



Overview of Research on ACO Performance

Introduction

The Medicare Shared Savings Program (MSSP) has grown and evolved considerably since its inception in 2012, and many policymakers and health industry leaders view the ACO model as a promising solution for the significant challenges facing Medicare as tens of millions more beneficiaries enter the program over the next 15 years. As the MSSP continues to grow, it is important to reflect on the effect of ACOs on Medicare, including the impact on beneficiary care, health outcomes, quality, utilization, cost, and overall savings/losses to the program. While few dispute the need to evaluate the MSSP, there are differing opinions and approaches on how to best analyze the program.

In terms of evaluating the “success” of the ACO program, there is a growing consensus that Medicare benchmarks are not the appropriate yardstick against which to measure ACO performance. Instead, skilled evaluators are comparing ACOs to providers not in ACOs, comparing ACO spending over time, and considering other effects of the program (e.g., spillover effects on other programs within Medicare such as Medicare Advantage or effects beyond Medicare).

The transition to value-based payment is expected to take years, and it’s critical that there be careful evaluations, such as the studies below, on the true effects of ACOs and other value-based payment programs. However, there remain many unanswered questions such as how to appropriately account for the significant investments ACOs make up front and understanding the tension between short-term spending (to invest in things like quality and care coordination) and long-term savings. Further research is expected moving forward, which will help shed light on the true effects of ACOs on Medicare, beneficiaries, and the healthcare industry. Share your research questions or additional studies with NAACOS by emailing advocacy@naacos.com.

This resource summarizes some of the key quantitative studies that contribute to our understanding about the positive effect of ACOs. Articles are listed in date order, with the most recent studies first.

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Summary of Key ACO Studies

Estimates of Savings by Medicare Shared Savings Program Accountable Care Organizations: Program Financial Performance 2013-2015.

Authors(s): Allen Dobson, Sarmistha Pal, Alex Hartzman, Luis Arzaluz, Kimberly Rhodes, Joan DaVanzo

Publication Source / Date: Self-published / August 2018

Link: https://www.naacos.com/assets/docs/pdf/Study_of_MSSP_Savings_2012-2015.pdf

Data sources used for evaluation: Medicare fee-for-service claims, 2011-2015

Focus: MSSP ACOs

Overview:

The Centers for Medicare & Medicaid Services (CMS) calculates savings based on a benchmarking methodology where actual spending is compared with targets based on each ACO’s historical spending trended forward using the national average rate of growth in Medicare spending per beneficiary. However, this approach may systematically underestimate saving. To address this problem, authors from Dobson|DaVanzo conducted a study using an analytic sample with claims for 100 percent of ACO-attributed beneficiaries and a comparison group of roughly 90 percent of Medicare FFS beneficiaries who were eligible

to be assigned to an ACO but were not assigned because they did not receive a majority of their care from an ACO.

Findings:

The authors find that ACOs in the MSSP generated savings of \$1.84 billion during performance years 2013-2015, or nearly twice the \$954 million in savings estimated by the CMS benchmarking methodology. Further, the MSSP generated net savings of \$541.7 million from 2013-2015 after accounting for shared savings bonuses earned by ACOs.

Conclusions:

MSSP ACOs appear to be consistently saving money for CMS, despite no down-side or limited down-side risk. The CMS administrative payment and savings estimates balance competing priorities do not accurately reflect ACO savings and produce incorrect inferences for interested stakeholders, including state and federal policy makers. There is more to learn on sub-groups within the MSSP in terms of organizational arrangements and populations that do well.

Medicare Spending After Three Years of the Medicare Shared Savings Program

Author(s): J Michael McWilliams, Laura Hatfield, Bruce Landon, Pasha Hamed, Michael Chernew

Publication Source / Date: New England Journal of Medicine/September 2018

Link: *not publically available*

Data Source Used for Evaluation: Medicare claims 2009-2015.

Focus: MSSP ACOs

Overview:

Although MSSP ACOs have incentives to reduce costs and improve quality, little is known about savings patterns over time, including the extent to which savings are maintained and whether or not new entrants are able to emulate the savings of early cohorts.

Summary of Key Findings:

Using Medicare fee-for-service claims data, McWilliams and his team performed a difference-in-difference analysis to compare spending for beneficiaries before and after entry into the MSSP program with spending for a comparison group of beneficiaries outside of the MSSP program. The authors found significant savings by ACO cohort: for physician lead groups that entered in 2012, -\$474; for those who entered in 2013, -\$342 and for those entering in 2014, -\$156 per assigned beneficiary. The figures for hospital-integrated ACOs were -\$169, -\$18, and \$88 respectively. For physician-group lead ACOs, the net savings to Medicare was \$256.4 million dollars. For hospital-affiliated ACOs, spending reductions were off-set of bonus payments.

