FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

ACO SUCCESS FACTORS IN THE MEDICARE SHARED SAVINGS PROGRAM

A LONGITUDINAL STUDY, 2016 - 2020

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF BUSINESS ADMINISTRATION

by

Marc Love

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To: Dean William G. Hardin III
College of Business

This dissertation, written by Marc Love, and entitled ACS Success Factors in the Medicare Shared Savings Programa A Longitudinal Study, 2016-2020, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Date of Defense: June 12, 2023

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Florida International University, 2023

DEDICATION

I am proof that it takes a village to raise a child. This dissertation is dedicated to my village. First, this dissertation is dedicated to my parents Alfred and Everjoy Love. My mother died when I was three and my father when I was seventeen so neither saw me graduate from high school. My father was a World War II veteran who could not read or write, but he always encouraged me to get a good education. Hopefully, this accomplishment makes their stars shine brighter from heaven.

This dissertation is also dedicated to my Aunt Sallie Mae Knight. She raised me after my mother died and she was my elementary school principal. She was the first to instill in me the value of education. She always encouraged me to "climb until my dreams come true." Hopefully, this dissertation makes her star shine brighter in heaven, as well.

This dissertation is dedicated to my sister, Annie Rodgers Miller. She stepped up and raised me as her own child after my mother passed and she has always been my biggest cheerleader. Whenever I need encouragement, I can always depend on her. Her investment in me is unmatched and I could never repay the debt of love I owe to her but hopefully this accomplishment is an acceptable down payment. I also want to acknowledge my two brothers, Vincent Rodgers and James "Bumpy" Rodgers. They passed away way too early but they made an indelible mark on my life.

I am a living example that a woman can raise a man because after the passing of my mother, her sisters: Sallie Mae Knight, Arey Jones, Merrie Thornton, and Octavia Perkins came together to raise her son. All of them made positive contributions to my

personal and academic development. In addition, Orlando Jones, my cousin, taught me manhood at a young age and continues to be a great mentor.

Prior to embarking on this journey at Florida International University to obtain my Doctor of Business Administration degree, I earned degrees from Talladega College and Howard University in Chemistry and Business, respectively. But I credit my grandfather, the late Aaron Thornton, for first introducing me to business and finance. At Taylor Chapel Christian Methodist Episcopal Church where he appointed me as the first Junior Steward, I learned to raise money, prepare financial reports, present financial reports, and manage the political landscape of a church business. He truly provided the first building blocks to my business acumen.

Lastly, I dedicate this dissertation to my loving wife, Sherell, and my two sons, Erik and Langston. Sherell has been rock solid in her support for me throughout this program. She manages the house and kids when I am consumed with work and school. I could not have completed this program without their support.

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I thank my current employer, Kaiser Permanente, for providing a great work environment and supporting me as I completed my coursework and dissertation. Kaiser Permanente has made me a better executive and I appreciate the support and time accommodations they afforded me during this process.

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ABSTRACT OF THE DISSERTATION

ACO SUCCESS FACTORS IN THE MEDICARE SHARED SAVINGS PROGRAM

A LONGITUDINAL STUDY, 2016-2020

by

Marc Love

Florida International University, 2023

Miami, Florida

Professor George Marakas, Major Professor

This is a longitudinal study that identifies the critical factors impacting Accountable Care Organizations' (ACO) success in the Medicare Shared Savings Program (MSSP). The study was performed using secondary data - The Center for Medicare and Medicaid Services (CMS), Performance Year Financial and Quality Results Public Use Files (PUF). The MSSP offers providers and suppliers an opportunity to create an ACO. An ACO agrees to be held accountable for the quality, cost, and experience of care of an assigned Medicare fee-for-service (FFS) beneficiary population.

The dependent variable is incentive payout mediated by financial performance. The independent variables are quality of care, size, patient satisfaction, primary care visits, and reimbursement track. The moderators are level of sickness, years of participation, and high need beneficiaries. The methodology included combining the PUFs for 2016 through 2020 into one working file. Rigorous data clean-up was performed in Microsoft Excel to achieve data consistency and reliability. SPSS was used to perform statistical analyses, including computing variables, linear regressions, and forward stepwise regressions.

The results found that all the direct effects and moderating interactions were significant but the relationship between size and financial performance was the strongest. After a forward stepwise regression was performed on the entire model, quality also emerged as a strong success factor. A deeper dive into size was performed to determine whether success factors varied based on the size of the ACO. It was confirmed that success factors varied based on the size of the ACO, but quality and size were fairly consistent across groups.

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CHAPTER 1

Introduction

"The care setting with the greatest potential to impact the quality of care is the primary care setting. Comprehensive primary care has long been recognized as the cornerstone of a high-performance health system" (Cross, Cohen, Lemak, Alder-Milstein, 2017). In response to rising healthcare costs and inconsistent quality performance, strengthening primary care is a critical part of the US health policy agenda. A specific target is to improve care for patients with the greatest healthcare needs: those with complex conditions, multiple chronic illnesses, and mental health disorders. Such high need patients use a disproportionate share of health services, and the nature of their care needs provides opportunities for increased efficiency, quality improvement, and associated cost savings.

Primary care is the foundation of the healthcare delivery system in America. It includes office visits, preventive screenings, vaccinations, treatment for minor conditions and management of chronic conditions like diabetes. It is usually the role of the primary care physician (PCP) to refer a patient to specialists for more specialized care, including endocrinologist, cardiologist, and urologist to name a few. The primary care physician may also refer a patient to inpatient and outpatient facilities for certain procedures and diagnostic tests. So, the role of the primary care physician is broad but very important to the general health of a population.

In addition to managing health, primary care physicians are also integral to managing the overall cost of care. By engaging patients in care, PCPs can detect certain diagnoses early and reduce or eliminate the need for more costly services. For example, if a PCP diagnoses a patient with diabetes early by checking their blood pressure and blood sugar levels, the PCP may be able to educate the patient on their condition, suggest lifestyle changes like diet and exercise, prescribe medication, and develop a treatment plan for the patient. By doing these things the PCP may prevent unnecessary hospitalizations, emergency room visits, and surgical procedures associated with uncontrolled diabetes. Effective management of

chronic conditions, like diabetes, reduces emergency room visits, hospitalizations, and readmissions - thereby reducing cost to the payer (Medicare, Medicaid, and health insurance plans).

PCPs are usually paid fee for service (FFS), meaning they receive a fixed fee for each service they provide. FFS is the predominant payment methodology in healthcare but the industry continues to develop and test new reimbursement methodologies because FFS inherently encourages physicians to provide more care because the more services they provide the more they are paid, thereby driving up total healthcare costs.

"Primary care physicians will need to transform their clinical practice and assume more fiduciary risk" (Mandal, Tagomori, Felix, Howell 2017). One way to do this is to participate in advanced payment models (APM). An APM broadly can be defined as any reimbursement model other than strict fee-for-service (FFS). "Clinicians who want to become qualifying APM participants can expect to bear more than a nominal amount of risk for monetary losses. Through APMs and increasing risk assumptions, these new policies aspire to promulgate high-value healthcare, as defined by better care, smarter spending, and healthier people" (Mandal et. al, 2017). Advanced payment models include, but are not limited to, Pay for Performance (P4P) and Value Based Contracts (VBC).

"To promote new approaches to primary care that improve outcomes for high-need patients, an array of quality improvement initiatives has proliferated in recent years. Growing evidence indicates that these efforts can reduce medical expenditures and increase quality of care. However, evidence is still emerging about what is required for these efforts to actually result in improved performance" (Cross et. al., 2017). This, in part, supports the theory that factors like quality, size, reimbursement, patient satisfaction, and level of sickness may influence financial performance for providers in value-based arrangements.

The Medicare Shared Savings Program (MSSP) offers providers and suppliers (e.g., physicians, hospitals, and others involved in patient care) an opportunity to create an Accountable Care Organization (ACO). An ACO agrees to be held accountable for the quality, cost, and experience of care of an assigned

Medicare fee-for-service (FFS) beneficiary population. The Medicare Shared Savings Program has different tracks that allow ACOs to select an arrangement that makes the most sense for their organization.

According to the Centers for Medicare and Medicaid Services website (2023), the Shared Savings Program is an important innovation for moving the Centers for Medicare & Medicaid Services' (CMS') payment system away from volume and toward value and outcomes. It is an alternative payment model that:

- Promotes accountability for a patient population.
- Coordinates items and services for Medicare FFS beneficiaries.
- Encourages investment in high quality and efficient services.

"We propose that applicants will have the option of choosing between a one-sided model and a two-sided model initially. Under Track 1, ACOs enter the program under the one-sided model and must transition to the two-sided model for the third year of their initial agreement period. Thereafter, those ACOs can only participate under the two-sided model for any subsequent agreement periods. Alternatively, under Track 2, an ACO may enter the two-sided model option immediately for a full 3-year agreement period. Those ACOs must also participate in the two-sided model thereafter in subsequent agreement periods. Thus, an ACO may only participate for a maximum of two years under the one-sided model, during its first agreement period, before it must transition and participate thereafter in the Shared Savings Program under the two-sided model. We believe that this approach addresses the concerns we have identified. Incorporating both a one-sided and two-sided model into the Shared Savings Program provides a path forward for diverse organizations to gain experience with redesigning care processes and assuming accountability for the quality of care and financial outcomes of the populations they serve. Requiring those who enter the program on Track 1 to migrate to the two-sided model encourages organizations to take on greater risk with the opportunity for greater reward." (*Federal Register, 2011*)

Put simply, the one-sided reimbursement track is upside only, meaning if the ACO meets its performance targets they will receive a share of the savings. If it does not meet its savings target, it will not

receive a shared savings payment and it will not have to pay a penalty payment to the MSSP. If an ACO is in a two-sided reimbursement track, it will receive a shared savings incentive payment if it meets its performance targets and it will have to pay a penalty if it does not meet its savings target.

