Title
Accountable Care Organizations: The National Landscape

Journal
Journal of Health Politics Policy and Law, 40(4)

ISSN
0361-6878

Authors
Shortell, Stephen M
Colla, Carrie H
Lewis, Valerie A
et al.

Publication Date
2015-08-01

DOI
10.1215/03616878-3149976

Peer reviewed

HHS Public Access

Author manuscript

J Health Polit Policy Law. Author manuscript; available in PMC 2017 April 03.

Published in final edited form as:

J Health Polit Policy Law. 2015 August ; 40(4): 647–668. doi:10.1215/03616878-3149976.

ACCOUNTABLE CARE ORGANIZATIONS: THE NATIONAL LANDSCAPE

Stephen M. Shortell, PhD, MBA, MPH,
UC Berkeley School of Public Health, Center for Healthcare Organizational and Innovation Research

Carrie H. Colla, PhD,
The Dartmouth Institute for Health Policy & Clinical Practice, Geisel Medical School

Valerie A. Lewis, PhD,
The Dartmouth Institute for Health Policy & Clinical Practice, Geisel Medical School

Elliott Fisher, MD, MPH,
The Dartmouth Institute for Health Policy & Clinical Practice, Geisel Medical School

Eric R. Kessell, PhD, and
UC Berkeley School of Public Health, Petris Center for the Study of Consumer Welfare and Healthcare Markets

Patricia Ramsay, MPH
UC Berkeley School of Public Health, Center for Healthcare Organizational and Innovation Research

---

Most of the Affordable Care Act (ACA) focused on expanding health insurance coverage for the uninsured and “under-insured” to a standard set of covered services with various levels of government subsidy depending on one’s income and the actuarial level of benefits selected. The expected increased demand for care raises important questions about whether the historically siloed, fragmented U.S. healthcare delivery system can cope with the increased demand? Many believe that to meet this challenge will require rather profound and systemic changes in the organization of the delivery system and the way in which providers (hospitals and physicians in particular) are paid (Yong, Saunders and Olsen, 2010).

A leading example is the creation of Accountable Care Organizations (ACOs). ACOs are entities that are held accountable by payers for the cost and quality of care provided to a defined group of patients. They have quickly gone from being described as a “unicorn” (Morrison, 2011) to over 600 ACOs in the U.S.; approximately equally divided between CMS Medicare ACOs and those involving private sector commercial insurers (Muhlestein, 2014). CMS has three different models: (1) a Pioneer model in which providers take on both upside and downside risk in return for potentially larger rewards if expenditures are kept within the designated target; (2) a shared savings model in which providers, at least initially, are not accountable for downside losses but can share in upside savings and (3) an advanced payment model whereby primarily small and rural providers are given advance payments to invest in care management infrastructure and EHR capabilities with the expectation that they will achieve savings in the future.

The appearance of ACOs on the national healthcare delivery landscape has re-kindled the long standing debate over whether increased consolidation and integration of providers are associated with increased quality and lower cost that outweigh the potential for such consolidations to raise prices through their increased size and negotiating leverage with payers (Leibenluft, 2011; Haas-Wilson, 2011; and Scheffler, Shortell, and Wilensky, 2011). This paper provides a foundation for considering various aspects of this debate by summarizing the current state of ACO formation and development; some challenges and lessons involved; the evidence on quality and cost performance to date; and some of the issues to be considered in the future.

The National Picture- What We Think We Know

A broad lens is needed to assess and understand the variation in ACO performance. It is important to consider the different environmental contexts in which ACOs operate; their readiness to make necessary changes in their structures, capabilities, and responses to new payment incentives; their ability to implement changes in care delivery models, information exchange and to publicly report results; the intermediate outcomes achieved such as in care coordination and clinical integration; and the ultimate impact on clinical outcomes, patient reported outcomes of care, patient experience and costs (Fisher, Shortell, and Kriendler *et al.*, 2012). Each of these areas influences each other in complex ways posing challenges for policymakers interested in advancing the desirable properties of the ACO approach while mitigating the undesirable. Taking these factors into account, we draw largely on the National Survey of ACOS (NSACO – The Dartmouth Institute and UC-Berkeley Center for Healthcare Organizational and Innovation Research, 2012–2014) to summarize what AOS look like on a number of dimensions including payers, number of attributed patients, the nature of contracts signed, the number and types of services offered, care management capabilities, and the development of a three category taxonomy of ACOs that may aid assessment, and understanding, and inform future policy interventions (Shortell, Wu, and Lewis et al., 2014). The first wave survey was conducted between October of 2012 and May of 2013 with 173 respondents (response rate of 70 percent) and the second wave between October of 2013 and January of 2014 with 97 respondents (response rate of 60%). Further details are provided in Colla, *et al.* (2014).

What Do They Look Like?

Most ACOs (55%) have only one contract. About half have a contract with a private payer with 16% having a contract with both Medicare and a private payer. Thirty six percent have a contract with Medicare only. Most private payer contracts are shared savings models (75%) and nearly half include downside risk (45%). The vast majority (84%) make shared savings contingent on meeting quality performance metrics and 40% include additional bonus payments for quality performance. About 60 percent of private contracts include upfront payments for care management programs and 16% provide some funds for capital investment. At this point in time only 14% operate under full capitation; 6% under partial capitation; and 8% under global budget but with fee-for-service payment.

Fifty-one percent of ACOs are physician led and 33 percent jointly led by hospitals/physicians. They average 179 primary care physicians and 241 specialists. Twenty eight percent include a Federally Qualified Health Center or Rural Health Center. Forty two percent include behavioral health providers. Fifty one percent offer at least one post-acute service such as outpatient rehabilitation.

Table 1 shows the number of attributed patients by payer. As shown a relatively high percent of Medicare ACOS serve a smaller number of patients (5,000–10,000) while a relatively high percent of Medicaid ACOs serve a larger group of patients (20,000–50,000) The private sector ACOs are relatively evenly split among the size categories. In computing the total cost of care for these attributed patients almost all ACOs include emergency room, inpatient care, lab/X-ray, outpatient care, advanced imaging and professional services. Seventy eight percent include durable medical equipment and pharmacy. Sixty percent include mental health/substance abuse. Only 50 percent include vision, hearing and speech, and only 7 percent include dental.

Figure 1 shows the degree of care management and care coordination activities being used split out by whether the ACO is physician led or led by others. As shown, the physician led engage in significantly more pre-visit planning, medication management and preventive care reminders (30%) than those led by others such as hospitals or jointly led by hospitals and physicians (13%). In contrast, those led by hospitals or jointly by hospitals and physicians are significantly more likely to have programs to assess and reduce hospital readmissions (51%) than those led by physicians only (42%). The other differences shown are not statistically significant but it is of interest to note that with the exception of reducing hospital readmissions, less than half of the ACOs – whether physician led or not – have implemented the indicated care management and care coordination activities.