Conclusions:

After 3 years of participation in the MSSP, physician-group lead ACOs generated savings that grew over time. Hospital-integrated MSSP ACOs, on the other hand, did not produce savings during the same period.

Oregon's Emphasis on Equity Shows Signs of Early Success for Black and American Indian Medicaid Enrollees

Author(s): K. John McConnell, Christina J. Charlesworth, Thomas H. A. Meath, Rani M. George, and Hyunjee Kim

Publication Source / Date: Health Affairs / March 2018

Link: <https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2017.1282?journalCode=hlthaff>

Data Source Used for Evaluation: Claims data on Oregon Medicaid enrollees during January 2010-December 2014.

Overview

The delivery of Oregon's Medicaid program changed in 2012 to provide coverage through sixteen Coordinated Care Organizations (CCOs). The state prioritized reducing health disparities for the CCOs; To address this challenge, the CCOs implemented a multipronged approach which included community health workers, Regional Health Equity Coalitions, and strategic planning.

Summary of key findings:

Prior to the Medicaid transformation, black enrollees were found to have 14 percent lower rates for primary care visits and 11 percent lower for outpatient visits when compared to white enrollees. The study found black enrollees when compared to white enrollees had significantly higher ED visit rates (31 percent for potentially avoidable ED visits and 27 percent higher for overall ED visits). American Indian/Alaska Native's experienced similar disparities as black enrollees but at a smaller magnitude.

After the Medicaid transformation efforts, the disparities between black and white enrollees narrowed significantly. In primary care visits, the difference between black and white enrollees represented a 36 percent reduction compared to the pre-intervention disparity. For potentially avoidable ED and overall ED visits, no significant differences were found. American Indian/Alaska Native's experienced a similar narrowing, with reductions in primary care and outpatient visits but no significant changes in ED visits.

Conclusion:

The CCOs' efforts towards health equity was associated with reduced disparities in primary care visits and white-black differences in access to care. In emergency department use, there was no change found and higher visit rates remaining among black and American Indian/Alaska Native beneficiaries when compared to whites. The authors conclude that States that encourage payers and health systems to prioritize health equity could reduce racial and ethnic disparities across certain measures among their Medicaid beneficiaries.

What Predictive Analytics Can Tell Us About Key Drivers of MSSP Results

Author(s): Jill S. Herbold, Anders Larson, and Cory Gusland

Publication Source / Date: Milliman White Paper / September 2017

Link: <http://www.milliman.com/insight/2017/What-predictive-analytics-can-tell-us-about-key-drivers-of-MSSP-results/>

Data Source Used for Evaluation: 2015 MSSP Public Use File. Quality metric information from 2015 MSSP ACO Performance Results; Fee-for-service trends estimated from the CMS 2015 FFS Data; and Physician-led ACOs identified by data provided by Leavitt Partners.

Overview

The Medicare Shared Savings Program (MSSP) has been around for almost five years, furthering the importance to begin understanding the results of the program. As the program looks ahead, identifying ACO characteristics and the drivers of savings becomes even more important to inform future efforts.

Summary of key findings:

The study looks at 190 objective ACO features to identify and rank which were most identified with gross savings/losses in the third performance year (2015) of the MSSP. From those range of variables, six were strongly associated with gross savings, which include: 1) High baseline year 1 per capita expenditures, 2) National trends higher than local market Medicare fee-for-service (FFS), 3) Located in the Southeast or South Central CMS geographical regions, 4) low annual expenditures for short-term inpatient admissions, 5) High baseline year 3 per capita expenditures for aged/non-dual beneficiaries, and 6) High baseline year 3 average CMS-Hierarchical Condition Category risk score for aged/non-dual beneficiaries.

Conclusion:

More than half of the gross savings/losses are not explainable by the features studied and only one of the six features associated with savings was influenced by an ACO during the performance year. This concludes that ACO population health and operational improvement efforts can have a material impact on savings and success in the program.