Sahni, Groh, Nuzum, and Chernew (2020) found "the premise of ACOs rests on the opportunity for payers and participating providers to share in cost savings arising from curbing unnecessary utilization and more efficient population health management, thus aligning incentives to control total cost of care. Because ACOs are designed to reduce utilization, the bonus—or share of estimated savings received by an ACO—is one factor that significantly influences ACO profitability and has garnered the greatest attention both in academic research and in private sector negotiations and deliberations over ACO participation. Bonus payments made to ACOs are themselves based on several key design elements: (a) The baseline and benchmark for total costs, against which savings are estimated; (b) The shared savings rate and minimum savings/loss rates; (c) Risk corridors, based on caps on gains/losses and/or "haircuts" to benchmarks; and, (d) Frequency of rebasing, with implications for benchmark and shared savings."

(Sahni et. al., 2020) also found "an MSR [minimum savings rate] is common in one-sided risk agreements to protect the payer from paying out the ACO if modest savings are a result of random variations. ACOs in two-sided risk arrangements may often choose whether to have an MSR."

Ouayogode', Colla, Lewis, (2017) published a similar study based on the first year ACOs participated in the MSSP. They suggested that different patterns may emerge if some groups are better able to make changes over time. A longitudinal analysis with additional performance years' data could help identify persistent and robust associations. As suggested, this study is a longitudinal analysis of current ACOs who have participated since 2016. The longitudinal review period is 2016 – 2020.

Problem Statement

This study will focus on the impact of quality, size, patient satisfaction, reimbursement type, level of sickness, high need beneficiaries (dual eligible), and years of participation have on financial performance of

ACOs in the Medicare Shared Savings Program (MSSP). The MSSP has been in existence since 2013 and many ACOs have struggled to perform well enough to maximize the payment incentives. There are many reasons, but I believe these factors seem to be most critical to ACO success or failure. This study will attempt to empirically show ACOs what factors really impact performance.

Statement of Purpose

The purpose of this research is to explore the direct effects of quality, size, patient satisfaction, number of primary care visits and reimbursement type have on ACO financial performance. In addition, I will analyze the moderating effects of level of sickness, high need beneficiaries, and years of participation on the relationships between the independent variables and ACO financial performance. By understanding these relationships healthcare payers, like insurance plans and Medicare, will have a better understanding of what they need to do to be successful in the MSSP while providing quality healthcare.

"Little is known about factors associated with success in the Medicare ACO programs. In creating the ACO programs, the CMS intentionally did not specify necessary organizational forms or necessary capabilities, in part because there is little evidence linking provider characteristics to success under new payment models. As a result, research has shown that Medicare ACO participants are diverse on many levels. ACOs include academic medical centers, physician-hospital organizations, independent practice associations, regional and public hospitals, multispecialty group practices, integrated delivery systems, federally qualified health centers, critical access hospitals, combinations of all of the above organizational structures, or include none of these. The population of beneficiaries in these organizations is equally diverse in terms of demographics and comorbidity patterns. It is not clear whether success in the Medicare ACO programs varies systematically according to organizational characteristics, beneficiary characteristics, ACO capabilities, or even market-level factors." (Ouayogode', 2017)

Research Question

What factors influence financial performance in Accountable Care Organizations?

Based on the literature, Medicare, federal governments, state governments like Michigan, and many health plans have attempted to determine what reimbursement methodologies have the greatest impact on improving quality outcomes because quality tends to lead to better financial performance. No one has fully answered the question, but payers are experimenting with several different practical solutions to answer this conceptual question.

Medicare, which is the largest payer in the United States implemented the Merit-based Incentive Payment System (MIPS) which is a value based P4P program that pays physicians more for improving quality on a per patient basis. Likewise, the Taiwanese government experimented with paying providers more for diabetes patients if they improved continuity of care by the same physician. In Taiwan, they believe receiving care consistently from the same physician improves care.

On a health plan level, Blue Cross of Michigan used its Pay-for-Value program to determine that sustained participation in a pay-for-value program ultimately reduces hospital readmissions and ED visits in high-need patients with multiple chronic conditions. These studies and more serve as support for the research question.

Contribution to Business

Many studies provide evidence that advanced payment models, at a minimum, have an impact on certain quality measures and may have an impact on the overall quality of a target population. But those studies are not conclusive on the size of the impact and whether the size of the impact is large enough to justify the investment in advanced payment models.

On the other hand, some studies found that there is no difference or only a marginal difference in quality outcomes for providers in traditional fee for service reimbursement versus certain advanced payment models. This set of studies begs the question, why change the reimbursement scheme if the change in quality is minimal or none at all. It should be noted that most of the "no change" or "marginal change" studies are older studies. Most of the more contemporary studies seem to indicate more significant changes.

Despite these mixed results, federal governments, state governments, and health insurance plans continue to experiment with different advanced payment models in an effort to improve quality performance and quality outcomes in primary care. Intuitively, payers believe that programs designed around quality improvement with payment schemes that reward providers for achieving certain quality targets will achieve the goal of improved population health. Therefore, by answering the question:

- What factors influence financial performance in accountable care organizations?

payers will be able to understand the true factors that impact quality performance and thus financial performance.

Each of the studies discussed in the Literature Review indicate certain barriers to quality achievement and financial performance. In addition, they all suggest additional research is needed. This study will provide insight into the key factors that influence financial performance.

CHAPTER 2

Literature Review

(Sahni et. al., 2020) found that the MSSP "Launched by the Centers for Medicare & Medicaid Services (CMS) Innovation Center in 2012, Pioneer ACO was the first such model design to generate savings for Medicare. In this incarnation, Medicare set a benchmark for total cost of care per attributed ACO beneficiary: If total cost of care was kept below the benchmark, ACOs were eligible to share in the implied savings, as long as they also met established targets for quality of care. If total cost of care exceeded the benchmark, ACOs were required to repay the government for a portion of total cost of care above the benchmark. Payment models similar to the one adopted by Pioneer ACOs also have been extended to other Medicare ACO programs, with important technical differences in estimates for savings and rules for the distribution of savings or losses as well as some models offering gain sharing without potential for penalties for costs exceeding the benchmark. State Medicaid programs as well as private payers (across Commercial, Medicare Advantage, and Medicaid Managed Care) also have adopted ACO like models with similar goals and payment model structures."

(Sahni et. al., 2020) also found "While savings from MSSP have been relatively limited, in aggregate, numerous examples exist of ACOs that have achieved meaningful savings—in some cases in excess of 5 percent of total cost of care—with significant rewards to both themselves as well as sponsoring payers. The wide disparity of performance among ACOs (and across Medicare, Medicaid, and Commercial ACO programs) raises the question of whether certain provider organizations are better suited than others to succeed under total cost of care arrangements, and whether success is dictated more by ACO model design or by structural characteristics of participating providers." This provides solid foundation for this study to determine the critical factors impacting ACO performance in the MSSP.

In her article, Medicare Advantage Star Ratings: The New Patient Experience Imperative for Health Plans, Amick (2020) wrote "increasing the weight of patient experience from two to four for the Consumer

Assessment of Healthcare Providers and Systems (CAHPS) Star Ratings is significant for both health plans and providers. In recent years, CMS has expanded emphasis on patient experience, and the latest final ruling only continues to increase focus and accelerate the significance of patient-centered care and patient experience. Through this move, CMS is now elevating access to care and patient experience to be equal with outcomes measures." "CAHPS surveys follow scientific principles in survey design and development. The surveys are designed to reliably assess the experiences of a large sample of patients. They use standardized questions and data collection protocols to ensure that information can be compared across healthcare settings" (CSM.gov 2023).

Roberts E, Zaslavsky A, Barnett M, Landon B, Ding L, McWilliams M (2018) "Hospital Readmission Reduction Program (HRRP) penalizes hospitals to some extent for serving poorer and sicker patients, adding to evidence that pay-for-performance programs with limited risk adjustment could exacerbate disparities by unjustifiably transferring resources away from providers disproportionately serving higher-risk patients and by establishing incentives for providers to avoid these patients." This study supports two independent variables in the model shown later, Quality and High Need Beneficiaries. Readmissions is the measure used to operationalize quality and high need beneficiaries is operationalized by dual eligibles (Medicare beneficiaries that have Medicare and Medicaid).

Starfield B, Shi L, Macinkoj J (2005) found "six mechanisms, alone and in combination, may account for the beneficial impact of primary care on population health. They are (1) greater access to needed services, (2) better quality of care, (3) a greater focus on prevention, (4) early management of health problems, (5) the cumulative effect of the main primary care delivery characteristics, and (6) the role of primary care in reducing unnecessary and potentially harmful specialist care." This study provides solid evidence that quality of care is improved, and total cost of care is managed when patients have a good relationship with their primary care physician. This provides support for three independent variables included in the model shown later, Primary Care Visits, Patient Satisfaction and Quality. Patient

satisfaction is operationalized by the CAHPS survey result related to how Medicare beneficiaries communicate with the primary care physician. This study provides strong support for the importance of primary care physicians communicating with their patients and possibly avoiding hospital admissions and some specialty care.

(Mandal 2017) studied the relationship between reimbursement and quality-based interventions implemented by primary care physician practices. At the core of these interventions is the CMS HCC system. CMS developed a coding system that codes specific conditions at a granular level and aggregates those codes into broad categories called Hierarchical Condition Codes (HCC). The reimbursement rate paid by CMS to Medicare Advantage Organizations (MAO) is higher for more severe HCCs. Basically, the sicker the member the higher the reimbursement. The process of physicians and health plans applying these codes to patients is called Risk Adjustment.

