

## **Key Themes in the Literature Evaluating ACOs and Accountable Physician Groups**

The Institute for Accountable Care (IAC) and the Council of Accountable Physician Practices (CAPP) have entered a collaboration to develop a proposed future research agenda for accountable care. CAPP has identified five elements as essential to accountable care which include: coordinated care; outcomes-based payment; health information technology; physician leadership and quality improvement. Much of the recent literature on accountable care has focused on accountable care organizations (ACOs). This review covers key aspects of the ACO literature, but we define accountable care more broadly and include some papers examining the performance of organized physician organizations and integrated health systems. We focus on initiatives that aim to improve outcomes for populations with payment models tied to a global budget target. More focused initiatives like episode-based payments, primary care medical home and pay-for-performance programs are not reviewed here. We supplement some findings from the literature with our own observations based on publicly available data on Medicare accountable care programs. We organized this review into seven sections:

- Multi-specialty group characteristics and performance
- Organizational structure and characteristics
- Risk sharing and financial arrangements
- Care redesign initiatives
- Financial performance; and
- Medicare Advantage

We conclude each section by summarizing what we believe to be major gaps in the current research literature that could be considered for a future research agenda.

### **Section 1: Multi-Specialty Group Characteristics and Performance**

Physicians and physician groups are the foundation of accountable care and therefore we begin this review with a brief overview of physician group characteristics. Since 2012 the number of physicians reporting that they are employees rather than owners has grown steadily and in 2018 more physicians were employees than owners. Hospital employment of physicians has also grown rapidly. There have been numerous estimates of hospital employment that vary widely, but it seems likely that the true proportion is somewhere between 35 and 45 percent.

The predominant type of physician group participating in accountable care programs are multi-specialty group practices. According to the American Medical Association about 25 percent of

US physicians worked in multi-specialty groups up from 22 percent in 2012 (Kane 2019). Thirty seven percent of multi-specialty group physicians are in groups of 50 or more physicians versus 7.5% of physicians in single specialty practices. More than half of physicians in multi-specialty groups reported being in a Medicare ACO and half reported being in a commercial ACO compared with about one-third of physicians in single specialty groups (Rama 2019).

There is limited published evidence that independent multi-specialty groups care for patients at lower cost than other types of practices. One study that examined total 2009 Medicare spending per beneficiary found that hospital-based medical groups were 7.5 percent more expensive than small independent groups with 10 or fewer physicians. Larger independent medical groups had costs about one percent lower than small groups. In counties with high penetration of Health Maintenance Organizations (HMO) spending for larger independent groups was 4 percent less than small groups while spending for hospital-based groups was about 9 percent higher (McWilliams 2013).

A recent study by Baker and colleagues examined Medicare patients who switched from a primary care-only group to a multi-specialty group due to a geographic move found a reduction of \$1,600 in total per-beneficiary Medicare spending per year among patients that switched (Baker 2019). A 2010 study compared Medicare patients receiving care from large multispecialty practices associated with the Council of Accountable Physician Practices (CAPP) with patients receiving care from other physicians in the same market and found that patients in CAPP-affiliated practices had slightly lower costs (3.6%) and higher quality (Weeks 2010).

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## Section 2: Organizational Structure and Characteristics

Accountable care programs can be said to have three main elements: a group of medical providers that make up the organizations; a beneficiary population defined by the relationship between the organization's physicians and beneficiaries, and a budget that reflects, at least in part, the historical spending for the ACO's attributed beneficiaries. Beneficiaries are linked to ACOs either through enrollment (in the case of a capitated health maintenance organization) or a statistical assignment formula. In Medicare, ACOs are defined as groups of physician organization tax IDs (TINs). Beneficiaries are assigned to ACOs if they have received the preponderance of their evaluation and management services from an ACO-affiliated physician.