Following this 2015 analysis, there were three main changes to the MSSP financial benchmarking methodology between 2016 and 2018. The authors anticipate those changes will result in baseline year expenditures and local Medicare FFS trends to become less predictive of gross savings. On the other hand, higher morbidity in the baseline period and low annual expenditures for short-term inpatient admissions will continue to be associated with gross savings despite the change in policy. The shifts toward local market trends and regional efficiency adjustments make it difficult to assess whether ACOs in the Southeast and South-Central CMS regions will continue to achieve higher gross savings than comparable ACOs.

Medicare Shared Savings Program Accountable Care Organizations Have Shown Potential for Reducing Spending and Improving Quality

Author(s): Office of Inspector General

Publication Source / Date: Office of Inspector General / August 2017

Link: <https://oig.hhs.gov/oei/reports/oei-02-15-00450.asp>

Data Source Used for Evaluation: Medicare claims: MSSP Performance Year Results, Spending and utilization data, provider and beneficiary data, and summary data on FFS spending and utilization between 2010-2015.

Overview

Medicare spending is expected to grow to \$1.4 trillion by 2027. The Office of Inspector General (OIG) conducted research into one of the largest alternative payment models, the Medicare Shared Savings program, to provide insight into the extent which ACOs are able to reduce Medicare spending and improve quality. Researchers analyzed beneficiary, provider, spending, quality, and utilization Medicare data during the first three years of the Shared Savings program.

Summary of key findings:

Reviewing the first three years of the Shared Savings Program, the study found that the 428 participating ACOs improved performance on 82 percent of individual quality measures while serving 9.7 million beneficiaries. The ACOs also outperformed fee-for-service providers on 81 percent of the quality measures. During this time, ACOs reduced Medicare spending compared to their benchmarks, achieving a net spending reduction of nearly \$1 billion. Additionally, a subset of ACOs were able to reduce spending by an average of \$673 per beneficiary while providing high-quality care.

Conclusion:

The study concludes that time may be needed for organizations to make changes to improve quality and lower costs. ACOs show promise in reducing spending and improving quality and more information about the high-performing ACOs is needed to inform the future direction of the program.

Association Between Medicare Accountable Care Organization Implementation and Spending Among Clinically Vulnerable Beneficiaries

Author(s): Carrie H. Colla, PhD; Valerie A. Lewis, PhD; Lee-Sien Kao, BA; A. James O'Malley, PhD; Chiang-Hua Chang, PhD, MS; Elliot S. Fisher, MD, MPH

Publication Source / Date: Journal of the American Medical Association / June 20, 2016

Link: <https://www.ncbi.nlm.nih.gov/pubmed/27322485>

Data Source Used for Evaluation: Medicare Claims, 2009 – 2013

Overview:

The study looks at the effect of Medicare ACOs on spending and high-cost institutional use for all Medicare beneficiaries and for clinically vulnerable beneficiaries. The study found that spending in both groups was reduced when beneficiaries were treated by ACO providers compared to non-ACO providers.

Summary of Methodology and Key Findings:

The researchers used five years (2009 – 2013) of all Part A and Part B Medicare Fee for Service (FFS) claims data to compare spending and usage of beneficiaries cared for by ACO physicians to those cared for by non-ACO physicians. There were two study populations, one representing overall Medicare beneficiaries and the second representing clinically vulnerable beneficiaries. Clinically vulnerable was defined as age 66 or older with at least three Hierarchical Condition Categories (HCCS).

Findings from this study showed that the total spending decreased by \$34 per beneficiary-quarter after ACO implementation in the overall Medicare population and by \$114 per beneficiary-quarter in clinically vulnerable patients. The authors also observed a 1.3 percent reduction in hospital spending and a 5 percent

reduction in skilled nursing spending, as well as significant reductions in emergency department use and hospitalizations. The date an ACO started in the MSSP did not affect these reductions but the authors noticed a slight increase in spending with longer ACO participation. The authors also observed an anticipatory effect of participating in an ACO, which could lower benchmark spending and make it more difficult to achieve savings according to CMS calculations.

Conclusions:

The results show that the ACO model has early modest reductions in spending and high-cost institutional use for patients with multiple clinical conditions. More longer-term research is needed to fully understand the structural changes that will take more time to demonstrate savings and improved health care outcomes.