(Mandal 2017) studies the quality-based outcomes measured by HCCs for two physician practices. Practice A is reimbursed using a full risk capitation model and Practice B is reimbursed FFS. Capitation is when a health plan pays a practice a fixed dollar amount per member per month regardless of utilization. In this case Practice A had a full risk capitation, so they were also responsible for all services provided to their patients (inpatient, outpatient, specialist, etc.) with some exclusions, like high cost drugs and transplants.

"As a result of the capitated payment model, Practice A outperformed Practice B. Key findings included: 1) MAO–provider collaboration optimized the RAF [risk adjustment factor], 2) RAF optimization supported a risk stratification process in the effective triage of office-based care, 3) intensive office-based care concomitantly reduced hospital-based services, and 4) this shift in healthcare delivery improved survival" (Mandal, 2017).

Testing value based models is not only tied to the United States, it's an international phenomenon. Taiwan has a single payer system of healthcare administered by the National Health Insurance Administration (NHI). NHI commissioned a study by Pan, Kung, Chiu, Liao, Tsai, W (2017) to study the

impact of P4P on the continuity of care of patients with diabetes. This study had two dependent variables – the survival status of patients and physician continuity of care.

"In the Taiwanese P4P program, additional bonuses are given to physicians if their performance quality is ranked in the top quarter of their peers or if they maintain regular follow-up of their patients at their clinics. To achieve these goals, physicians should try to retain their P4P participants by providing good service, maintaining a high quality of diabetes treatment, and lowering the related treatment complications of the patients. If the patients are followed by the same physician, with regular serial laboratory and clinical records, the physician can more easily check each patient's general condition and modify treatment methods as necessary, which can subsequently improve treatment quality. With improved treatment quality and outcomes, patients are more likely to trust their doctors and are less likely to change physicians." (Pan et.al., 2017)

This study demonstrated that patients in P4P programs had higher continuity of care and lower patient mortality. Therefore, P4P is highly correlated (positive) with patient mortality.

(Cross 2017) studied the impact of sustained participation in a Pay for Value program on high need patients, meaning patients with chronic condition(s), including patients with multiple chronic conditions and behavioral health disorders. Cross, et. al (2017) "performed a longitudinal cohort study of 17,443 patients with 2 or more conditions who were assigned to primary care providers (PCPs) within 1,582 practices that did and did not continuously participate in Blue Cross Blue Shield of Michigan's pay-for-value program (the Physician Group Incentive Program [PGIP]) between 2010 and 2013."

(Cross 2017) "found that sustained participation in a pay for value program was associated with reductions in readmissions, better control over any emergency department (ED) use, and improved quality. In contrast, they found no program effect on inpatient utilization or total medical–surgical cost, which may reflect the fact that these 2 measures are less sensitive to changes that can be made by primary care practices."

"Given the large investment in pay-for-value programs to date, and their growing prominence, their findings offer reassurance that these initiatives appear to be effective in accelerating performance improvement among primary care practices caring for high-need patients. Their findings specifically point to the importance of sustained participation, which likely helps practices establish new care processes to improve outcomes under their control—in particular, ED use and readmissions, which are more prevalent among high-need patients." (Cross 2017)

Khullar, Schpero, Bond, Qian, Carsalino, (2020) studied the first year of physicians' performance in CMS' MIPS program. In 2017, Medicare began making payments to physicians under the Merit-based Incentive Payment System (MIPS). With MIPS, eligible physicians could receive rewards or penalties based on their performance across 4 domains: quality, costs, improvement activities, and promoting interoperability. More than 90% of eligible physicians participated in the program in 2017, and payments were adjusted up to 4% in 2019.

In this cross-sectional analysis of physicians participating in the first year of the Medicare MIPS program, physicians in the highest quintile of proportion of dually eligible patients served had composite scores more than 11 points lower compared with other physicians. "For physicians caring for the most socially disadvantaged patients, several factors were associated with higher MIPS scores, some of which are modifiable. For example, physicians in the highest risk quintile who practiced in larger groups, practiced in multispecialty practices, or submitted information through alternative payment models had higher MIPS scores, possibly reflecting the greater infrastructure and resources these practices have to collect, analyze, and report measures to" CMS (Khullar, 2020).

Mosqueira, Rosenthal, Barnett (2019) "found little evidence that physician compensation type was systematically associated with differences in the quality of care and mixed associations with the delivery of out-of-visit care. The minimal association between quality and compensation held across multiple measures of high- and low-value care and with an alternate definition of compensation model." This study found that

incentives from new payment models were not translated into individual physician compensation in their sample, and that even in practices with significant involvement in alternative payment models, there was significant pressure to increase financial productivity.

(Ouayogodé, 2016) tested factors that impact financial performance in the MSSP, including "… more practicing physicians on the governing board, physician leadership, active engagement in reducing hospital re-admissions, a greater proportion of disabled Medicare beneficiaries assigned to the ACO, financial incentives offered to physicians, a larger financial benchmark, and greater ACO market penetration. No characteristics of organizational structure associated with both outcomes of savings per beneficiary and likelihood of achieving shared savings. ACO prior experience with risk-bearing contracts was positively correlated with savings and significantly increased the likelihood of receiving shared savings payments."

(Kohli and Kettinger, 2004) studied a hospital's attempts to exercise cost and outcome control over physicians via an information system by "informating" (a term coined by the authors) physicians' practice decisions with performance information.

An initial direct informating attempt by management was viewed as a failure because, while it resulted in greater transparency, it failed to result in significant behavioral change in the clinical practice of the physicians. A second, indirect, intervention focused on extending the informating concept to better fit the context of a clan of physicians.

Bleser, Saunders, Muhlestein, and McClellan (2019) studied why ACOs don't survive in the MSSP program. They found that "overall, ACO exits from the MSSP decreased after ACOs' third year. Shared-savings bonus payment achievement, more care coordination, higher financial performance benchmarks, market-level Medicare cost growth, lower-risk patients, and contracts with upside-only risk were associated with longer survival. Quality scores, post-acute care spending, organizational traits, and most market-

context characteristics had no significant association with survival, which indicates that diverse organizations and markets can be successful."

CHAPTER 3

Research Model

Figure 1: Research model (Conceptual Model)

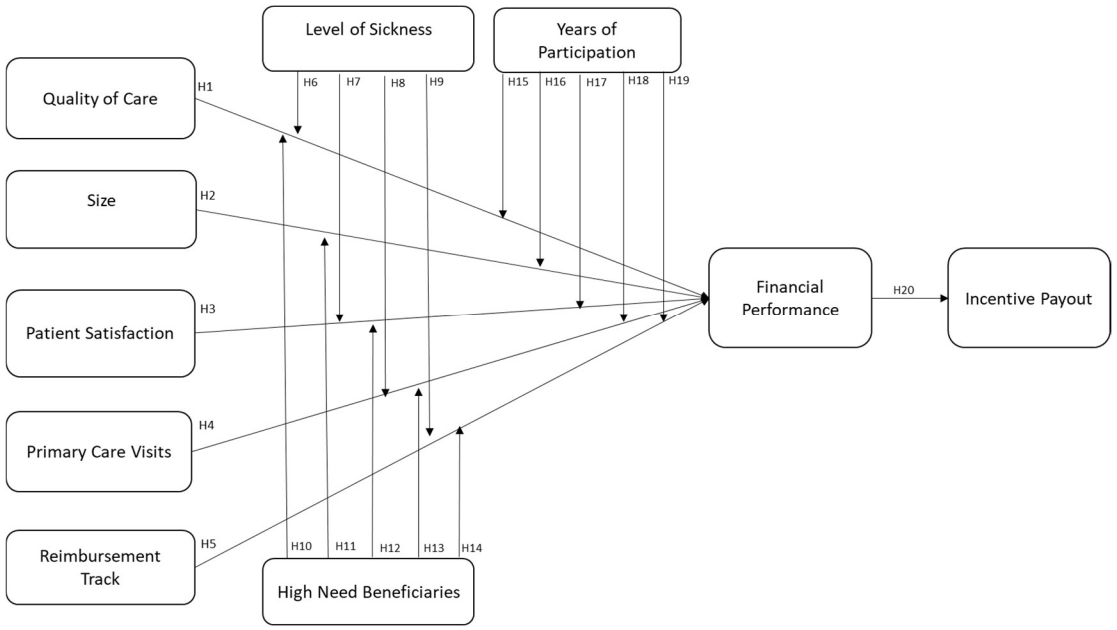


Table 1: Description of Model Variables

Variable	Variable Type	Definition
Quality of Care	DV	Lower readmission rates will result in better financial outcomes. May suggest ACOs focus on readmissions rather than other areas of quality.
Size	DV	The number of beneficiaries assigned or attributed to an ACO. The size (or number of beneficiaries) attributed to an ACO may determine what success factors are most important.
Patient Satisfaction	DV	CAHPS ACO 2 – Beneficiary perception of how well physicians communicate with their patients.
Primary Care Visits	DV	Suggests more primary care visits for certain patients could avoid certain higher costs, including ER visits and readmissions.
Reimbursement Track	DV	One-sided – ACO takes on upside risk only. They do not reimburse the program for losses. Two-sided – ACO takes on downside risk. They may be required to reimburse the program for losses.
Level of Sickness	Mod	The level of acuity (sickness) associated with a beneficiary population. Diagnosis codes associated with each member indicates their level of sickness and they are used to determine the cumulative level of sickness of a population.
High Need Beneficiaries	Mod	Beneficiaries that qualify for Medicare because of their age and qualify for Medicaid because of their low income. This could be considered a low socio-economic indicator for healthcare.
Years of Participation	Mod	The number of years an ACO has participated in the MSSP.
Financial Performance	Med	ACO savings/losses. Savings must be in excess of MSR to receive an incentive payout
Incentive Payout	DV	Incentive paid to ACOs for exceeding their MSR and other payout targets.