In the areas of performance management and use of health information technology, 50 percent of the ACOs provide their physicians with information on the quality of care that they provide and 33% provide them with information on cost. Forty six percent provide individual level financial incentives for meeting performance targets. As of 2012, 87 percent attested to the Meaningful Use criteria. Thirty eight percent were able to integrate outpatient and inpatient data and 27 percent reported having systems in place for predictive risk assessment and risk stratification.

A Taxonomy of ACOs

While the above data provide a descriptive overview of what ACOs are like and what they are doing, they do not provide a composite picture or lend themselves in isolation to drawing policy or practice implications. To address this need we developed a theoretically based and empirically grounded typology/taxonomy (Shortell, Wu, Lewis et al., 2014). The taxonomy is based on resource dependence (Aldrich and Pfeffer, 1976 and Pfeffer and Salancik, 1978) and institutional (DiMaggio and Powell, 1983; Scott, Ruef, Mendel, and Caronna, 2000) theories of organizations. These emphasize the ACOs need to acquire resources to implement new models of care on the one hand with the need to gain the commitment of and be seen as “credible” to patients, payers and regulators on the other hand.

Using the above framework we drew on eight specific measures including size as measured by number of FTE clinicians; breadth of ACO participation as measured by the number of different types of providers such as hospitals, physicians, and post-acute facilities; scope of services provided; whether or not they belonged to an integrated delivery system; percent of primary care clinicians; institutional leadership type such as physician led, hospital led or jointly led; an index measuring physician performance management; and the degree of prior experience with payment reform. A two-step cluster analysis approach to account for both categorical and continuous data (Chiu, Fang, and Chen et al., 2001) yielded three distinct clusters or types of ACOS; larger Integrated Delivery System ACOs, smaller physician led ACOs, and hybrid jointly led ACOS. The IDS ACOS have a greater number of other organizations involved, offer a broad scope of services, are almost entirely members of an IDS and have considerable prior payment reform experience. The smaller physician led ACOs have few other organizations involved, offer a narrow scope of services, have a relatively high percentage of primary care providers and score relatively high on performance management accountability. The hybrid led ACOs are intermediate on most of the measures but score lowest on performance management accountability.

Figure 2 shows the differences for each of the performance management methods by ACO type highlighting the higher performance of the physician led. This may be due to smaller size making it easier to organize provider feedback. Also being led by physicians may give these ACOs greater credibility with colleague physicians in implementing such accountability mechanisms.

Figure 3 shows the differences in regard to prior payment reform experience highlighting the generally greater experience of the IDS led and hybrid led ACOs versus the physician led. This suggests that the former types maybe may be more ready to take downside risk than the physician led. This is one example of how the taxonomy can be used by CMS, private payers, and others in deciding how quickly to move toward full risk bearing contracts such as in full capitation or in setting global budgets. In brief, the taxonomy provides a parsimonious way of thinking about ACOS for purposes of not only evolving payment polices but also targeting technical assistance efforts and considering the anti-trust issues; the focus of this special issue. For example, intuition would suggest that most of the concern might focus on the larger IDS ACOS than on the smaller physician led. But perhaps the greatest value of the taxonomy will lie in facilitating the drawing of conclusions from examining the cost, quality, and patient experience outcomes of ACO performance over time. Toward this end, some of the early evidence on ACO performance is summarized below.

Early Evidence

The evidence to date on whether or not ACOs can help achieve the triple aim of improving quality and population health while reducing the rate of growth in costs is mixed. Findings from the Physician Group Practice Demonstration suggested little overall cost savings but significant savings of $532 per beneficiary for the dual eligible population primarily due to reductions in the need for acute inpatient care (Colla, Wennberg, and Meara, et al, 2012; Pope, Kautter, and Leung, et al., 2014). All sites improved on all of the quality measures

used. Second year results of the Medicare ACOs showed over $372 million in total savings and ACOs qualified for shared savings payments of $445 million (CMS.GOV, 2014). But only 11 of 23 Pioneer ACOs earned shared savings, suggesting that most of the savings were associated with a relatively small number of high-performing ACOs. Findings from the Massachusetts Alternative Quality Contract documented nearly 3 percent in savings over two years compared to a control group primarily due to reduced imaging, hospital utilization, and using lower cost sites of care (Song, Safran, and Landon, *et al.*, 2012). Savings and quality improvements have continued into the third and fourth year of the program (Song *et al.*, 2014). Patient experience with receiving timely care and being informed about specialty care ratings improved more than those receiving care from a non-ACO control group and patients with multiple chronic conditions and high predicted Medicare spending had higher ratings than equivalent non-ACO patients (McWilliams, Landon, Chernew, and Zasloavsky, 2014). Further, quality of care has improved by nearly four percentage points on chronic care management measures. In the private sector a virtual ACO alliance established between California Blue Shield, Dignity Health System, and Hill Physician Group in Northern California resulted in savings of $20 million for 24,000 California state employees (Markovich, 2012). This was achieved through an inter-related package of interventions that included integrated discharge planning, care transition programs and patient engagement strategies, creating a health information exchange, focusing on the 5,000 members that accounted for 75 percent of the spending, implementing evidence-based variance reduction programs in target hospitals, and having a visible dashboard of measures available to track progress. Ongoing and new evaluations over the next few years will provide a more comprehensive assessment of ACO performance but what seems clear is that there will be “winners” and “losers”; higher performers and lower performers. One approach for learning more about the differences between the two is to compare ACO providers with non-ACO providers on various dimensions within and across states. Toward this end, we provide some preliminary data on California – the most populous state and with the greatest number of ACOs.

The California Experience

California has a long history of health care delivery innovation beginning with the development of prepaid medical group practice by Kaiser-Permanente in the 1930s. It was also in the forefront of managed care development s in the 1990s. As a result the state is served by nearly 300 medical groups and a half dozen or so relatively large integrated health systems. Approximately 200 of the medical groups participate in the “delegated model,” by which they are paid a risk adjusted per member/per month capitation fee from commercial payers for all professional services. Over the past ten years most of these same groups have participated in the country’s largest pay for performance program (Integrated Healthcare Association, 2014). Thus, the state was ripe for participation in the CMS Medicare ACO programs and in additional risk-based arrangements with private commercial insurers as well. As noted, there are at present approximately 70 ACOs serving nearly a million people representing an increase of 78 percent between August 2012 and February 2014 (Cattaneo & Stroud 2014). Nearly two-thirds of California physicians belong to physician organizations participating in an ACO (Cattaneo and Stroud, 2014).