Early Performance of Accountable Care Organizations in Medicare

Author(s): J. Michael McWilliams, MD, PhD, Laura A. Hatfield, PhD, Michael E. Chernew, PhD, Bruce E. Landon, MD, MBA, and Aaron L. Schwartz, PhD

Publication Source / Date: New England Journal of Medicine / June 16, 2016

Link: <http://www.nejm.org/doi/full/10.1056/NEJMsa1600142#t=article>

Data Source Used for Evaluation: Medicare Claims, 2009 – 2013

Overview:

The MSSP shares savings with ACOs if spending is below a financial benchmark by more than a certain threshold, known as the Minimum Savings Rate (MSR), and provided the ACO meets other criteria. CMS sets the financial benchmark based on risk adjusted average Part A and B Medicare per capita expenditures for FFS beneficiaries. The benchmark is modified and updated annually during a contract period and is rebased at the start of a new contract period.

Summary of Methodology and Key Findings:

Medicare claims from 2008 through 2013 were analyzed for a 20 percent sample of FFS beneficiaries. For each study year, beneficiaries were included in the study if they were continuously enrolled in both the current and previous year. The control group included beneficiaries attributed to non-ACO providers. The study also categorized MSSP ACOs into organizational type (integrated with hospitals, independent multispecialty physician groups, or independent physician groups).

The study results showed that MSSP participants were associated with early savings among ACOs that entered the program in 2012 compared to those who began in 2013. When comparing organizational type, savings were also found to be greater for independent physician group practices than those practices integrated with hospitals.

Conclusions:

The findings show early Medicare spending reductions for ACOs that started in 2012 compared to those ACOs that started in 2013. However, results suggest that gains achieved early for MSSP participants may not generalize to later cohorts.

Changes in Medicare Shared Savings Program Savings from 2013 to 2014

Author(s): J. Michael McWilliams, MD, PhD

Publication Source / Date: Journal of the American Medical Association / Research Letter / September 9, 2016

Link: <http://jamanetwork.com/journals/jama/fullarticle/2552452>

Data Source Used for Evaluation: Medicare Claims, 2009 – 2014

Overview:

In the first full year (2013) of the MSSP, modest spending reductions were offset by shared saving payments. MSSP ACOs are eligible for shared saving payments if spending is below a financial benchmark and the ACO meets other criteria.

Summary of Methodology and Key Findings:

Medicare claims data from 2009 to 2014 were analyzed, comparing a MSSP cohort by start year and a random 20 percent sample of FFS beneficiaries. A regression model was used to compare changes in the ACO-attributed beneficiaries from before and after the start of the ACO contracts to the non-ACO attributed beneficiaries (control group).

Comparing the 2012 cohort with the control group, the researchers found spending reductions increased significantly between 2013 to 2014. In the 2013 cohort, estimated spending reductions also significantly changed from 2013 to 2014. In 2013, shared saving payments exceeded spending reductions, but in 2014 spending reductions exceeded shared saving payments across all three MSSP cohort years, saving Medicare \$287 million in net savings or \$67 per ACO-attributed beneficiary.

Conclusions:

By 2014, spending reductions in the MSSP had exceeded shared saving payments demonstrating early signs that this is a fiscally viable alternative payment model. Additionally, findings from subgroup analysis suggest that physician-hospital integration may not be required for ACOs to be successful.

Savings from ACOs – Building on Early Success

Author(s): J. Michael McWilliams, MD, PhD

Publication Source / Date: Annals of Internal Medicine / Ideas and Opinions / October 11, 2016

Link: <http://annals.org/aim/article/2566329/savings-from-acos-building-early-success>

Data source used for evaluation: References data from other journal articles, including *Early Performance of ACOs in Medicare* and *Changes in Medicare Shared Savings Program Savings*, which are summarized above.

Overview:

The MSSP represents the largest new payment model implemented by CMS and is a leading reason why the Department of Health and Human Services' goal of moving half of Medicare payments away from FFS by 2018 remains possible. Expectations of instant savings from the MSSP were unrealistic, especially

considering ACOs are redesigning their care systems and learning which cost-cutting strategies are most effective.

Summary of Methodology and Key Findings:

Recent estimates have found that MSSP ACOs have nearly doubled their spending reductions from 2013 to 2014 (from 0.8 percent to 1.5 percent, respectively) creating a net savings of \$287 million to Medicare. Although the net savings amount to just 0.7 percent of total spending for MSSP beneficiaries, actual savings to Medicare are grossly underestimated by both CMS and formal evaluations because ACO spending reductions indirectly affect Medicare spending in the following ways:

- 1) Provider responses to ACO contracts probably also affect care to non-attributed patients
- 2) ACO spending reductions—regardless of offsetting bonuses—reduce ACO benchmarks because they lower spending growth rates which are used to update the benchmarks each year;
- 3) Spending reductions by ACOs similarly lower Medicare Advantage (MA) spending because MA plans are directly tied to local FFS spending.