Hypotheses

One of the primary reasons for implementing the MSSP is to lower cost while improving quality care. If ACOs improve quality, they are more likely to achieve or exceed the minimum savings rate, so it's reasonable that quality improvement will have a positive direct effect on financial performance. There are significant studies on quality and the impact quality may have on a value based arrangement. In fact, quality can be defined in different ways. Some define quality as a measure of how well patients are cared for while others define quality as a measure of the patients experience with their provider and/or health plan. Both schools of thought have multiple layers and this makes quality of care a difficult concept for providers to understand and build programs around. In addition, quality is not always prominent in value based programs, so quality could have less of an impact because the value based program calculation is more heavily weighted on cost. This study looks at quality from the perspective of providing better care, specially reducing hospital readmissions. ACOs that design and implement programs specifically aimed at reducing readmissions will enjoy better financial and quality outcomes.

Quality of Care

(Page 2017) found that "in terms of quality measurement, CMS quality measures have an important effect on the management of specialty therapeutic areas and specialty medications, with 93% of respondents agreeing with this finding. ACO participants believe that specialty therapeutic management through CMS quality measures can help improve patient satisfaction, decrease readmissions, and increase use of condition-specific specialty medications."

In addition, (Wilson et al, 2020) reviewed five studies that included increases in quality measures for chronic disease such as COPD, diabetes mellitus and congestive heart failure; increases in the percentage of enrollees that meet chronic-care management and pediatric-care thresholds and reductions in hospital admissions related to key prevention indicators.

H1: Quality positively impacts Financial Performance – as quality improves financial performance will improve.

Size

Size or growth is always top of mind in ACO leadership. Of course, the ACO with the most members will receive more revenue but the members generating that revenue may or may not generate profits. Many ACOs do well but many fall short and exit the program because they can not achieve their minimum savings rate (MSR). This study tests whether achieving a certain size has an impact on achieving a certain MSR which may lead to an incentive payout. Is bigger better or is bigger worse?

Extant research indicates that size is a factor that impacts ACO performance. "Very large ACOs and small ACOs tend to have lower performance than medium sized ACOs." (Vidrine 2021) Vidrine (2021) also found that "top-performing ACOs also have far fewer beneficiaries on average than the middle three quintiles. Looking back to 2019 we see that the average number of beneficiaries is mostly the same year over year, with the top quintile of ACOs averaging 14,001 beneficiaries in 2020, down slightly from 14,392 in 2019."

H2: Number of Patients (size) positively impact Financial Performance – as size increases ACOs will have better financial performance.

Patient Satisfaction

In contemporary business customer satisfaction has become more of a focus for companies. This is, in part, driven by the evolution of social media where customers have more access to data and a platform to communicate their perception of their customer experience. Healthcare is no different. In fact, there are many platforms for patients to voice their opinion and many healthcare organizations, including Medicare, are surveying patients to obtain feedback on their experience. Wilson (2020) found that "overall, results examining patient satisfaction found similar ratings between ACOs and fee-for-service models, although

self-reported timely access to care was found to be higher in ACO models in one study and satisfaction with clinician communication were found to be somewhat higher among some ACO models in two studies."

As discussed in the Literature Review, (Amick 2020) in her article, Medicare Advantage Star Ratings: The New Patient Experience Imperative for Health Plans, wrote "increasing the weight of patient experience from two to four for the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Star Ratings is significant for both health plans and providers. Based on this information, it is clear CMS is beginning to place more of an emphasis on member experience and patient satisfaction. This is not to take away from the true clinical measures but in today's environment, patient satisfaction is gaining ground in the evaluation of provider performance. This study will focus on how well physicians communicate with their patients impacts financial performance.

H3: Patient Satisfaction positively impacts Financial Performance – ACOs with higher patient satisfaction scores will have better financial performance.

Primary Care Visits

It is well known that people should, at a minimum, have an annual check-up and if the person has a chronic or ongoing illness, they should visit their primary care physician more frequently. This will allow early detection of potential problems and monitoring of ongoing problems and chronic conditions. Vidrine (2021) found that "primary care physicians are at the core of ACO management; they help manage chronic diseases, foster patient health engagement, and coordinate proactive care services. Effective primary care management will then impact the spend and utilization of higher-cost services downstream. In 2019, we saw the top quintile of ACOs having 12,000 PCP visits per 1,000 beneficiaries which was also more than any other quintile." This is a remarkable differentiator from FFS medicine where providers get paid more for providing more care and the mindset that more primary care services results in more cost. Vidrine found quite the contrary. This study found that providing more primary care visits for certain beneficiaries

resulted in cost avoidance related to ER visits, unnecessary hospitalizations, and readmission for the same or similar diagnoses.

H4: Primary Care Visits positively impact Financial Performance – ACOs with higher primary care visit rates will have better financial performance.

Reimbursement Track

For track 1 providers the risk is upside only, meaning if they meet their minimum savings rate (MSR) they will share the savings with the payer (in this case CMS). Track 2 ACOs have both upside and downside risk, meaning if they meet the minimum savings rate they share in the savings and if they do not meet the minimum savings rate they will pay a penalty to the program – they pay money back. Ouayogode (2017) found that "the positive and significant association between risk bearing, and financial performance may suggest that ACOs with such experiences have acquired knowledge and strategies on how to better operate in a risk-based environment. This relationship may strengthen even more with organizations transitioning into the two-sided risk model over time, since models where ACOs operate under a risk-based arrangements have the potential to induce more meaningful systematic change due to the degree of financial risk involved."

In this study we will look at whether ACOs perform better in a one-sided reimbursement arrangement or a two-sided reimbursement arrangement. As noted in the Ouayogode (2017) study, it is likely that ACOs in a two-sided reimbursement structure have gained more experience with their populations and they have implemented programs to mange their populations better, thereby reducing their exposure to potential losses in a downside risk arrangement.

H 5: Reimbursement Track positively impacts Financial Performance – Track 2 providers will have better financial performance than track 1 providers.

Level of Sickness

Some provider groups suggest their underperformance is because their patient population is sicker than their peers. It is certainly reasonable that it's more difficult to achieve certain quality and financial measures if the patient population is sicker than the population they are being compared to. Vidrine (2021) found that "one of the most interesting pieces of this data is that we see that total PMPY [per member per year] is actually higher among the top-performing ACOs than the next three quintiles. While this seems somewhat counterintuitive it is important to remember that CMS sets the benchmark based on a number of factors, including the risk of the population. This suggests that top quintile ACOs are likely treating a somewhat sicker population." Another important fact supporting hypotheses 6 through 9 (level of sickness leads to better financial performance) is sicker patients positively risk adjust. "Risk adjustment is a way to help make sure doctors and other health providers are paid fairly for the people they treat – providers get paid more for patients who have more health problems than for healthy patients who may not need as many services" (CMS.gov, 2023). Therefore, it's reasonable to predict that the higher revenue garnered by sicker patients could offset the additional costs associated with their medical needs.

H6: Level of Sickness positively moderates the relationship between Quality and Financial Performance – as Level of Sickness increases the relationship between Quality and Financial Performance will become stronger.

H7: Level of Sickness positively moderates the relationship between Patient Satisfaction and Financial Performance – as Level of Sickness increases the relationship between Patient Satisfaction and Financial Performance will become stronger.

H8: Level of Sickness positively moderates the relationship between Primary Care Visits and Financial Performance – as Level of Sickness increases the relationship between Primary Care Visits and Financial Performance will become stronger.

H9: Level of Sickness positively moderates the relationship between Reimbursement and Financial Performance – as Level of Sickness increases the relationship between Reimbursement and Financial Performance will become stronger.

High Need Beneficiaries

Dual eligibles or high need beneficiaries are patients that qualify for Medicare because of their age and qualify for Medicaid because of their low income. This could be considered a low socio-economic indicator for healthcare. These members are usually less compliant because of the social determinants they deal with. Social determinants could be related to transportation, food insecurity, poor housing, or poor education, to name a few. Ouayogode' (2017) found that ACOs with a higher proportion of dual eligible and minority Medicare beneficiaries were correlated with less savings. Hypotheses 10 through 14 will challenge Ouayogode's finding because it's also possible that high need beneficiaries can have a positive impact on financial performance because of the high premium rates paid for dual eligibles. If dual eligibles are managed well, the increased revenue could offset the additional costs associated with their additional needs.

H10: High Need Beneficiaries positively moderate the relationship between Quality and Financial Performance – more paneled High Need Beneficiaries will result in stronger Financial Performance.

H11: High Need Beneficiaries positively moderate the relationship between Size and Financial Performance – as the number of High Need Beneficiaries increase the relationship between Size and Financial Performance will become stronger.

H12: High Need Beneficiaries positively moderate the relationship between Patient Satisfaction and Financial Performance – more High Need Beneficiaries will strengthen the relationship between Patient Satisfaction and Financial Performance.

H13: High Need Beneficiaries positively moderate the relationship between Primary Care Visits and Financial Performance – more High Need Beneficiaries will strengthen the relationship between Primary Care Visits and Financial Performance.