Given that all of the “delegated model” medical groups participating in California’s pay for performance program have incentives to control expenditures and meet pre-determined quality measures to receive additional payments, we were interested in seeing whether those also participating in ACOs provided even higher quality than those not participating in ACOs. In brief, we assess the added value, if any, of participating in an ACO. Figures 4A and 4B compare the ACO groups with the non-ACO groups on the HEDIS performance measures used by the Integrated Healthcare Association in their pay for performance program. These include quality scores for asthma care, cancer screening, chlamydia screening, diabetes care, heart care, and treating children plus a summary score. In addition, a composite score is presented for electronic health record capability. As shown, with the exception of cancer screening (where ACOs score higher) there are no statistically significant differences between the two groups. However, when Kaiser is excluded from the analysis, chlamydia screening becomes statistically significant, and two additional ratings of diabetes care and pediatric treatment approach statistically significant differences. We also examined patient experience scores. Table 2 shows that for each of five individual measures of patient experience and the overall rating of care measure, those participating in an ACO whether or not Kaiser-Permanente is included, score significantly higher, although the differences are generally quite small.

In addition, for a still smaller number of groups, we compare five California groups who were participating in an ACO with 13 who were not on a 25 item patient centered medical home (PCMH) index from a national survey of all physician organizations, (Wiley, Rittenhouse, Shortell, et al., 2015). The mean percentage PCMH score for practices participating in ACOs was 78.67 (67.19–90.14) while the mean score for practices not participating in ACOs was 49.82 (39.25–60.39). Thus, there is some suggestion that ACOs do provide higher quality of care on some measures and have significantly greater patient-centered care capabilities.

Using data from the Dartmouth/Berkeley National Survey of Accountable Care Organizations, we compared some of the differences between California ACOs and non-California ACOs on seven measures contributing to a taxonomy of ACOs (Shortell, Wu and Lewis, et al., 2014). As shown in Table 3, the California ACOs are significantly larger, offer a greater number of services, and have more experience with prior payment reform initiatives.

Using data from the third wave of the National Survey of Physician Organizations (NSPO3), we were also able to compare California ACO physician practices with practices in other states on a number of characteristics. The results shown in Table 4 indicate that California practices see a significantly higher percentage of non-English speaking patients; bear a higher percent of financial risk for hospital costs; have greater exposure to pay for performance and public reporting, but have a lower average patient centered medical home index score than practices across other states. There is a generally similar pattern of comparisons for practices reporting that they were planning to join an ACO within the ensuing 12 months with the exception that they have less exposure to pubic reporting and also receive a lower percent of revenue from Medicaid and un-insured patients.

Antitrust Implications

The above review suggests a number of potential measures that could be used in developing an “Anti-trust ACO Risk Assessment Profile” by the FTC and others to address the potential of ACOs to raise prices or otherwise reduce competition in markets in ways that might have adverse consequences for consumers. These measures are offered as examples that can be used at the time of ACO formation or expansion to assess the future likelihood that commitments to achieve efficiency and quality gains within a fixed period of time will be achieved.

As shown in Table 5, we suggest that the greater the percent of patients for whom the ACO is accountable for down-side risk and, in particular, hospital costs, the more likely they are to reduce costs due to the financial incentives involved. The greater the extent to which ACOs meet all quality measures and score higher on care management processes frequently associated with patient centered medical homes the more likely they are to meet quality and cost metrics due to their increased capabilities to manage care ACOs with a higher primary care physician to specialist ratio may be better able to meet cost and quality measures and due to a greater focus on primary care and, therefore, be of less anti-trust concern. ACOs that are physician led as opposed to hospital led also may be of less concern due to their relative lack of market influence in comparison to hospitals. Finally, ACOS that do not include a hospital partner or ACOS that do not have an exclusive relationship with a single hospital may be less of a threat to exert undue negotiating leverage with payers that results in higher prices.

The extent to which these or related measures might serve as useful diagnostic indicators will also depend on the experience gained with some of the early ACOS; the extent to which current physician practices and hospitals are likely to join or form an ACO; and on how other key issues will be addressed.

Early Lessons, Future Evolution, and Key Issues

The continued evolution of ACOs can be informed by some of the lessons learned from some of the early entrants. Among these are the importance of prior experience in managing patient care risk; electronic health record(EHR) functionality; implementation of high risk complex care management programs; strong physician leadership; and the presence of mature quality improvement programs (Larson, Van Citters, and Kreindler, et al., 2012). Taken together these might be considered a “capability package” that all ACOS need to acquire to meet the new demands of being accountable for both cost and quality of care under various expenditure target arrangements. Prior experience with risk based payment gave some of the early ACOS a head start implementing some of the behavioral and work flow changes needed in delivering care including the need to delegate more functions to nurses, pharmacists, and other health professionals, the need to form teams, and the need to re-organize the “office visit”. Most of the early ACOS also had strong EHR systems in place that included not only disease registries but data warehouses for purposes of aggregating and analyzing data for performance feedback internally and pubic reporting externally. In addition they had large enough patient populations to use the data to identify through various

predictive analytic algorithms the sub-population of high cost/high risk patients requiring the most care. This, in turn, enabled them to develop complex care management teams usually headed by nurses assigned to manage a given number of patients with a focus on helping these patients maintain their independence and functionality and reducing the need for hospital re-admissions or emergency department visits. A key component of all of these efforts was the presence of strong physician “champions” who led and re-enforced the behavioral and cultural changes needed to implement the new models of care (Colla, Lewis, and Shortell, et al., 2014). Finally, most of the early ACOs had at least several years of experience with quality improvement initiatives such as the use of plan, do, study, act (PDSA) methods, participation in various quality improvement collaboratives, six-sigma programs reducing the variation in clinical outcomes and/or costs, and LEAN production systems emphasizing methods to eliminate waste and developing an organizational culture emphasizing value. These provided some of the tools needed to make the necessary changes.

The extent to which some of the more recent ACOs possess these capabilities remains to be seen. Clearly an additional skill will be the need to form successful alliances and partnerships with others. A partial “window” on this future can be assessed by comparing physician practices who are now members of ACOs with those who are thinking about it in the near future versus those who are not. Recent research suggests a reason for both some degree of optimism as well as caution. On a comprehensive index of the ability to care for patients with high risk complex chronic illnesses, a national sample of physician practices who are members of ACOs scored an average of 53 points (out of 100 points); those who planned to become a member within the ensuing 12 months scored 42 points while those who had no plans to become involved with an ACO scored an average of 32 points (Shortell, McClellan, and Ramsay, et al., 2014). These findings suggest that considerable investment will need to be made across the country on a large scale if the country is to get to the “tipping point” of a delivery system that can consistently provide higher value care that meets the triple aim goals.

