOs. Figure 2 presents the number of commercial and Medicare ACOs in each county. Nearly all counties have at least one ACO, and the most populous counties have several. California ACOs are particularly prominent in the Los Angeles and San Francisco metropolitan regions. The second panel of table 1 shows that, on average, each county has 1.0 commercial ACO and 1.5 Medicare ACOs. On average, less than 1.0 commercial and Medicare ACOs entered the market between 2012 and 2014.
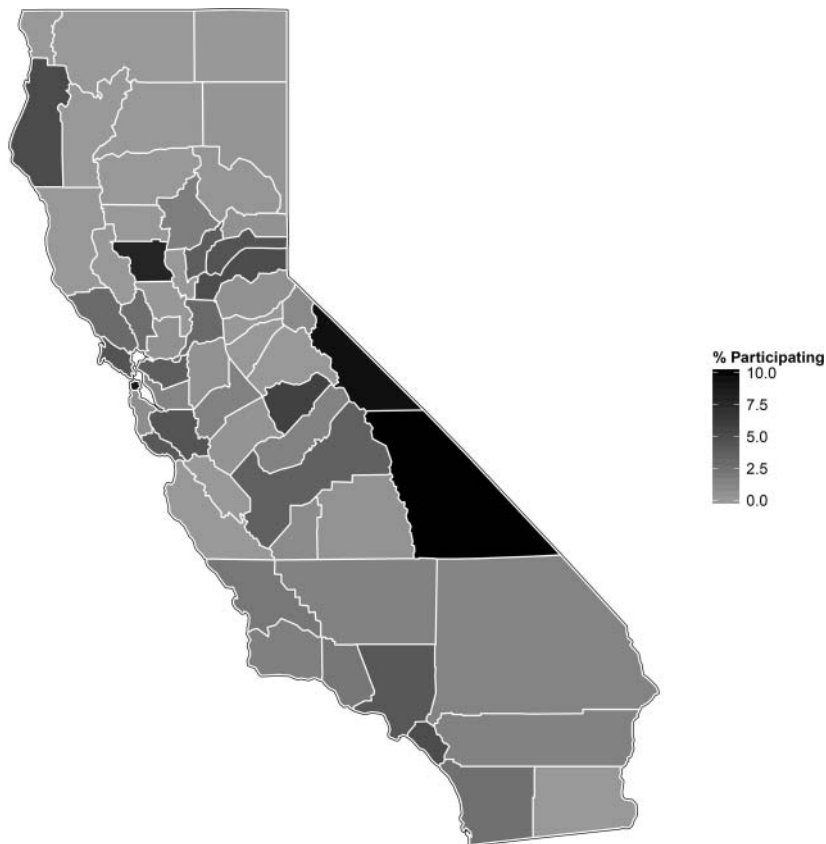
Figure 1   Share of All California Residents Participating in an ACO

Market Characteristics. The fourth panel of table 1 presents the market characteristics. Two-thirds of the counties have highly concentrated hospital markets (i.e., the HHI is above 0.25), while 14 percent have highly concentrated physician markets. The median commercial HMO and Medicare Advantage shares are 24 percent and 11 percent, respectively.

Regression Results

ACO Participation. Table 2 shows results for ACO participation. For private ACOs, the HMO share variable is strongly associated with increased private ACO participation. Our estimates imply that counties with an above-the-median share of commercially insured individuals