H14: High Need Beneficiaries positively moderate the relationship between Reimbursement and Financial Performance – more High Need Beneficiaries will strengthen the relationship between Reimbursement and Financial Performance.

Years of Participation

In a literature review of the relationship between clinical experience and quality of healthcare, Choudhry N, Fletcher R, MD, Soumerai S (2005) found that "physicians who have been in practice for more years and older physicians possess less factual knowledge, are less likely to adhere to appropriate standards of care, and may also have poorer patient outcomes." The authors admit that due to limited relevant search terms they may not have captured all relevant articles on this topic. These results are also very counterintuitive, so it makes sense for more research and analysis to be done on the relationship between clinical experience and quality of healthcare.

(Bleser et al., 2019) studied why ACOs don't survive in the MSSP program. They found that "overall, ACO exits from the MSSP decreased after ACOs' third year. Shared-savings bonus payment achievement, more care coordination, higher financial performance benchmarks, market-level Medicare cost growth, lower-risk patients, and contracts with upside-only risk were associated with longer survival. Quality scores, post-acute care spending, organizational traits, and most market-context characteristics had no significant association with survival, which indicates that diverse organizations and markets can be successful."

This study will challenge some of the results of (Choudhry, et. al., 2005) and may confirm (Bleser et. al., 2019) by testing the following hypotheses. It is certainly plausible that ACOs who participate in the program for a longer period of time will implement programs and processes to improve performance.

Hypotheses 15 through 19 will test whether more Years of Participation leads to better financial performance.

H15: Years of Participation positively moderates the relationship between Quality and Financial performance – more years of participation strengthens the relationship between Quality and Financial Performance

H16: Years of Participation positively moderates the relationship between Size and Financial Performance – more years of participation strengthens the relationship between Size and Financial Performance

H17: Years of Participation positively moderates the relationship between Patient Satisfaction and Financial Performance – more years of participation strengthens the relationship between Patient Satisfaction and Financial Performance

H18: Years of Participation positively moderates the relationship between Primary Care Visits and Financial Performance – more years of participation strengthens the relationship between Primary Care Visits and Financial Performance.

H19: Years of Participation positively moderates the relationship between Reimbursement Track and Financial Performance – more years of participation strengthens the relationship between Reimbursement Track and Financial Performance.

Financial Performance

(Sahni et. al 2020) found that "The premise of ACOs rests on the opportunity for payers and participating providers to share in cost savings arising from curbing unnecessary utilization and more efficient population health management, thus aligning incentives to control total cost of care. Because ACOs are designed to reduce utilization, the bonus—or share of estimated savings received by an ACO—is one factor that significantly influences ACO profitability and has garnered the greatest attention both in academic research and in private sector negotiations and deliberations over ACO participation."

While this hypothesis seems intuitive it is important to satisfy the model because an ACO can not receive an incentive payout without positive financial performance. In fact, many ACOs achieve program savings but do not receive an incentive payout because they did not exceed their minimum savings rate. Just because an ACO achieves savings does not necessarily mean it will receive an incentive payout. This provides support for hypothesis 20 because financial performance positively impacts incentive payout.

H20: Financial performance positively impacts incentive payout – better financial performance leads to grater incentive payouts.

CHAPTER 4

Methodology

This research question and model will be analyzed using secondary data published by The Center for Medicare and Medicaid Services (CMS), Performance Year Financial and Quality Results Public Use Files (PUF). There is a separate database for each program year. The 2020 database includes quality and financial data elements for 513 ACOs. Since 2020 was impacted by COVID-19 some adjustments may be necessary to account for COVID-19 impacts.

The research model above identifies notable factors that impact financial performance in ACOs: quality, number of beneficiaries (size), patient satisfaction (patient perception), primary care visits, and type of reimbursement. All relationships between the independent variables and the dependent variable will be moderated by high need patients (dual eligibles). Dual eligibles are patients that qualify for Medicare because of their age and qualify for Medicaid because of their low income (sometimes characterized as socio-economic status). The data element that will be used to represent dual eligibles will be the total number of dual eligibles in each ACO (see table below). In addition, all relationships between the independent variables and financial performance (except for the relationship between size and financial performance), will also be moderated by level of sickness. Level of sickness will be indicated by the average of the Medicare risk score per ACO. The Medicare risk score is a value Medicare assigns to diagnoses based on their acuity. Higher values indicate higher acuity (sickness). The last moderating variable is Years of Participation. The ACOs in this analysis have participated in the MSSP from one to eight years. The model will test whether the number of years an ACO participates in the program impacts their financial performance. The databases do not include a data element for years of participation, but one will be created based on the ACOs' inception year in the program.

Medicare includes two populations – aged and disabled. Aged are Medicare beneficiaries that have paid into the system while working and have reached the age of 65. Disabled are Medicare beneficiaries of

any age that qualify for Medicare because of a qualifying disability. The databases include both populations, but not all data elements split the populations. Therefore, all analyses will be cumulative of both aged and disabled populations. Also, the databases include data points for one to three benchmark years, but all data points are not split by benchmark year. So, all analyses will be based on the performance year data points.

As mentioned, the independent variables are quality, size, patient satisfaction, primary care visits and reimbursement track. The dependent variable is Incentive Payout which is mediated by Financial Performance. The relationships between the independent variables and the mediator are moderated by level of sickness, high need patients, and years of participation. Table 4: Summary of Data Element, below describes the data elements in the CMS MSSP database that will be used to represent each variable.

Because Medicare produces a separate file for each program year and makes changes to the database each year there is a significant amount of data management needed to create consistency across the variables used to test the model. Some of the changes are small and some are very significant. For instance, the main unique identifier, the ACO identification number was changed in 2018 which makes it difficult to analyze an ACO's performance before and after 2018. Also, Medicare changes the quality measures ACOs must meet each year, so to measure quality and patient satisfaction, measures will need to be selected that are present in each year included in the longitudinal review period.

A statistical analysis will be performed in SPSS using the aforementioned dataset. Linear regression analyses will be performed to test the relationships between the independent variables and the mediator; and the impact of the mediator on the dependent variable. The linear regressions will include descriptive statistics, model summary including R^2, ANOVA including significance of the interaction, and coefficient table indicating the t-test and beta.

Table 4: Summary of Data Elements (Pulled from Data Dictionary)

Variable	Element	Type	Hypotheses	Description
Quality	Inpatient Hospital Discharges	IV	H1	Total number of inpatient hospital discharges per 1,000 person years in the performance year
Size	Total Assigned Beneficiaries	IV	H2	Number of assigned beneficiaries, performance year
Patient Satisfaction	CAHPS: How Well Your Providers Communicate	IV	H3	CAHPS: How Well Your Providers Communicate
Primary Care Visits	Primary Care Services	IV	H4	Total number of primary care services per 1,000 person-years in the performance year. Primary care services are counted regardless of physician specialty.
Reimbursement Track	Risk Model	IV	H5	Indicates participation in a one-sided shared savings model or two-sided shared savings/losses model for the performance year
Level of Sickness	Risk Score Composite: ESRD, Duals, and Disabled	Mod	H6, H7, H8, H9	Weighted average of members in ESRD, Duals, and Disabled categories
High Need Patients (Duals)	AGED/DUALS person years in performance year	Mod	H10, H11, H12, H13, H14	Number of assigned beneficiaries with AGED/DUAL enrollment type in the performance year adjusted for the total number of months that each beneficiary was classified as AGED/DUAL; Number of AGED/DUAL person-months divided by 12.
Years of Participation	Number of years participating in MSSP	Mod	H15, H16, H17, H18, H19	Created by (current year – initial year +1)
Financial Performance (Savings)	Generated Total Savings/Losses	Med		(Gross) General savings: Total savings for ACOs whose savings rate equaled or exceeded their MSR. (Gross) General losses: Total losses for ACOs in two-sided models whose losses rate equaled or exceeded their MLR
Incentive Payout	Earned Savings	DV	H20	Total earned shared savings: The ACO's share of savings for ACOs whose savings rate equaled or exceeded their MSR, and who were eligible for a performance payment because they met the program's quality performance standard.

Database Preparation

The MSSP began in 2013 but this analysis only includes the 2016 to 2020 program years because the first three years of program data were inconsistent and they are limited in quality reporting. There was

also a very significant change in reporting in 2021 so it is not included in this analysis either. Therefore, 2016 through 2020 were the most consistent reporting years.

As mentioned, each performance year is in a separate database, so a cumulative database was created by combining all the intended program years into one Excel database. By doing this it was determined that program years 2013 to 2015 were immature reporting years and needed to be dropped from the analysis. It also revealed that MSSP uniquely identified ACOs using an "identification number" in program years 2013 to 2017 and began using an "ACO ID" in 2018. To analyze ACO performance across all program years included in the longitudinal analysis, 2016 to 2020, a consistent unique identifier was needed. To accomplish this several database formulas and actions were used to map the identification numbers with the ACO IDs. Then the identification numbers in the years 2016 to 2017 were replaced with ACO IDs making ACO ID the unique identifier across all program years in the analysis.

Using the database and the database dictionary (Appendix 2) potential data elements were identified to operationalize all variables in the model. Certain data elements were not present in each program year, or they were represented differently so the chosen data elements to operationalize the model were confirmed to be present and consistent in each program year included in the longitudinal study.