Based on the above review of the national landscape six issues are likely to dominate future policy discussions of ACOs, with important practice implications as well. First enrollment size really matters. There needs to be a sufficient number of enrolled or attributed patients to make the investments in new methods of delivering care; in brief, to create the economies of scale and scope to achieve the desired savings. In some cases this may pose judgment calls between anti-trust concerns on the one hand and ACO goals on the other hand. But as suggested earlier these can be addressed by developing a set of measures that hold the ACO accountable for achieving its cost and quality objectives without having a negative impact on competition in the marketplace. Based informally on self-reported data to date, it appears that a minimum range of 25,000 to 50,000 enrolled lives is necessary to make the needed investment, although this will also be influenced by the overall number of patients served by the practice that is a part of the ACO. The importance of care management systems for high cost/high risk patients and new tools such as predictive risk modeling have already been noted. But it is also important to note the growing importance of EHR systems and information exchanges that will enable providers and patients to exchange information across the continuum of care. A related issue is the need for payers, both Medicare and commercial insurers, to agree on a common more focused set of cost and quality measures,

and their calculation across contracts. This will greatly ease the administrative burden on ACOS to respond to different measures for different payers. The actual thresholds for payment can vary depending on the nature of the contract involved. A fifth issue deserving more attention than it has received to date is the ability of current providers to develop new alliances and partnerships in forming ACOs; particularly with behavioral health and post-acute care providers and, potentially with community-based health and social welfare agencies. This will involve challenges to leadership of developing mutually shared goals, integrating different professional and social identities (Kriendler, Larson, Wu *et al.*, 2012), collaborative governance models (Addicott and Shortell, 2014) and new business models. Finally, it is likely that delivery system reform will not succeed without a radically expanded role of patients and their families in their care (Cosgrove, Fisher, Gabow, *et al.*, 2013). Due to their incentives, ACOs can play a pivotal role in leading the nation to a more patient-centered health care system. Evidence from largely "early adopters" suggests the potential for this to occur but also the many challenges involved in bringing this to scale, such as changes in provider workflow and role relationships (Shortell, Sehgal, and Bibi et al., 2015).

We conclude this overview with what ACO leaders have to say about the outlook for the future. As shown in Figure 5, half of physician led ACO leaders and about a third of others believe that at least half of all patients will be covered by ACO-like contracts within five years. Roughly 80 percent believe this will be true in their own markets. Significantly more physician led ACO leaders believe ACO contracts have great potential to improve quality than other led ACOs. But less than half of either Physician led or other led believe such contracts have great potential to reduce cost growth. In the final analysis, it is important to recognize that while ACOs are not unicorns and appear to be having an impact, they are not a panacea for what ails the U.S. health care delivery system.

Acknowledgments

We thank Laura Spautz for her assistance with this manuscript and the Integrated Healthcare Association, Oakland, California, and Meghan Hardin of the Pacific Business Group on Health for provision of data used in this analysis.

This work was supported in part by the Commonwealth Fund, New York, under grant #2013008 (PI: Fisher), 01/01/13 - 12/31/13; by the Robert Wood Johnson Foundation under grants #68847 (May 1, 2011 – July 31, 2013) and #71110 (July 1, 2013 – November 30, 2013) (PI: Shortell), and by the Berkeley Forum participants.

References

Addicott R, Shortell SM. How Accountable Are Accountable Care Organizations? Health Care Management Review. 2014 Oct-Dec;39(4):270–278. [PubMed: 24393832]

Aldrich HE, Pfeffer J. Environments of Organizations. Annual Review of Sociology. 2:79–105. (Volume publication date August 1976).

CMS.GOV. Factsheets: Medicare ACOs Continue to Succeed in Improving Care. Baltimore, MD: Sep. 2014

Cattaneo & Stroud Inc. Summary of Operational ACOs by County. 2014

Chiu, T., Fang, D., Chen, J., Wang, Y., Jeris, C. Proceedings of the seventh ACM SIGKDD international conference on knowledge discovery and data mining. ACM; 2001 Aug. A robust and scalable clustering algorithm for mixed type attributes in large database environment; p. 263-268.

Colla CH, Wennberg DE, Meara E, Skinner JS, Gottlieb D, Lewis VA, Snyder CM, Fisher ES. Spending differences associated with the Medicare Physician Group Practice Demonstration. JAMA. 2012 Sep 12; 308(10):1015–23. DOI: 10.1001/2012.jama.10812 [PubMed: 22968890]

Colla CH, Lewis VA, Shortell SM, Fisher ES. First National Survey Of ACOs Finds Physicians Are Playing Strong Leadership And Ownership Roles. Health Aff (Millwood). Jun; 2014 33(6):964–971. [PubMed: 24889945]

Cosgrove DM, Fisher M, Gabow P, Gottlieb G, Halvorson GC, James BC, Kaplan GS, Perlin JB, Petzel R, Steele GD, Toussaint JS. Ten Strategies To Lower Costs, Improve Quality, And Engage Patients: The View From Leading Health System CEOs. Health Affairs. Feb; 2013 32(2):321–327. [PubMed: 23381525]

DiMaggio PJ, Powell WW. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. American Sociological Review. Apr; 1983 48(2):147–160.

Fisher ES, Shortell SM, Kreindler SA, Van Citters AD, Larson BK. A framework for evaluating the formation, implementation, and performance of Accountable Care Organizations. Health Affairs. 2012 Nov; 31(11):2368–2378. [PubMed: 23129666]

Haas-Wilson, D., Garmon, C. International Journal of the Economics of Business. Vol. 18. Taylor & Francis Journals; 2011. Hospital Mergers and Competitive Effects: Two Retrospective Analyses; p. 17-32.Integrated Healthcare Association. 2013 Pay for Performance (P4P) Program Fact Sheet.