ACOs are often characterized as: physician-led; health system-led; or hybrid organizations. But within these categories the structure and organization of ACOs is extremely diverse. In 2018, 53% of Medicare Shared Savings Program (MSSP) ACOs had at least one hospital (MSSP PUF 2018). The proportion of primary care versus specialist physicians varies significantly. In 2018, 43% of the median ACO's physicians were primary care providers (PCP). The average for the top quartile of ACOs was 79% PCP and the average of the bottom quartiles was 28%. ACOs in the top quartile are smaller and much more likely to be independent of a hospital.

Hospitals and physician practices joining ACOs tend to be larger and have more prior experience with alternative payment models (APMs)<sup>1</sup> than those that do not (Shortell 2018). Physician practices that operate within a larger health system were more likely to participate in APMs when the health systems have higher levels of functional and clinical integration (Ouayogodé 2020). Hospitals initially participating in the MSSP were more likely to have more advanced health information technology and experience with prior CMS care management programs (Chukmaitov 2018). Those participating in the Pioneer ACO program (2-sided risk sharing) tended to be affiliated with centralized health systems and have more physicians in tightly integrated organizational arrangements.

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<sup>1</sup> Here alternative payment models include population-based payment tied to a global budget, variations of that model including partial capitation and episodic payment models like Medicare's bundled payment for care improvement.

Medicare ACOs with a higher proportion of primary care physicians have higher contract penetration defined as the proportion of an ACO's outpatient Medicare revenue coming from ACO-attributed beneficiaries (McWilliams 2018). The 20 percent of MSSP ACOs with the highest proportion of physicians that are PCPs received about 85 percent of their Medicare revenue from serving ACO beneficiaries. In contrast the 20 percent of ACOs with the highest proportion of specialists received less than 45% of revenue through the ACO.

In contrast, the proportion of ambulatory services that beneficiaries receive outside of the ACO (leakage rate) is much higher for primary care dominated ACOs and lower for specialist oriented ACOs. Across all ACOs specialty leakage was 61% to 72% on average, depending on the ACO's start year. This probably overestimates leakage because some of the outside specialist utilization is specialty practices within the same health system that do not participate in the ACO.

Another key organizational issue for Medicare ACOs is the relatively high rates of turnover in attributed beneficiaries from one year to the next. ACOs that entered the program from 2013 and 2015 lost between 17% and 21% of their originally attributed beneficiaries between the first and second program years (MedPAC 2019). MedPAC also demonstrated that continually attributed ACO beneficiaries had much slower rates of spending growth while newly attributed beneficiaries or those that were not attributed in a subsequent year had much higher spending rates. This attribution "churn" is caused by changing patterns of utilization by patients within their local markets and the changing composition of physician groups within ACOs (Hsu 2017). This attribution churn makes it more difficult for ACOs to develop ongoing relationships with beneficiaries and to manage their care effectively.

Although research shows that physician-led ACOs have performed much better in the MSSP than hospital-led ACOs (McWilliams 2019), the factors driving ACO performance have not been documented clearly. One mixed-methods analysis of sixteen MSSP ACOs that were organized around large physician groups found the following factors distinguished between high- and low-performing ACOs: collaboration with hospitals; effective physician group practice prior to ACO engagement; trusted long-standing physician leaders focused on improving performance; sophisticated use of information systems; effective feedback to physicians; and practice-embedded care coordinators (D'Aunno 2018)

Medicare ACOs also rely frequently on partnerships with other providers. Four out of five ACOs surveyed by the Dartmouth Institute have established partnerships specifically for the purpose of entering an ACO program. Organizations that entered ACO programs with pre-existing partnerships tended to have higher quality scores than those partnerships formed specifically for

an ACO programs (Lewis 2017). For example about 25% of ACOs reported a formal contractual arrangement with skilled nursing facilities (Kennedy 2018). More than one-third of ACOs have engaged with management partners that provide back-office administrative support, data analytics, actuarial support and that may share financial risk and rewards under the contracts (Lewis 2018). These management partnerships tend to be more common with smaller physician ACOs and typically exclude hospitals.