Reimbursement Track is a key independent variable in the model and the data elements representing reimbursement track change significantly over the course of the program, so the data elements for reimbursement track were really inconsistent. Medicare has been modifying the way it reimburses ACOs since the beginning of the program in an effort to incentivize better performance. The most significant reimbursement track change was in 2019 when MSSP created the Pathways to Success program. This change created additional reimbursement tracks and a better glidepath from upside only risk to full risk. Upside only risk means the ACO is not required to pay the program back if the ACO loses money. Full risk means the ACO is required to repay some, or all of the dollars lost. To make the reimbursement tracks consistent across all years included in the longitudinal study, 2016 to 2020, a mapping table was created and

a consistent set of reimbursement tracks were included in each program year. The mapping table is included below. Later in the data preparation it was determined that "Risk Model" which is a data element in each database that indicates one-sided or two-sided reimbursement tracks is a better data element to operationalize reimbursement track.

Table 2: Reimbursement Track Mapping

2016 to 2018	2019 to 2020	Mapped for Analysis
Track 1	Track 1	Track 1
Track 2	Track 2	1 Mid
Track 3	Track 3	1 Plus
	Track 1 Plus	1 Max
	Basic A	Track 2
	Basic B	Track 3
	Basic C	
	Basic D	
	Enhanced	

The Pathways to Success program was implemented midyear in the 2019 program year so the 2019 database was split in two, 2019 and 2019A. 2019 included all ACOs on their original 2019 reimbursement tracks for all 12 months plus the first six months of data for ACOs that chose to switch to the Pathways to Success program for the second half of the 2019 program year. 2019A only included the subset of ACOs that chose to participate in the Pathways to Success program for the second half of the program year. The challenge was, for ACOs that switched to the new program, their first six months of data was in the 2019 database and the second half of their data was in the 2019A database. For this subset of ACOs, their data had to be combined to create a full program year of data. Several Excel database functions and formulas were used to achieve this.

The Performance Year Financial and Quality Results Public Use Files (PUF) include over eighty (80) data elements, so the potential data elements needed to operationalize the model were marked and the other data elements were deleted, thereby creating a more manageable database for analysis. Many of the data elements in the smaller database were renamed for easier recognition in the analysis.

Some data required manipulation to accommodate certain model variables. The moderator, years of participation, was created by subtracting the inception year from the program year and adding 1 (program year – inception year + 1). The databases did not include an overall risk score which is the data element that operationalizes level of sickness. Risk score is a value Medicare assigns to diagnoses based on their acuity. Higher values indicate higher acuity (sickness). The databases included separate risk scores for Medicare beneficiaries with end stage renal disease (ESRD), disabled beneficiaries, dual eligible beneficiaries, and nondual beneficiaries. ESRD, disabled, and duals are usually more complex beneficiaries, so a composite risk score was created by combining these three risk scores using a weighted average based on membership. ACO 2, which is a CAHPS measure that indicates how well primary care physicians communicate with their patients, was represented by a decimal value. Better performance is represented by lower numbers. This decimal value was inverted so higher values indicate better performance (1 - ACO 2 value). Due to COVID 19, Medicare did not require ACOs to report quality measures in 2020. Instead, they used 2019 quality performance to calculate payouts for the 2020 performance year. So, in this analysis, 2019 quality measure performance was used for 2020 for the ACOs participating in both years.

One of the intended steps in the analysis is to determine if there are different factors impacting ACO performance based on size. In other words, would smaller versus larger ACOs need to focus on different factors? To accomplish this each ACO was assigned to a group (1 – 4). A table of the groups is provided below and the full Data Dictionary of the Performance Year and Quality Results PUF is shown in Appendix 2.

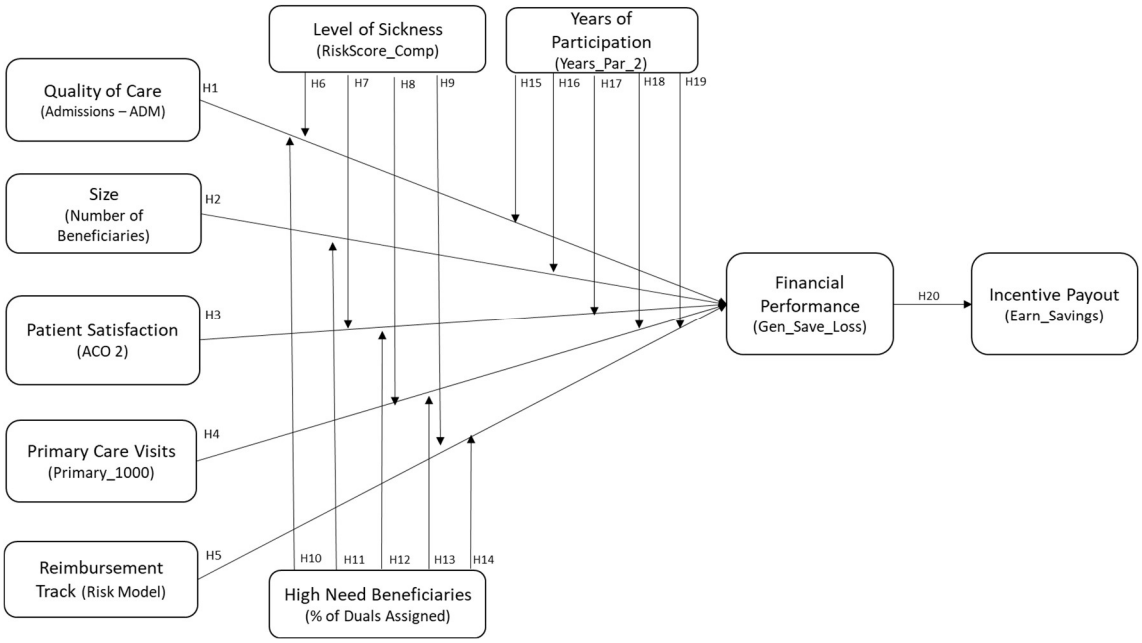
Table 3: Groups by Size

Row Labels	Number of ACOs	Range
1	536	0 - 7,499
2	424	7,500 - 9,999
3	805	10,000 - 19,999
4	672	20,000 +

In some years values were represented by a decimal value and in other years the same data element was represented in a percentage format. These inconsistencies were corrected. Also, all of the numeric fields were in a text format, so each was converted to number format in Excel.

Once the data manipulation was complete in Excel and the database was clean and properly formatted it was saved as a comma delimited CSV file and uploaded to SPSS. All interactions between the independent variables and the moderator were created in SPSS using the create new variable function and multiplying the independent variable by the moderator. All new interaction variables were given easy to recognize names with "_Int" at the end.

Figure 2: Operational Model



CHAPTER 5

Results

Direct Effects

Once the database preparation was complete, linear regressions were performed to analyze the direct effect of each independent variable on the mediator. The results indicated that the direct effect of quality (IV) on financial performance (DV) was significant (0.001) and R^2 was 0.007, meaning quality explains 0.7% of the variation in financial performance. This provides support for H1, quality positively affects financial performance. The results indicated that the direct effect of size (IV) on financial performance (DV) was significant (0.001) and the R^2 was 0.207, meaning size explains 20% of the variance in financial performance. This provides support for H2, size positively affects financial performance. The results indicated that the direct effect of patient satisfaction on financial performance was significant (0.019) and the R^2 was 0.002, meaning patient satisfaction explains 0.2% of the variation in financial performance. This provides support for H3, patient satisfaction positively affects financial performance. The results indicated that direct effect of primary care visits on financial performance was significant (0.003) and the R^2 was 0.004, meaning patient satisfaction explained .4% of the variation in financial performance. This provides support for H4, primary care visits positively affect financial performance. The results indicated that the direct effect of reimbursement track on financial performance was significant and the R^2 was 0.034, meaning reimbursement track explains 3.4% of the variation in financial performance. This provides support for H5, reimbursement track positively affects financial performance. The table below shows that each of the direct effects were significant and provides additional statistics.

Table 5: Direct Effects

Direct Effects on Financial Performance	R^2	Beta	t-test	Significance
Quality (H1)	0.007	0.084	4.162	0.001
Size (H2)	0.207	0.455	25.181	0.001
Patient Satisfaction (H3)	0.002	0.047	0.339	0.019
Primary Care Visits (H4)	0.004	0.059	2.929	0.003
Reimbursement Track (H5)	0.034	0.185	9.288	0.001

Moderating Effects

Linear regressions were performed to analyze the moderating effect of each moderator on the relationship between the independent variables and the mediator. The results of the moderating effect of level of sickness on the relationship between quality and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.044, meaning this interaction explained 4.4% of the variation in financial performance. This provides support for H6, level of sickness positively moderates the relationship between quality and financial performance. The results of the moderating effect of years of participation on the relationship between quality and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.058, meaning this interaction explained 5.8% of the variation in financial performance. This provides support for H15, years of participation positively affects the relationship between quality and financial performance. The results of the moderating effect of high needs beneficiaries on the relationship between quality and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.013, meaning this interaction explained 1.3% of the variation in financial performance. This provides support for H10, high need beneficiaries positively affect the relationship between quality and financial performance. The results of the moderating effect of years of participation on the relationship between size and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.261, meaning this interaction explained 26.1% of the variation in financial performance. This provides support for H16, years of participation positively affects the relationship between size and financial performance. The results of the moderating effect of high need beneficiaries on the relationship between size and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.213, meaning this interaction explained 21.3% of the variation in financial performance. This provides support for H11, high need beneficiaries positively affect the relationship between size and financial performance. The results of the moderating effect of level of sickness on the