Thus, the 2014 MSSP actual net savings to Medicare were closer to \$685 million or 1.6 percent of spending for MSSP beneficiaries.

Conclusions:

Recognition of the full and growing savings produced by the MSSP underscores the importance of encouraging program participation and understanding for key policy decisions. The authors remind that health care system reform is slow and incremental and that great strides are possible over time but require tradeoffs between short-term gains and long-term success.

Little Evidence Exists to Support the Expectation that Providers Would Consolidate to Enter New Payment Models

Author(s): Hanna T. Neprash; J. Michael McWilliams, MD, PhD

Publication Source / Date: Health Affairs / February 2017

Link: <http://content.healthaffairs.org/content/36/2/346.abstract>

Data Source Used for Evaluation: Medicare Claims, 2008 – 2013

Overview:

Stakeholders and policymakers are concerned that payment reform, such as the ACO model, could accelerate provider consolidation by incentivizing physician groups to merge with hospitals in order to bear financial risk for the total continuum of care of beneficiaries. During the years studied there was an increase in consolidation, but there is little evidence to suggest that this was due to adoption of ACOs and consolidation was well underway prior to authorization of the MSSP and Pioneer ACO programs.

Summary of Methodology and Key Findings:

The authors looked at the relationship between MSSP and Pioneer ACO participation and multiple measures of horizontal and vertical consolidation from before (2008 – 2010) and after (2011 – 2013) the Medicare Shared Savings Program was permanently authorized. The researchers did this by first identifying beneficiaries that were cared for by ACOs and those that were not. Next, they measured physician-hospital integration by examining place-of-service codes to determine where treatment was occurring. Throughout

the study, each physician's share of claims in a hospital-owned practice, compared to an office setting, was determined.

Between 2008 – 2013 for the average metropolitan statistical area, physician hospital integration increased by 6.3 percentage points (from 16.8 percent of physicians in a hospital-owned practice to 23.1 percent). Physician concentration, physician group size, hospital concentration, and inpatient and outpatient price indices all also experienced a statistically significant increase. The changes however were minimal between the pre-Affordable Care Act period, 2008 – 2010, and the post period, 2011 – 2013. Also, markets with greater ACO participation in 2014 did not experience differential changes in physician-hospital integration, physician group size, or commercial prices.

Conclusions:

The researchers found that consolidation was under way before the ACO programs were established. The researchers conclude that payment reform has been associated with little acceleration in consolidation in addition to trends already under way, but there is evidence of potential defensive consolidation in response to new payment models.

A Multilevel Analysis of Patient Engagement and Patient-Reported Outcomes in Primary Care Practices of Accountable Care Organizations

Author(s): Stephen Shortell, Bing Ying Poon, Patricia Ramsay, Hector Rodriguez, Susan Ivey, Thomas Huber, Jeremy Rich

Publication Source / Date: Journal of General Internal Medicine / February 3, 2017

Link: <https://link.springer.com/article/10.1007/s11606-016-3980-z>

Data source used for evaluation: observational study of 16 randomly selected practices in two large ACOs.

Overview:

In 2011, 46 million Americans have been diagnosed with cardiovascular disease (CVD), diabetes, or both, representing a combined healthcare cost of \$354 annually. The need for primary care practices that effectively engage patients is increasing with the greater number of chronic illnesses and the movement towards more accountable care delivery.

Summary of Methodology and Key Findings:

The study randomly selected 16 practices within two ACOs, Advocate Health Care in Chicago and DaVita HealthCare Partners in Los Angeles. Patients were randomly selected to take a patient activation survey based on those who had diabetes and/or CVD and who met study eligibility criteria. Primary care team members from the participating practices also completed surveys on practice culture, relational coordination, and teamwork.

The study found that patients who received care from teams with more developed patient-centered cultures were significantly more likely to score above the median on the Patient Health Questionnaire-4 (PHQ-4) assessment on having fewer depression symptoms (better scores on the PHQ-4 assessment) and above the median on better physical health scores. Also, patients reporting better assessment of their chronic illness care were significantly more likely to score above the median on the PHQ-4 assessment,

reporting fewer depression symptoms, and have above-median physical health scores and above-median social health scores.

Conclusions:

The study found that diabetic and CVD patients from ACO-affiliated practices had lower depression scores and better physical functioning. Patients who were more activated in participating in their care also reported lower depression scores and improved social and physical outcomes.