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### Section 3: Risk Sharing and Financial Arrangements

Over the past decade, health care organizations have increasingly entered contracts where they face downside risk for “losses” if their spending exceeds a predetermined budget target. The most complete publicly available data on risk-based contracting are from Medicare where more than 550 organizations covering 12 million attributed beneficiaries participate in the Medicare Shared Savings Program (MSSP) or Next Generation ACO (NGACO) program. Since 2012 CMS has offered ACO models with no downside risk for losses, and shared risk models where participants share in both savings and losses. Until recently, only about 15 percent of Medicare ACOs elected to participate in shared risk models. In 2019, CMS modified the MSSP under a new rule called Pathways to Success, which reduced the amount of time organizations could participate without downside risk from 6 years to 2 years. By 2020, about 40% of Medicare ACOs were in shared risk arrangements, although the level of downside risk is modest until ACOs reach their 5<sup>th</sup> program year.

In contrast, very little information is available about risk contracting in commercial and Medicare Advantage contracts. One study estimated that 33 percent of ACOs had at least one contract with downside risk in 2018 and that 20% – 25% had a commercial contract with downside risk (Peck 2019). Those reporting downside risk contracts were likely to be part of an integrated health system and have an average of 1,200 participating physicians, and to have prior experience with other payment reforms like bundled payment or commercial capitation. While respondents to this survey-based study reported the presence or absence of risk contracts, they did not provide information about the size of the contracts or the amount of revenue at risk relative to an organization’s total payment revenue.

Another study measured the share of revenue from seven different payment model arrangements reported by 33 organizations affiliated with the Council of Accountable Physician Practices (CAPP) in 2013. Respondents reported two-thirds of their patient revenue came from fee-for-service on average, while 16% came from global capitation and 7% were payments from the organization's own health plan (Mechanic 2016a). One-third of respondents reported that 97% of revenue was fee-for-service, while another one-third reported only 25% fee-for-service, and 45% was global capitation. Survey respondents were not nationally representative but do provide a profile of the state of payment reform across a sample of high-performing organized medical groups.

Although there is a general lack of information about provider financial arrangements outside of Medicare, the State of Massachusetts requires all payers and major provider groups to provide data on both payment rates and contracting arrangements to its Health Policy Commission and Office of the Attorney General. These data are published annually and provide broad detail for

each major payer and provider. Statistics from Massachusetts are not representative of other areas because of the state's strong commitment to move its health care system towards global payment. In 2018, 56% of commercial provider payments from the three largest regional health plans (approximately 80% market share) were made through risk contracts tied to global budgets. The majority of these payments were made through HMO products while PPO-products remained primarily fee-for-service (Health Policy Commission 2019). National health plans covering Massachusetts enrollees reported much more limited use.

Another area with little published research is how organizations in ACO-type contracts pay their physicians and whether medical groups that take financial risk at the organization level pass some of the financial risk to physicians. One study based on a nationally representative physician survey found that approximately 10% of primary care provider compensation was tied to quality for ACO physicians compared with 1 – 2% for non-ACO physicians. (Ryan 2015). Non-ACO physicians that had financial risk for primary care costs reported a higher proportion of compensation in salary (65%) than other physicians (45%). The study of 33 CAPP medical groups found that primary care physicians in groups whose contracts were primarily fee-for-service had compensation primarily based on productivity, while PCPs in groups with substantial risk contracts received a majority of their compensation based on salary, panel size and performance metrics and only one-third tied to productivity (Mechanic 2016a).

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#### Section 4: Care Redesign

The theory of accountable care is that medical groups and health systems work to redesign the delivery of health care services enabled and incented by payment models that reward efficiency

and high-quality outcomes. Numerous of studies have documented various aspects of care redesign efforts in ACOs. A qualitative study based on interviews with 30 ACOs found that, during their first year in the MSSP, organizations focused on four areas: transforming primary care, reducing avoidable ED use, solidifying and expanding care management, and introducing new “boundary spanner” roles to work across multiple aspects of a patient’s care rather than focusing on direct care delivery in one setting (Lewis 2019). The study found that most ACOs in their early stages are not working aggressively to transform specialty care or coordinate between acute and post-acute.