Table 1 Descriptive Market Characteristics

	Mean	Standard Deviation
ACO participation (2012–14):		
Number of commercial ACO participants	7,457	18,659
Share of commercial ACO participants (%)	1.23	2.31
2012–14 growth in number of commercial ACO participants	3,052	9,923
2012–14 growth in share of commercial ACO participants (%)	2.45	11.64
Number of Medicare ACO participants	8,324	30,134
Share of Medicare ACO participants (%)	7.63	13.94
2012–14 growth in number of Medicare ACO participants	3,865	13,765
2012–14 growth in share of Medicare ACO participants (%)	6.53	16.19
Number of ACOs (2012–14):		
Number of commercial ACOs	1.00	1.63
2012–14 growth in number of commercial ACOs	0.64	1.15
Number of Medicare ACOs	1.53	2.56
2012–14 growth in number of Medicare ACOs	0.88	1.50
County characteristics (2012–14):		
Mean commercially insured population	327,294	678,386
Mean Medicare population	78,193	160,536
Median HMO enrollment (%)	23.98	22.34
Median Medicare Advantage enrollment (%)	11.23	15.91
Market concentration:		
Hospital HHI	0.47	0.34
Physician HHI	0.14	0.20
Share of counties with unconcentrated hospital market (%)	24.14	42.88
Share of counties with moderately concentrated hospital market (%)	8.62	28.13
Share of counties with highly concentrated hospital market (%)	67.24	47.03
Share of counties with unconcentrated physician market (%)	75.86	42.88
Share of counties with moderately concentrated physician market (%)	10.34	30.52
Share of counties with highly concentrated physician market (%)	13.79	34.56
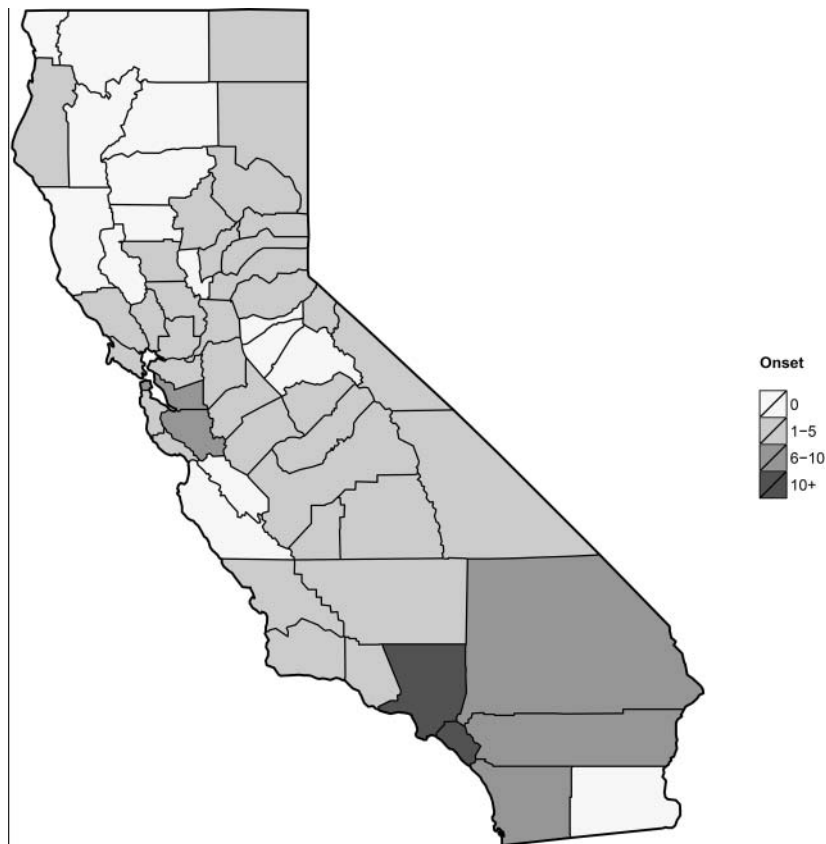
Figure 2   Number of ACOs by County

enrolled in an HMO have a 1.4 percentage point higher share of commercially insured individuals participating in an ACO. Hospital market concentration has a negative association with the share of individuals participating in a commercial ACO—moderately concentrated hospital markets have a 1.8 percentage point lower share of commercial ACO participants than unconcentrated hospital markets, and counties with highly concentrated hospital markets have a 1.2 percentage point lower share. Highly concentrated physician markets have a 0.5 percentage point lower share of commercial ACO participants. We find no association between the size of the relevant population in a county and the share enrolled in a commercial ACO.

Turning to Medicare, we find similar patterns. The share of Medicare beneficiaries who are enrolled in Medicare Advantage is positively

Table 2   Share of Individuals Participating in an ACO

Dependent Variable (2012–14)	(1) Share of Individuals Participating in a Commercial ACO	(2) Share of Individuals Participating in a Medicare ACO
Above-median HMO (commercial)	1.350***	
	(0.312)	
Above-median HMO (Medicare)		1.453
		(0.956)
Moderately concentrated hospital market	− 1.778***	− 3.250***
	(0.506)	(0.812)
Highly concentrated hospital market	− 1.151**	− 0.549
	(0.503)	(1.539)
Moderately concentrated physician market	0.514	5.111*
	(0.391)	(2.770)
Highly concentrated physician market	− 0.538**	2.273
	(0.263)	(3.031)
Commercially insured population (100,000)	− 0.0208	
	(0.0187)	
Medicare population (100,000)		1.221***
		(0.219)
March 2013	0.175	0.825
	(0.264)	(0.748)
August 2013	0.239	0.842
	(0.277)	(0.756)
February 2014	0.666**	5.968***
	(0.322)	(1.855)
Constant	0.911*	− 0.212
	(0.521)	(1.861)
Observations	232	232
R^2	0.240	0.175

Note: Robust standard errors in parentheses
*$p < .1$; **$p < .05$; ***$p < .01$

associated with the share participating in a Medicare ACO, but the result is not quite statistically significant ($p = 0.13$). Moderately concentrated hospital markets are associated with a 3.3 percentage point reduction in Medicare ACO share. Unlike for commercial ACOs, we find a positive association between physician market concentration and Medicare ACO share—counties with moderately concentrated physician markets have a 5.1 percentage point larger Medicare ACO share.