relationship between patient satisfaction and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.013, meaning this interaction explained 1.3% of the variation in financial performance. This provides support for H7, level of sickness positively affects the relationship between patient satisfaction and financial performance. The results of the moderating effect of years of participation on the relationship between patient satisfaction and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.063, meaning this interaction explained 6.3% of the variation in financial performance. This provides support for H17, years of participation positively affects the relationship between patient satisfaction and financial performance. The results of the moderating effect of high need beneficiaries on the relationship between patient satisfaction and financial performance indicated that the interaction was significant (0.017) and the R^2 was 0.003, meaning this interaction explained 0.3% of the variation in financial performance. This provides support for H12, High Need Beneficiaries, positively affect the relationship between patient satisfaction and financial performance. The results of the moderating effect of level of sickness on the relationship between primary care visits and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.008, meaning this interaction explained 0.8% of the variation in financial performance. This provides support for H8, level of sickness positively moderates the relationship between primary care visits and financial performance. The results of the moderating effect of years of participation on the relationship between primary care visits and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.059, meaning this interaction explained 5.9% of the variation in financial performance. This provides support for H18, years of participation positively affects the relationship between primary care visits and financial performance. The results of the moderating effect of high need beneficiaries on the relationship between primary care visits and financial performance indicated that the interaction was significant (0.012) and the R^2 was 0.004, meaning this interaction explained 0.4% of the variation in financial performance. This provides support for H13, High Need Beneficiaries, positively moderates the

relationship between primary care visits and financial performance. The results of the moderating effect of level of sickness on the relationship between reimbursement track and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.038, meaning this interaction explained 3.8% of the variation in financial performance. This provides support for H9, level of sickness positively affects the relationship between reimbursement tract and financial performance. The results of the moderating effect of years of participation on the relationship between reimbursement track and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.074, meaning this interaction explained 7.4% of the variation in financial performance. This provides support for H19, years of participation positively affects the relationship between reimbursement track and financial performance. The results of the moderating effect of high need beneficiaries on the relationship between reimbursement track and financial performance indicated that the interaction was significant (0.001) and the R^2 was 0.034, meaning this interaction explained 3.4% of the variation in financial performance. This provides support for H14, high need beneficiaries positively affect the relationship between reimbursement track and financial performance. The table below shows that each of the moderating interactions were significant and provides additional statistics.

Table 6: Moderating Effects

Moderating Effects on Financial Performance	R2	Beta	t-test	Significance
Quality/Level of Sickness (H6)	0.044	0.64	9.71	0.001
Quality/Years of Participation (H7)	0.058	0.228	11.523	0.001
Quality/High Need Beneficiaries (H8)	0.013	0.099	3.731	0.001
Size/Years of Participation (H9)	0.261	0.421	13.359	0.001
Size/High Needs Beneficiaries (H10)	0.213	0.11	4.435	0.001
Patient Satisfaction/Level of Sickness H11)	0.013	0.012	5.076	0.001
Patient Satisfaction/Years of Participation (H12)	0.063	0.276	12.581	0.001
Patient Satisfaction/High Need Beneficiaries (H13)	0.003	0.098	1.636	0.017
Primary Care Visits/Level of Sickness (H14)	0.008	0.189	3.237	0.001
Primary Care Visits/Years of Participation (H15)	0.059	0.256	11.97	0.001
Primary Care Visits/High Need Beneficiaries (H16)	0.004	0.015	0.573	0.012
Reimbursement Track/Level of Sickness (H17)	0.038	0.229	3.269	0.001
Reimbursement Track/Years of Participation (H18)	0.074	0.266	10.292	0.001
Reimbursement Track/High Need Beneficiaries (H19)	0.034	0.023	1.122	0.001

Mediating Effect

A linear regression was performed to analyze the impact of the mediator (financial performance) on the dependent variable (incentive payout). The results indicated that the relationship between financial performance was significant (0.000) and the R^2 was 0.901, meaning financial performance explains 90% of the variation in incentive payout.

Full Model

After performing individual linear regressions on each direct and moderating effect, a linear forward stepwise regression was performed on the full model. All direct effects and moderating interactions were included to determine which interactions had the greatest impact on the mediator resulting in the most efficient model. The results indicated that the most efficient model was significant (0.001) and the R^2 was

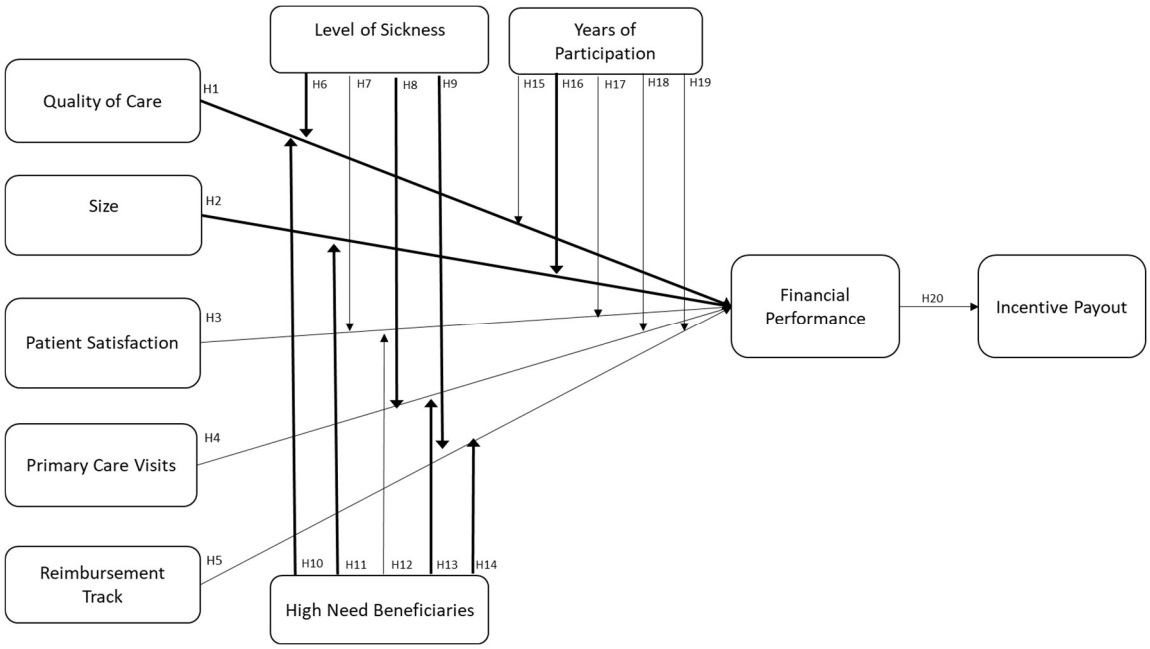
0.564, meaning the interactions in the table below explained 56.4% of the variation in financial performance.

Table 7: Full Model Regression Results

Forward Stepwise Regression Results
Quality (ADM)
Size
Reimbursement Track/Level of Sickness
Reimbursement Track/High Need Beneficiaries
Quality/Level of Sickness
Quality/High Need Beneficiaries
Size/Years of Participation
Size/High Needs Beneficiaries
Primary Care Visits/Level of Sickness
Primary Care Visits/High Needs Beneficiaries

The model below highlights (bold arrows) the direct effects and interactions with the greatest impact on Financial Performance.

Figure 3: Results: Forward Stepwise Model (Best relationships and interactions in bold)



Group Analysis

After reviewing the results of the direct effects and moderating effects it is clear that the direct effect of size (R^2 = 20%) and the moderating effects of years of participation (R^2 = 26%) and high need beneficiaries (R^2 = 21%) on the relationship between size and financial performance are most impactful. These results prompted another forward stepwise linear regression to determine if there were different factors contributing to ACO success based on the size of the ACO. Based on Table 3: Groups by Size, the split file function in SPSS was used to separate the results based on groups 1 through 4.

Table 8: Forward Stepwise Regression Results by Group

Group 1	R Squared	Significance
Quality (ADM)	0.414	0.001
Reimbursement Track/Level of Sickness		
Reimbursement Track/High Need Beneficiaries		
Quality/Level of Sickness		
Size/Years of Participation		
Primary Care Visits/Years of Participation		
Group 2	**R Squared**	**Significance**
Size	0.452	0.001
Reimbursement Track/Years of Participation		
Reimbursement Track/High Need Beneficiaries		
Size/High Need Beneficiaries		
Primary Care Visits/Level of Sickness		
Primary Care Visits/High Need Beneficiaries		
Group 3	**R Squared**	**Significance**
Quality (ADM)	0.505	0.001
Size		
Reimbursement Track/Years of Participation		
Reimbursement Track/High Need Beneficiaries		
Quality/Years of Participation		
Size/Years of Participation		
Size/High Need Beneficiaries		
Patient Satisfaction/Level of Sickness		
Patient Satisfaction/Years of Participation		
Primary Care Visits/High Need Beneficiaries		
Group 4	**R Squared**	**Significance**
Size	0.597	0.001
Primary Care Visits		
Reimbursement Track/Years of Participation		
Quality/Years of Participation		
Size/Years of Participation		
Patient Satisfaction/Years of Participation		
Patient Satisfaction/High Need Beneficiaries		
Primary Care Visits/Level of Sickness		

CHAPTER 6

Discussion, Limitations, and Conclusions

The results indicate that all the direct effects in the model were significant (< 0.005), thereby confirming all hypotheses. The strongest R squared results were the positive relationship between size and financial performance (R^2 = 20.7%) meaning size alone explained over 20% of the variation in financial performance. The relationship between reimbursement track and financial performance was also significant (0.001) but the R squared was far less than the relationship between size and financial performance (R^2 – 3.4%). These results suggest that if ACOs focus on growth and reimbursement method they are likely to have stronger financial performance.

All moderating effects in the model were also significant (< 0.005). By far the strongest results were for the moderating effect years of participation has on the relationship between size and financial performance (R^2 = 26.1) and the moderating effect high need beneficiaries has on the relationship between size and financial performance (R^2 = 21.3). These results suggest that ACOs that remained in MSSP for a number of years experienced more growth and achieved better financial performance. These results also suggest that larger ACOs with more high need beneficiaries achieved stronger financial performance. Put simply, growth over time, even with high need beneficiaries leads to stronger financial performance.