Another study of medical groups during the first two years of a large commercial global budget contract found that participating organizations initially focused on building infrastructure to help primary care physicians earn quality bonuses and establishing referral management processes to refer more patients within their own provider network and direct patients to lower cost settings (Mechanic 2011). Participants in this program reduced spending by two percent in the first year largely from shifts in outpatient care toward facilities with lower fees, and from lower expenditures for procedures, imaging, and testing (Song 2011).

As ACOs continue in the program many have focused on managing post-acute care. One study found that through June 2015 less than half of ACOs had any formal relationship with skilled nursing facilities (SNFs) but that most organizations within a subset of high-performing ACOs have established preferred skilled nursing facility networks to help manage post-acute care (Kennedy 2018). Medicare ACOs have had success reducing post-acute care spending; those that joined in 2012 achieved statistically significant savings of \$116 per beneficiary in post-acute facility spending that year (McWilliams 2017). The bulk of savings came from SNFs through both reductions in the average number of referrals to SNFs following discharge from the hospital and reductions in SNF length of stay.

Some ACOs are striving to find savings in specialty care services. This may include efforts to better coordinate and integrate care between their own PCPs and specialists. Some also attempt to direct referrals to more efficient specialists or reduce unnecessary specialist referrals. Medicare ACOs with a high proportion of primary care physicians (fewer than 13% of ACO physicians were specialists) generated statistically significant reductions in the average number of specialist visits per beneficiary in the MSSP’s 2012 and 2014 entry cohorts (Barnett 2018). This did not occur with higher proportions of specialist physicians. As mentioned earlier, many ACOs have initiatives to try to make referrals within their own provider network. The inability to maintain primary care services delivered within an ACO’s provider network is associated with higher spending (Lin 2020).

ACOs are investing in other methods to improve care. Eighty percent of ACOs surveyed reported using at least some home-visits with nursing or social work staff to provide transitional care services when patients are transferred from healthcare facilities to home (Fraze 2019). Many ACOs express interest in better addressing their patient’s social determinants of health. Survey data from 2017 and 2018 measured ACO screening programs across five areas: food insecurity, housing instability, utility needs, transportation needs and interpersonal violence, and found that 24% of ACOs screened patients for all five measures (Fraze 2019). Recent qualitative research found that ACOs have faced difficulty integrating social services with medical care. Challenges include lack of data on patients’ social needs and poor understanding of the capabilities of local community social service agencies (Murray 2020). Improving end-of-life care is a seemingly natural target for ACOs looking to reduce wasteful spending. Analysis of Medicare claims data through 2015 found results suggestive of less aggressive care but the effects were small and inconsistent suggesting that ACOs have not yet substantially altered end-of-life care patterns (Gilstrap 2018).

One of the most common strategies to achieve savings is to identify and manage high-risk beneficiaries likely to incur high levels of spending. In the first three years of the MSSP, however, high-risk patients were not responsible for the bulk of savings. In the 2012 entry cohort savings rates were similar for high- and low-risk beneficiaries, while in the 2013 cohort savings were predominantly from low risk beneficiaries (McWilliams 2017). Across the three entry cohorts, only the 2012 cohort generated savings from reducing hospitalizations. This highlights the fact that there is relatively limited information about the impact of specific strategies on ACO savings. Reinforcing that uncertainty, a study linking survey data to Medicare claims data found that Medicare ACOs that self-reported more well-developed care management practices did not outperform other ACOs on either quality or spending outcomes for high-need, high-cost patients (Ouayogode 2019).

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## Section 5: Financial Performance

Numerous studies have measured the financial performance of Medicare ACOs. The current consensus of researchers is that ACOs have reduced Medicare spending by 1 – 2% annually but that some portion of those savings are offset by shared savings bonuses earned by ACOs.