Integrated Healthcare Association. California Pay for Performance Overview. 2014. http://www.iha.org/p4p_california.htmlAccessed December 2014

Kreindler SA, Larson BK, Wu FM, Gbemudu JN, Carluzzo KL, Struthers A, Van Citters AD, Shortell SM. The rules of engagement: physician engagement strategies in intergroup contexts. Journal of Health Organization and Management. 2014; 28(1):41–61. [PubMed: 24783665]

Larson BK, VanCitters AD, Kreindler SA, Carluzzo K, Gbemudu J, Wu F, Nelson EC, Shortell SM, Fisher E. Insights from transformations under way at four Brookings-Dartmouth accountable care organization pilot sites. Health Affairs. 2012 Nov; 31(11):2395–406. [PubMed: 23129669]

Leibenluft RF. ACOs and the enforcement of fraud, abuse, and antitrust laws. New England Journal of Medicine. 2011; 364(2):99–101. [PubMed: 21175308]

Markovich P. A Global Budget Pilot Project Among Provider Partners And Blue Shield Of California Led To Savings In First Two Years. Health Affairs. Sep.2012 31(9)

McWilliams MJ, Landon BE, Chernew ME, Zaslavsky AM. Changes in Patients' Experiences in Medicare Accountable Care Organizations. N Engl J Med. Oct 30; 2014 371(18):1715–1724. [PubMed: 25354105]

Morrison, I. Chasing the Unicorn: The Future of ACOs. Ian Morrison's blog. 2010. accessed on 9/3/14 at http://ianmorrison.com/chasing-unicorns-the-future-of-acos/2011 unicorn,

Muhlestein, D. Accountable Care Growth In 2014: A Look Ahead. Health Affairs Blog. Jan 29. 2014 Accessed on 9/3/14 at http://healthaffairs.org/blog/2014/01/29/accountable-care-growth-in-2014-a-look-ahead/

NSACO. The Dartmouth Institute and UC-Berkeley. Center for Healthcare Organizational and Innovation Research (CHOIR); 2012–2014.

Pfeffer, J., Salancik, G. External Control of Organizations – A Resource Dependence Perspective. New York: Harper and Row; 1978.

Pope G, Kautter J, Leung M, Trisolino M, Adamace W, Smith K. Financial and Quality Impacts of the Medicare Physician Group Demonstration Practice. Medicare and Medicaid Research Review. 2014; 4(3)

Scott, WR., Ruef, M., Mendel, PJ., Caronna, CA. Institutional Change and Healthcare Organizations: From Professional Dominance to Managed Care. University of Chicago Press; 2000.

Scheffler RM, Shortell SM, Wilensky GR. Accountable Care Organizations and Antitrust. JAMA. 2012; 307(14):1493–1494. DOI: 10.1001/jama.2012.451 [PubMed: 22496262]

Shortell SM, McClellan SR, Ramsay PP, Casalino LP, Ryan AM, Copeland KR. Physician Practice Participation in Accountable Care Organizations: The Emergence of the Unicorn. Health services research. 2014

Shortell SM, Sehgal N, Bibi S, Ramsay PP, Neuhauser L, Colla CH, Lewis VA. Are Accountable Care Organizations Engaging Patients and their Families? Under review. 2015

Shortell SM, Wu FM, Lewis VA, Colla CH, Fisher ES. A Taxonomy of Accountable Care Organizations for Policy and Practice. Health services research. 2014; 49(6):1883–1899. [PubMed: 25251146]

Song Z, Safran DG, Landon BE, Landrum MB, He Y, Mechanic RE, Day MP, Chernew ME. The 'Alternative Quality Contract,' based on a global budget, lowered medical spending and improved quality. Health Aff (Millwood). 2012 Aug; 31(8):1885–94. Epub 2012 Jul 11. DOI: 10.1377/hlthaff.2012.0327 [PubMed: 22786651]

Song Z, Rose R, Safran DG, Landon BE, Day MP, Chernew ME. Changes in Health Care Spending and Quality 4 Years into Global Payment. New England Journal of Medicine. 2014; 371(18):1704–1714. [PubMed: 25354104]

Wiley JA, Rittenhouse D, Shortell SM, Casalino L, Ramsay PP, Bibi S, Ryan AM, Copeland K, Alexanderg J. Managing Patients with Chronic Illness: Is Delivery System Reform Getting Traction. Health Affairs. 2015 forthcoming.

Yong, PL., Saunders, RS., Olsen, LA. The Healthcare Imperative: Lowering Costs and Improving Outcomes, Workshop Series Summary. Institute of Medicine, National Academie Press; Washington, DC: 2010.

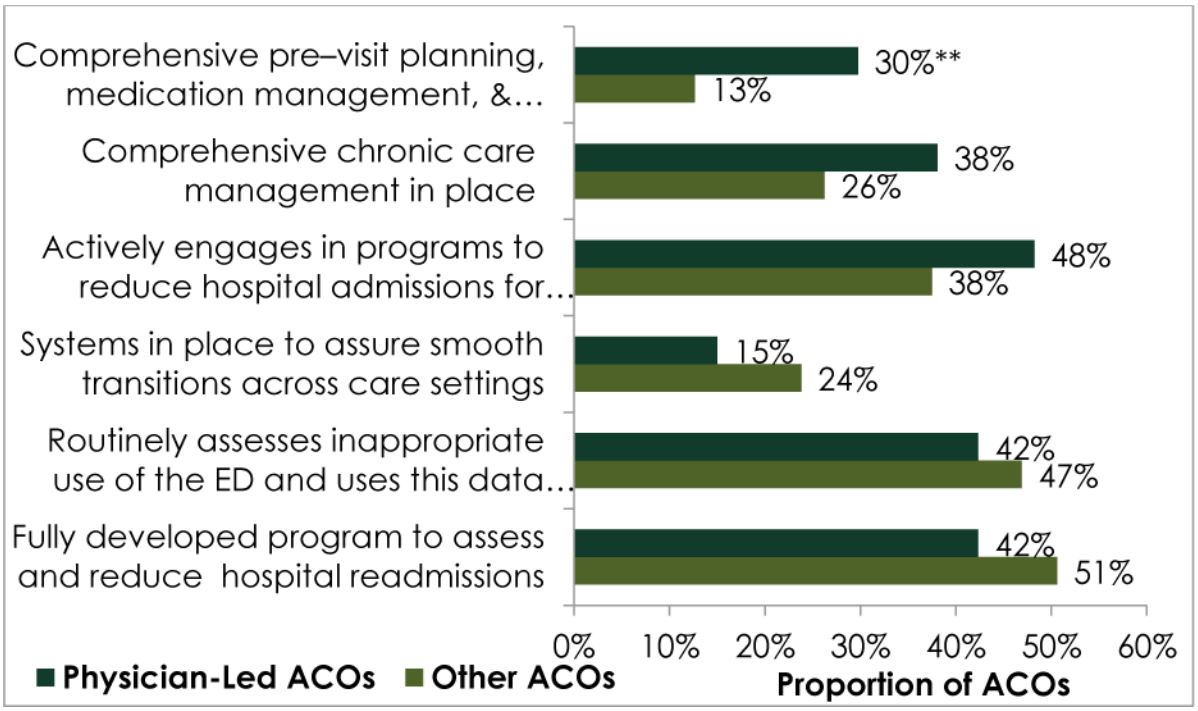


Figure 1. ACO Care Management Capabilities by Leadership Model

**significant at $p < 0.05$

Source: The Dartmouth Institute for Health Policy and Clinical Practice, Geisel School of Medicine at Dartmouth; and the Center for Healthcare Organizational and Innovation Research (CHOIR), UC Berkeley School of Public Health, 2014