Number of ACOs. As seen in table 3, similar patterns emerge when examining the number of ACOs in a county. The share of the commercially insured population enrolled in a managed care plan is positively associated with the number of commercial ACOs. Moderately and highly concentrated hospital markets are associated with 0.54 and 0.45 percentage point reductions in the number of commercial ACOs operating. However, moderately concentrated physician markets are associated with a 0.25 percentage point increase. For Medicare ACOs, above-the-California-median enrollment in Medicare Advantage is associated with a 0.21 percentage point increase in the number of Medicare ACOs. Moderately concentrated hospital markets are associated with fewer Medicare ACOs, while highly concentrated physician markets are associated with more ACOs; but neither result is statistically significant, although they are close to significance ($p = 0.11$ and $p = 0.13$, respectively). For both commercial and Medicare ACOs, larger populations are associated with more ACOs.

The effects of the market concentration have direct competitive implications. For both commercial and Medicare ACOs, counties with more concentrated hospital markets have fewer ACOs. Counties with concentrated physician markets have fewer Medicare ACOs. If ACOs represent new competition, concentrated providers might use their market power to limit entry of ACOs. Alternatively, when providers are concentrated, they are naturally able to coordinate, leading to less efficiency gains from forming ACOs. We also find that concentrated markets have a smaller share of consumers who participate in an ACO. This finding suggests that providers in concentrated markets are not simply creating fewer ACOs but are not compensating by creating larger ACOs. In fact, the overall market impact of ACOs is smaller in more concentrated markets.

Discussion

Although several studies have examined ACO entry, this study is among the first to examine the relationship among health care marketplace characteristics, ACO participation, and the number of ACOs. We find that managed care presence is associated with a higher share participating in an ACO and more ACOs. We cannot distinguish between two mechanisms for this result: (1) forming ACOs to compete with Kaiser and (2) forming ACOs because providers are more familiar with coordinated care. Also consistent with our predictions, we find evidence that hospital concentration deters ACO participation and reduces the number of ACOs.

Table 3   Number of ACOs

Dependent Variable (2012–14)	(1) Number of Commercial ACOs	(2) Number of Medicare ACOs
Above-median HMO (commercial)	0.527***	
	(0.104)	
Above-median HMO (Medicare)		0.212*
		(0.123)
Moderately concentrated hospital market	−0.536**	−0.359
	(0.259)	(0.223)
Highly concentrated hospital market	−0.446*	−0.0188
	(0.256)	(0.244)
Moderately concentrated physician market	0.250**	0.153
	(0.118)	(0.128)
Highly concentrated physician market	−0.0531	0.222
	(0.136)	(0.147)
Commercially insured population (100,000)	0.0941***	
	(0.0293)	
Medicare population (100,000)		1.078***
		(0.155)
March 2013	0.103	0.207
	(0.118)	(0.151)
August 2013	0.241*	0.155
	(0.128)	(0.148)
February 2014	0.638***	0.879***
	(0.148)	(0.191)
Constant	0.119	−0.297
	(0.266)	(0.256)
Observations	232	232
R^2	0.619	0.814

Note: Robust standard errors in parentheses
*$p < .1$; **$p < .05$; ***$p < .01$

We find a slightly different result for physician concentration and commercial ACOs. Markets with higher physician market power have a smaller share of individuals participating in an ACO but more commercial ACOs. One potential explanation may be that smaller physician groups in concentrated markets form an ACO to compete with dominant physician groups. Because they lack market clout, they may not be able to attract a large number of participants. This mixed finding may suggest that large medical groups may possess many of the benefits of an ACO and thus do

not need to form an ACO and share profits with hospitals. However, for both physician and hospital market power, we find little or no relationship between physician concentration and the share of individuals participating in a Medicare ACO or the number of Medicare ACOs formed.

This study has limitations. We study a single state, possibly limiting generalizability. Because of sample size, we are not able to control for all county characteristics that influence ACOs. In addition, our definition of markets uses counties, which vary greatly in size. Nonetheless, this study demonstrates that local provider concentration and existing managed care penetration affect the number of ACOs formed and their success in attracting participants.