McWilliams (2019) found that ACOs participation in the MSSP in 2012 was associated with statistically significant differential spending of -4.9% by 2015. The results were -3.5% for 2013

entrants and -1.6% for 2014 entrants. Relative reductions grew with longer participation in the program and were significantly greater in physician ACOs than in hospital integrated ACOs. The mean differential change in spending for physician ACOs entering in 2012 was -\$474 per beneficiary versus -\$169 per beneficiary for hospital ACOs. Physician ACOs entering in 2013 and 2014 also reduced spending by -\$342 and -\$156 respectively, while hospital ACOs entering in those years did not achieve statistically significant reductions. Spending reductions in physician-group ACOs constituted a net savings to Medicare of \$256.4 million in 2015, whereas spending reductions in hospital-integrated ACOs were offset by bonus payments. This study is based on an intent to treat design and the results are therefore not influenced by changes in the composition of ACO physicians after the initial year of entry.

Other studies suggest Medicare ACO program savings of similar magnitude. An analysis of Medicare's Pioneer ACO program found differential spending of -3.8% in 2012 and -1.2% in 2013 (Nyweide 2015). An analysis of the MSSP by MedPAC (2019) reported savings of 1 – 2% in 2016. A consultant report released in 2019 estimated the MSSP program saved \$3.5 billion from 2013 – 2017 and generated net savings of \$755 million after accounting for shared savings payments to ACOs (Dobson|Davanzo 2019). A government-sponsored evaluation of the first two years of the Medicare Next Generation ACO program found gross savings of \$123 million but a total increase in net program spending after accounting for shared savings payments (Lowell 2020).

One study of the MSSP concluded that savings through 2014 were primarily due to non-random exit of higher cost physicians (Markovitz 2019) but that result is inconsistent with the findings and study design of McWilliams (2019). A more recent analysis found no evidence that changes in ACO patient populations explain savings estimates from previous evaluations through 2015, and no evidence that ACOs systematically manipulated provider composition or billing to earn bonuses (McWilliams 2020).

A 2019 systematic review of research on the impact of ACOs on utilization, care and outcomes found that the most common impacts of ACO implementation on outcomes were reduced inpatient use, reduced emergency department visits, and improved measures of preventive care and chronic disease management (Kaufman 2019). The study included 29 quantitative peer-reviewed studies. Seventeen focused on Medicare programs, nine on commercial programs, one on Medicaid and two on multiple payers. Of the nine commercial ACO studies, seven examined the Blue Cross Alternative Quality Contract (AQC) in Massachusetts. The other two commercial studies were small and ranked of relatively low quality by the authors. This underscores the paucity of information about commercial ACO programs.

The Blue Cross AQC is the most comprehensively studied commercial ACO contract and its impact has been evaluated over an eight-year period. During the 8-year post-intervention period from 2009 to 2016, the relative savings on medical claims was 11.7% for organizations that entered the AQC in 2009 (Song 2019). These savings were driven in the early years by lower prices (due to shifts in site of service) and in the later years by lower utilization of services, including use of laboratory testing, certain imaging tests, and emergency department visits. Most quality measures of processes and outcomes improved more in the AQC cohorts than they did in New England and the nation in unadjusted analyses. Savings were generally larger among subpopulations that were enrolled longer. Enrollees of organizations that entered the AQC in 2010, 2011, and 2012 had medical claims savings of 11.9%, 6.9%, and 2.3%, respectively, by 2016. In the later years of the initial AQC cohorts and across the years of the later-entry cohorts, the savings on claims exceeded incentive payments, which included quality bonuses and providers' share of the savings below spending targets.

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## Section 6: Medicare Advantage

Medicare Advantage (MA) puts participants, in this case insurance companies, at risk for the total cost of care. MA plans, in turn, contract with providers to deliver services for enrolled members. Unlike ACOs, MA plans can establish designated provider networks that limit beneficiary choice of providers or offer supplemental benefits like dental and vision care that are not covered under traditional Medicare. There has been controversy over the ‘success’ of this model, with many early studies showing the program to be cost increasing. After changes to the model, such as the addition of risk adjustment and reductions in benchmarks intend to bring parity between fee-for-service and Medicare Advantage payments, some studies have found the Medicare Advantage plans have achieved similar quality to traditional Medicare at a lower cost (Newhouse et al., 2014; 2019).