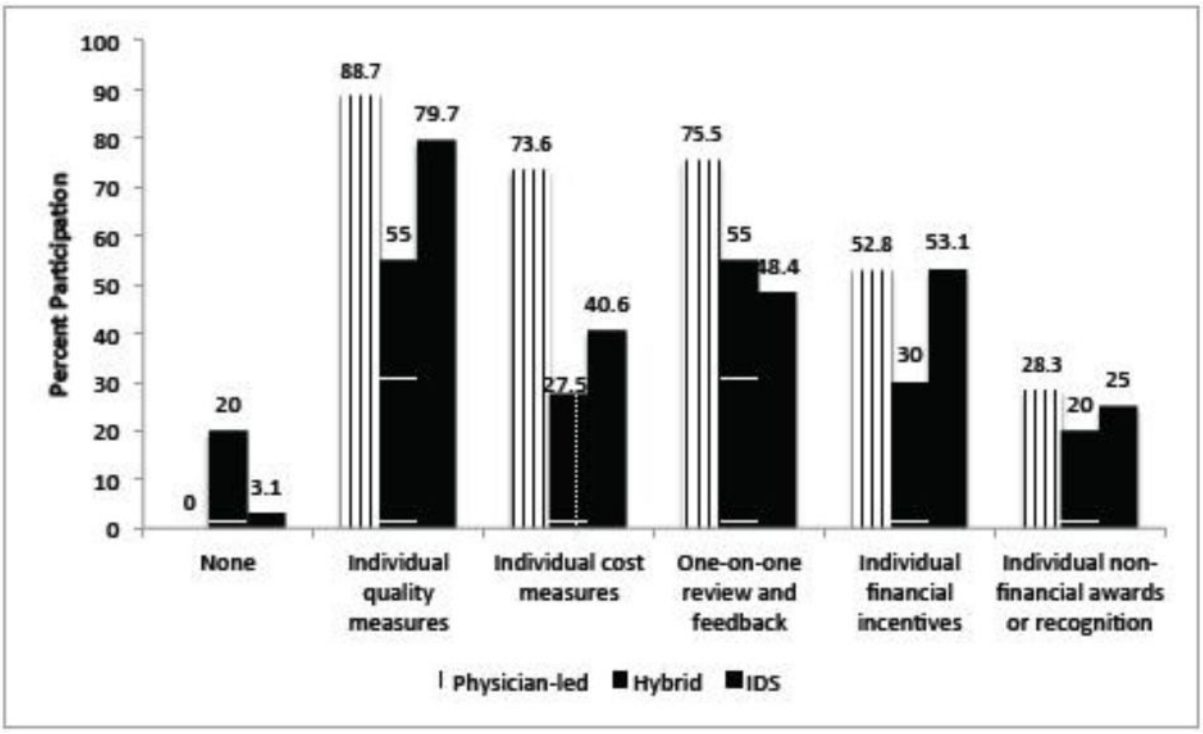


Figure 2. ACO Participation in Physician Performance Management/Accountability, percent within cluster who participate

Source: Shortell SM, Wu FM, Lewis VA, Colla CH and Fisher E.S. "A Taxonomy of Accountable Care Organizations for Policy and Practice." *Health Services Research.* online, September 16, 2014. DOI: 10.111/1475-6773.12234. Reprinted with permission

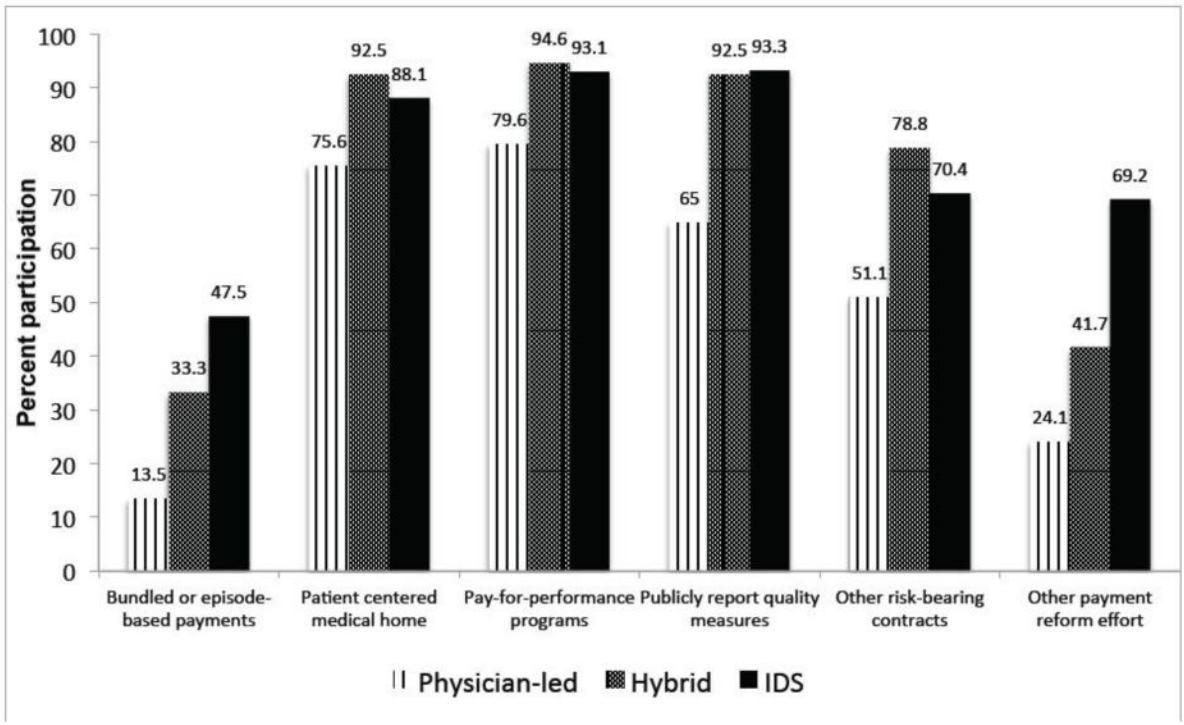
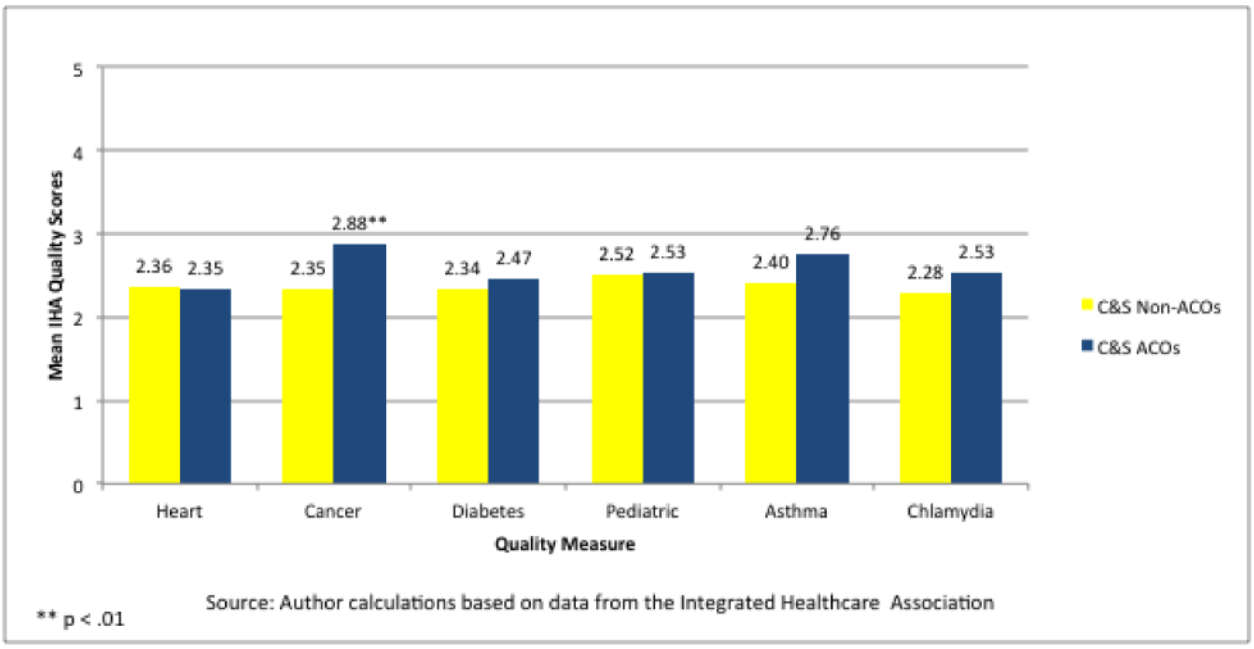