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References

Auerbach, David I., Hangsheng Liu, Peter S. Hussey, Christopher Lau, and Ateev Mehrotra. 2013. "Accountable Care Organization Formation Is Associated with Integrated Systems but Not High Medical Spending." *Health Affairs* 32, no. 10: 1781–88. doi:10.1377/hlthaff.2013.0372.

Bacher, Gary E., Michael E. Chernew, Daniel P. Kessler, and Stephen M. Weiner. 2013. "Regulatory Neutrality Is Essential to Establishing a Level Playing Field for Accountable Care Organizations." *Health Affairs* 32, no. 8: 1426–32. doi:10.1377/hlthaff.2012.0360.

Baker, Laurence C., M. Kate Bundorf, and Daniel P. Kessler. 2014. "Vertical Integration: Hospital Ownership of Physician Practices Is Associated with Higher Prices and Spending." *Health Affairs* 33, no. 5: 756–63. doi:10.1377/hlthaff.2013.1279.

Berenson, Robert, Paul B. Ginsburg, and Nicole Kemper. 2010. "Unchecked Provider Clout in California Foreshadows Challenges to Health Reform." *Health Affairs* 29, no. 4: 699–705. doi:10.1377/hlthaff.2009.0715.

Castlight Health. n.d. "Most and Least Expensive Cities for Common Medical Services." www.castlighthealth.com/price-variation-map (accessed July 20, 2014).

Colla, Carrie H., Valerie A. Lewis, Daniel J. Gottlieb, and Elliott Fisher. 2013. "Cancer Spending and Accountable Care Organizations: Evidence from the Physician Group Practice Demonstration." *Healthcare* 1, nos. 3–4: 100–107. doi:10.1016/j.hjdsi.2013.05.005.

Cuellar, Alison Evans, and Paul J. Gertler. 2006. "Strategic Integration of Hospitals and Physicians." *Journal of Health Economics* 25, no. 1: 1–28. doi:10.1016/j.jhealeco.2005.04.009.

DOJ and FTC (US Department of Justice and Federal Trade Commission). 2010. *Horizontal Merger Guidelines*. Washington, DC: DOJ and FTC. www.justice.gov/atr/public/guidelines/hmg-2010.html#foot10.

Emanuel, Ezekiel J. 2012. "Why Accountable Care Organizations Are Not 1990s Managed Care Redux." *JAMA* 307, no. 21: 2263–64. doi:10.1001/jama.2012.4313.

Frech, H. E., III, Ben Handel, Liora Bowers, Carol Simon, Richard M. Scheffler, and Christopher Whaley. 2014. "Market Power, Transactions Costs, and the Entry of Accountable Care Organizations in Health Care." Working paper. Berkeley: University of California, Berkeley.

Kaiser Family Foundation. 2013. *2013 Employer Health Benefits Survey*. Menlo Park, CA: Henry J. Kaiser Family Foundation. kff.org/private-insurance/report/2013-employer-health-benefits.

Kerr, Eve A., Brian S. Mittman, Ron D. Hays, Albert L. Siu, Barbara Leake, and Robert H. Brook. 1995. "Managed Care and Capitation in California: How Do Physicians at Financial Risk Control Their Own Utilization?" *Annals of Internal Medicine* 123, no. 7: 500–504. doi:10.7326/0003-4819-123-7-199510010-00004.

Leibenluft, Robert F. 2011. "ACOs and the Enforcement of Fraud, Abuse, and Antitrust Laws." *New England Journal of Medicine* 364, no. 2: 99–101. doi:10.1056/NEJMp1011464.

Lewis, Valerie A., Carrie H. Colla, Kathleen L. Carluzzo, Sarah E. Kler, and Elliott Fisher. 2013. "Accountable Care Organizations in the United States: Market and Demographic Factors Associated with Formation." *Health Services Research* 48, no. 6, pt. 1: 1840–58. doi:10.1111/1475-6773.12102.

Patel, Kavita, and Steven Lieberman. 2013. "Taking Stock of Initial Year 1 Results for Pioneer ACOs." *Health Affairs* (blog), July 25. healthaffairs.org/blog/2013/07/25 /taking-stock-of-initial-year-one-results-for-pioneer-acos.

Scheffler Richard M., Stephen M. Shortell, and Gail R. Wilensky. 2012. "Accountable Care Organizations and Antitrust: Restructuring the Health Care Market." *JAMA* 307, no. 14: 1493–94. doi:10.1001/jama.2012.451.