MA has long had lower utilization, such as shorter lengths of stay in skilled nursing facilities and lower admissions rates to acute care hospitals (Parashuram et al, 2018) and rehabilitation facility compared with traditional Medicare. One recent study found that MA beneficiaries are admitted to larger, higher quality SNFs (Jung et al., 2018). MA enrollees also appear to have lower hospital readmissions and fewer SNF admissions with no differences in mortality (Huckfeldt 2017, Kumar 2018). However, one recent study finds that MA drives down the use of both ‘high-value’ and ‘low value’ services with little impact on prices (Curto et al., 2019).

It has long been suspected that MA plans generate adverse selection by working to enroll younger, healthier beneficiaries. The addition of risk adjusted premiums in the early 2000s was intended specifically to encourage enrollment of sicker beneficiaries. Joseph Newhouse and colleagues (2014) found that risk adjustment mitigated selection problems. However, in a more recent study, Beveridge (2017) found that MA beneficiaries had lower mortality rates than would be expected for patients with similar risk scores in traditional Medicare. As MA enrollment is approaching 40% of beneficiaries, differences in race, ethnicity, and socio-economic characters of MA enrollees and FFS beneficiaries have diminished, with some studies showing MA plans attracting higher share of lower income enrollees (Medpac).

Despite CMS regulation of many aspects of MA, such as the actuarial value of the plan, premiums and quality expectations, very little is known about the operational details of MA plans and the payment arrangements between plans and providers. According to the Health Care Payment and Learning Action Network (HCPLAN), which surveys health plans to determine the share of payments in value-based models, Medicare Advantage as a payer has the highest share of payments in more advanced APMs, with 53.6% in APMs in 2018. CMS requires that MA plans pay out-of-network hospitals at traditional Medicare rates, increasing their ability to control hospital spending. In fact, Lawrence Baker and colleagues (2016) found that MA plans

pay hospitals 6 to 8 percent less than FFS Medicare, suggesting a price effect. However, in a recent study of physician fees, Pelech (2020) finds that prices for 20 physician services are similar for MA and FFS Medicare. This pattern carries over to in-network commercial insurance, but not out-of-network services where prices can be much higher. Trish and colleagues (2017) support this finding, showing small reductions in price for physicians in MA relative to FFS Medicare. They also observe an MA price reduction for durable medical equipment.

In terms of quality, Welch and colleagues (2019) find that MA plans where the physicians work almost exclusively with MA beneficiaries have higher quality than plans where each physician sees a limited number of MA beneficiaries. This suggests that physician alignment is a driver of plan success, but this is an area that warrants further research. Others have touted MA quality, such as a 2019 study by Jose Figueroa that found MA patients with Coronary Artery Disease (CAD) were more likely to receive secondary prevention services and had higher odds of receiving guideline-recommended therapy than traditional Medicare beneficiaries. Similarly, Esse (2013) finds physicians who were part of a Quality Compensation Program through a Medicare Advantage plan were more likely to provide heart failure patients all of the necessary lab tests, as well as the flu vaccine. There are no published studies comparing the quality of care within MA to Medicare ACOs.

Despite a large volume of research, much controversy remains in terms of the overall effectiveness of the MA model when it comes to overall value – cost performance for a given level of quality. This is partly a result of limited access to encounter data. However, even plan design information was only recently made publicly available. CMS has made MA encounters available for research, but the data are quite lagged with serious quality issues. Even less is known about how hospitals, physicians and other suppliers are paid within MA plans. While several reports suggest Medicare Advantage plans are more likely than other types of health plans to utilize ACO-type contracts that include downside risk (including full capitation) the level of detail is limited, and quality of health plan reporting is unknown. Relative quality of care provided under MA programs is also poorly understood, both because the star rating methodology uses a limited set of measures and a complex scoring methodology and because limited research on MA compared to other value-based payment models or FFS Medicare.

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