Figure 3. ACO Participation in Payment Reform Strategies, percent within cluster with ACO or ACO Provider Group level participation

Source: Shortell SM, Wu FM, Lewis VA, Colla CH and Fisher E.S. "A Taxonomy of Accountable Care Organizations for Policy and Practice." *Health Services Research*, online, September 16, 2014. DOI: 10.111/1475-6773.12234. Reprinted with permission.



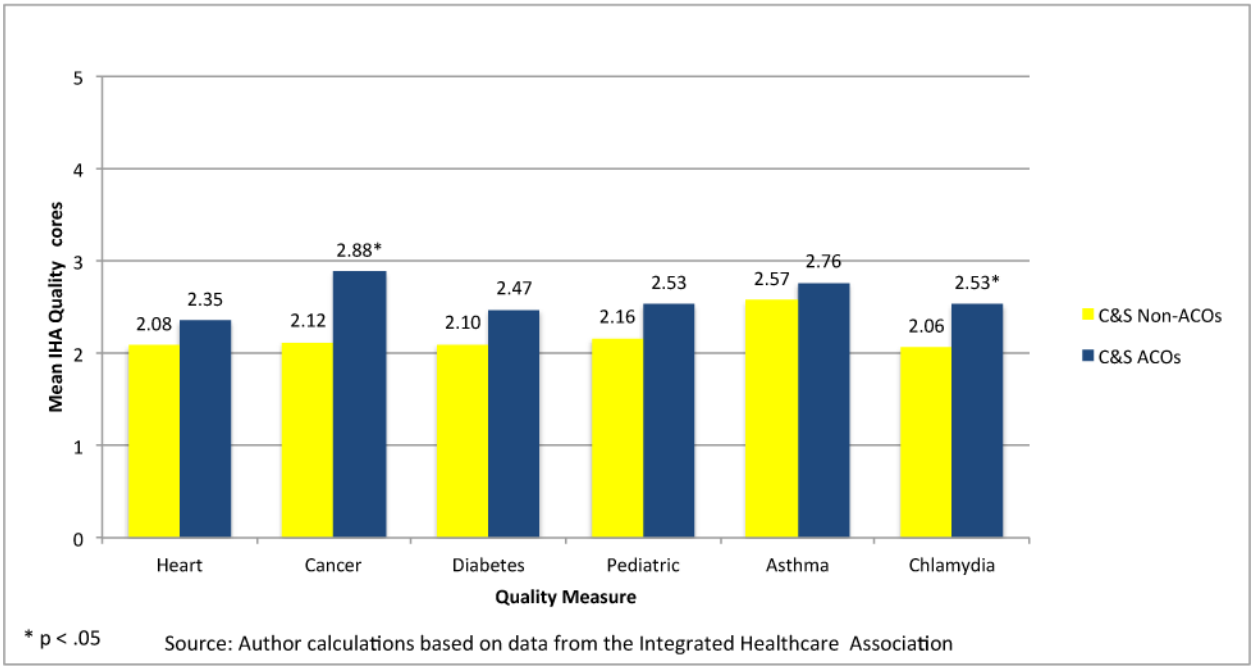


Figure 4.

A. Mean Quality Scores for California Medical Groups, Including Kaiser Permanente

B. Mean Quality Scores for California Medical Groups, Excluding Kaiser Permanente

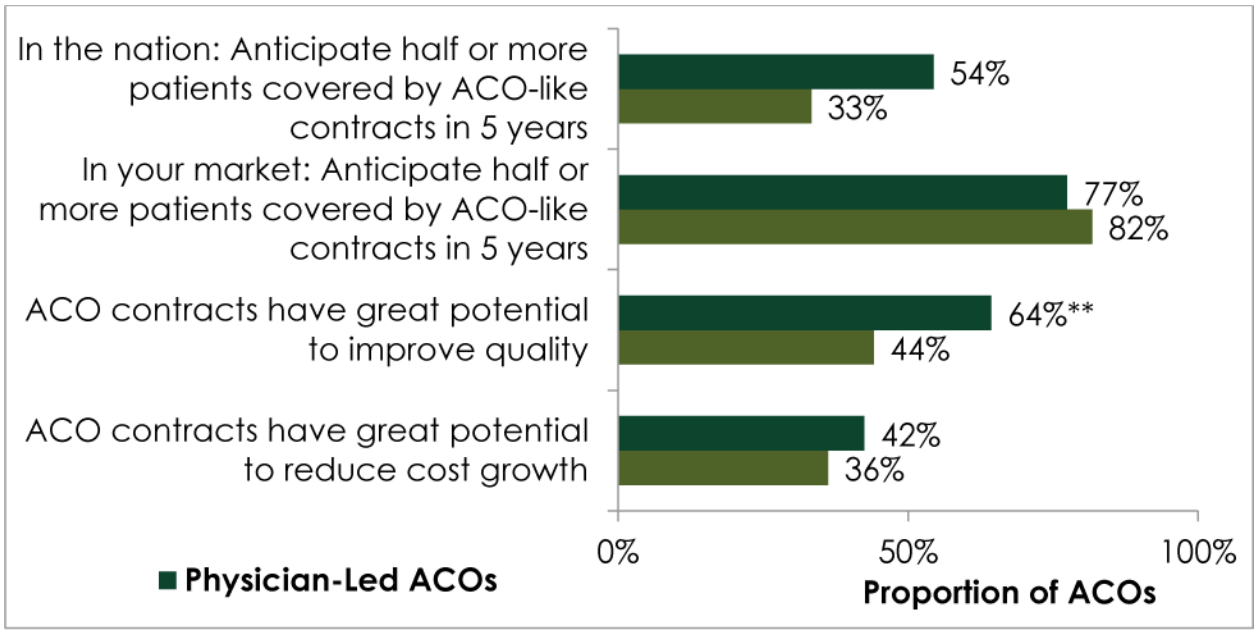


Figure 5. Outlook on the ACO Model

**significant at $p < 0.05$

Source: National Survey of Accountable Care Organizations. The Dartmouth Institute for Health Policy and Clinical Practice, and Center for Healthcare Organizational and Innovation Research (CHOIR), UC Berkeley School of Public Health.

Table 1

Attributed Patients by Payer Contract

Number of Attributed Patients	Medicare (N = 114)	Medicaid (N = 37)	Private (N = 88)
<5,000	0%	19%	21%
5,000–10,000	43%	16%	27%
10,001–20,000	32%	24%	17%
20,001–50,000	20%	38%	27%

Source: The Dartmouth Institute for Health Policy and Clinical Practice, Geisel School of Medicine at Dartmouth; and the Center for Healthcare Organizational and Innovation Research, UC Berkeley School of Public Health, 2014

Table 2

Average quality scores weighted by the group-level response (N) of each measure, 2014 (Measurement year 2013)

Measure	Non-ACO	ACO (no Kaiser)	ACO (with Kaiser)
Access to Care	54.22%	56.93%*	57.85%*
Coordination of Care	57.34%	59.47%*	61.22%*
Promoting Health	60.00%	61.69%*	65.17%*
Doctor-patient interactions	76.50%	79.18%*	79.88%*
Office Staff Helpfulness	68.22%	69.63%*	70.94%*
Overall rating of care	62.09%	65.53%*	66.61%*

*ACO score significantly different from non-ACO score at a 99% confidence level

source: California Healthcare Performance Information System Patient Assessment Survey

Table 3

Comparison of California ACOs with non-California ACOs, 2012–2013

ACO Characteristic	California ACOs (n=15)	Non-California ACOs (n=158)
Total Full-Time Equivalent (FTE) physicians, mean**	609.9	357.8
Percent of primary care physicians, mean	49.7%	56.1%
Number of contracted services (range 0–15), mean**	11.6	8.5
Experience managing physician performance on cost & quality (range 0–5), mean	2.5	2.4
Physician-led, % yes	66.7%	50.0%
Integrated Delivery System, % yes	53.3%	47.5%
Experience with payment reform (range 0–5)*, mean	4.1	3.3

Difference between California and non-California ACOs was significant at the 0.05 level* or 0.01 level**

Source: Author calculations. National Survey of Physician Organizations, Center for Healthcare Organizational and Innovation Research (CHOIR), School of Public Health, UC-Berkeley, 2014.

Table 4

Physician practices participating in ACOs: comparison of California to all other states (Total N=342)

Variable	California n=19	All other states n=323	p-value
PRACTICE SIZE (Mean (SE))[a]	73.5 (80.9)	47.3 (6.9)	0.74
OWNERSHIP (%)[b]			0.32
Physician-owned	94.3%	73.0%	
Hospital or Health System -owned	5.3%	18.7%	
Other	0.4%	8.3%	
SPECIALTY MIX (%)[b]			0.39
100% primary care physicians	73.7	68.8	
Multi-specialty (>=33%–99% primary care)	25.6	20.0	
Specialty (<33% primary care)	0.7	11.3	
IPA Participation (%)[b]	90.8	14.2	0.32
OTHER PRACTICE CHARACTERISTICS (Mean (SE))[a]			
Percent patients speaking limited English	26.3 (1.7)	6.1 (1.1)	<.0001
Percent African American patients	8.3 (0.2)	17.7 (1.7)	<.0001
% Financial risk for hospital costs	7.1 (1.3)	0.9 (0.7)	<.0001
% Revenue from Medicaid and/or poor uninsured patients	11.9 (0.5)	10.4 (2.1)	0.55
PERFORMANCE AND INCENTIVES (Mean (SE))[a]			
Pay for performance index (0–3 points)	2.1 (0.0)	1.3 (0.1)	<.0001
Public reporting index (0–2 points)	1.8 (0.0)	1.0 (0.1)	<.0001
Patient-Centered Medical Home Index (% of 25 point score)[c]	41.4 (2.1)	51.7 (1.1)	<.0001

SOURCE: Author calculations. National Survey of Physician Organizations

[a] t-test using SAS v9.3 proc surveyreg;

[b] Wald chi-square test using SAS v9.3 proc surveyfreq;

[c] Calculated only for physician practices with >=33% primary care physicians.

Table 5

Potential ACO Antitrust Risk Assessment Diagnostic Indicators – Sample Measures

- Percent of patients under risk-based contracts involving downside risk for losses
- ACO is at risk for hospital costs
- ACO meets all quality measures
- ACO scores are high on Patient Centered Medical Home index measures
- Higher primary care physician/specialist ratio
- ACO is Physician Led versus Hospital Led
- ACO does not include a hospital or has no exclusive arrangement with a hospital

Source: Author analysis