The forward stepwise regression of the relationships and interactions included in the model returned the most parsimonious model. Table 6 shows the full results but the most interesting were the two direct effects included in this result: size and quality. This is clear support for H1 (quality positively impacts financial performance) and H2 (size positively impacts financial performance). ACOs are more likely to achieve strong financial performance if they focus on quality and size.

As hospital affiliated provider organizations and independent physician organization form ACOs they should have a keen focus on growth. The larger ACOs consistently performed better in this analysis. The results also found that level of sickness and dual eligibles positively impact size. So, ACOs should focus on growth even if they attract a somewhat sicker population and/or more high need beneficiaries. The study shows that these two categories positively impact size. The revenue gains associated with pure size in addition to the increased revenue associated with sicker patients and high need beneficiaries lead to better financial performance and outweigh any additional costs associated with caring for these populations.

Quality was also prominent in the results suggesting that ACOs should focus on quality as well. This study used readmissions as a proxy for quality and the analysis suggests that ACOs with fewer readmissions performed better. This is somewhat obvious but controlling readmissions is not a futile exercise, especially with sick and high need beneficiaries. Many of these patients have multiple chronic conditions and they require sophisticated quality programs to monitor their conditions and keep them out of the emergency department and the hospital. The underlying presumption in this result is ACOs with good quality programs are able to control readmissions and manage chronic conditions.

The positive relationship between patient satisfaction and financial performance was significant but not as strong as the impact size and quality have on financial performance. Still ACOs should focus on patient satisfaction and patient experience. The proxy for patient satisfaction used in this analysis is ACO 2 which is the CAHPS survey question of how well providers communicate with their patients. The CAHPS survey is designed to reliably assess the experiences of a large sample of patients. There are other CAHPS survey questions so future research could test others. But these results suggest that ACOs should focus on patient satisfaction. This will lead to a more "sticky" population. As beneficiaries remain with the ACO and the ACO remains in the MSSP for a number of years, members will benefit from the quality and beneficiary experience programs the ACO offers and the ACO will ostensibly improve patients' care and experience over time.

The positive relationship between primary care visits and financial performance was significant in the model but, like patient satisfaction, not as impactful as size and quality. The forward stepwise regression did include the interaction of primary care visits and high need beneficiaries have on financial performance in its most efficient model. In addition, the interactions of primary care visits and high need beneficiaries, primary care visits and level of sickness, or primary care visits and years of participation were present in each of the group analyses based on size. These results provide strong support for hypotheses 4 and its related moderating relationships, especially level of sickness and high need beneficiaries. Sicker patients and high need beneficiaries benefit from more primary care visits to manage their chronic conditions and the social determinants they are dealing with.

Reimbursement track is one of the more interesting variables in the model. The positive relationship between reimbursement track and financial performance was significant but it was not as impactful as size and quality which was surprising. Also, over the lifespan of the MSSP there have been many changes in reimbursement tracks. This made the data clean-up process difficult to achieve consistency in this category. Despite the different reimbursement tracks and changes, the main difference in them is one sided versus two sided. One sided reimbursement tracks are upside only, meaning if the ACO does not meet its financial obligations, it does not have to reimburse the government. Two-sided means if the ACO does not meet its financial obligations it may have to reimburse the government. Based on this, the analysis was done based on one sided versus two sided instead of dealing with the machinations of reimbursement tracks over time. In the forward stepwise regression, the interaction of reimbursement track and level of sickness and reimbursement track and high need beneficiaries were present. This suggests that ACOs in the two-sided reimbursement tracks are more cognizant of sick patients and high need beneficiaries. This is reasonable because, clearly these members are more complex and could lead to financial losses if not managed well.

Because size was such a prominent factor in each analysis it was important to dig a little deeper to determine if the critical factors impacting ACO success varied by size. The ACO data was split by size

with Group 1 being the smallest and Group 4 the largest. The results in Table 7, Forward Stepwise Regression Results by Group, suggest that the relationships and interactions do, in fact, vary based on size. In this analysis, the direct effect of quality on financial performance was consistently present in each group except for Group 4. Even though the direct effect of quality was not included in Group 4, the interaction between quality and years of participation was present. Therefore, ACOs of all sizes should focus on quality.

This study was performed using Center for Medicare and Medicaid Services (CMS), Performance Year Financial and Quality Results Public Use Files (PUF) for 2016 through 2020. There are over 80 data elements in the PUFs so the variables in the model could possibly be operationalized with data elements other than the ones chosen to operationalize this study. Future research can be done using different data elements to test the model variables. The only data used were the PUFs so future research could use a mixed methods approach to include a qualitative deep dive on certain ACOs or perform a survey to obtain data not included in the PUFs. Also, this study focused longitudinally on 2016 through 2020. Future research could certainly add more years, especially as the program continues to grow over time.

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APPENDIX 1

Reimbursement Summary

Design Element	**One-Sided Model (performance years 1 & 2)**	**Two-Sided Model**
Maximum Sharing Rate	52.5%	65%
Quality Scoring	Sharing rate up to 50 percent based on quality performance.	Sharing rate up to 60 percent based on quality performance
FQHC/RHC Participation Incentives	Up to 2.5 percentage points	Up to 5 percentage points
Minimum Savings Rate	Varies by population	Flat 2% regardless of size
Minimum Loss Rate	None	Flat 2% regardless of size
Maximum Sharing Cap	Payment capped at 7.5% of ACO's benchmark	Payments capped at 10% of ACO's benchmark
Shared Savings	Savings shared once MSR is exceeded; unless exempted, share in savings net of a 2% threshold; up to 52.5% of net savings up to cap.	Savings shared once MSR is exceeded; up to 65% of gross savings up to cap.
Shared Losses	none	First dollar shared losses once the minimum loss rate is exceeded. Cap on the amount of losses to be shared phased in over three years starting at 5 percent in year 1; 7.5% in year 2; and 10% in year 3. Losses in excess of the annual cap would not be shared. Actual amount of shared losses would be based on final sharing rate that reflects ACO quality performance and any additional incentives for including FQHCs and/or RHCs using the following methodology (1 minus final sharing rate).

APPENDIX 2

Performance Year Financial and Quality Results PUF Data Dictionary				
Term Name	**Variable Name**	**Definition**	**Footnotes**	**Applicable Performance Year(s)**
ACO Number	ACO_Num	Encrypted ACO Identifier. Identifier is consistent across performance years.	NA	2014 - 2017
ACO ID	ACO_ID	Unencrypted ACO Identifier. This identifier can be linked to the encrypted ACO identifier used for prior performance years.	NA	2013 - present
ACO name	ACO_Name	ACO Doing Business As (DBA) or Legal Business Name (LBN).	NA	2013 - present
State(s) where beneficiaries reside	ACO_State	Assigned beneficiary state(s) of residence. Includes only states that include counties where at least 1% of ACO's assigned beneficiaries reside. States are sorted by descending number of assigned beneficiaries.	NA	2013 - present
Agreement type	Agree_Type	Indicates whether an ACO is "Initial", participating in an initial agreement period; "Renewal", in a second or subsequent agreement period Renewal; or "Re-entering",in an agreement period not defined as a renewal. If a re-entering ACO subsequently renews, the ACO is flagged as a Renewal.	NA	2016 - present
Participating for 6-Months	Participation_Six_Months	0/1 flag; =1 if ACO participated in a 6-month performance year (or performance period) from January 1, 2019, through June 30, 2019; =0 if ACO participated in a 12-month performance year Indicates whether an ACO was involved in a six or a 12-month performance year (PY) for PY 2019.	NA	2019
Agreement period number	Agreement_Period_Num	Numerical indicator of agreement period; =1 if ACO is in first agreement period; =2 if ACO is in second agreement period; etc. For re-entering ACOs, agreement period number is determined at the time of re-entry based on the number of agreement periods completed by the prior ACO.	NA	2016 - present
Initial start date	Initial_Start_Date	Agreement start date of first agreement period. For re-entering ACOs, initial start date is the start date of the agreement period for which the ACO re-entered the program.	NA	2016 - present
Track 1 in initial agreement period	Initial_Track_1	0/1 flag; =1 if ACO selected Track 1 (one-sided shared savings model) for initial agreement period; otherwise =0.	NA	2016 - 2019A
Track 2 in initial agreement period	Initial_Track_2	0/1 flag; =1 if ACO selected Track 2 (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2016 - 2019A
Track 3 in initial agreement period	Initial_Track_3	0/1 flag; =1 if ACO selected Track 3 (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2016 - 2019A
Track 1+ Model in initial agreement period	Initial_Track_1_Plus	0/1 flag; =1 if ACO selected Track 1+ Model (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2018 - 2019A
BASIC Level A in initial agreement period	Initial_BASIC_A	0/1 flag; =1 if ACO selected BASIC Level A (one-sided shared savings model) for initial agreement period; otherwise =0.	NA	2019A
BASIC Level B in initial agreement period	Initial_BASIC_B	0/1 flag; =1 if ACO selected BASIC Level B (one-sided shared savings model) for initial agreement period; otherwise =0.	NA	2019A
BASIC Level C in initial agreement period	Initial_BASIC_C	0/1 flag; =1 if ACO selected BASIC Level C (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2019A

BASIC Level D in initial agreement period	Initial_BASIC_D	0/1 flag; =1 if ACO selected BASIC Level D (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2019A
BASIC Level E in initial agreement period	Initial_BASIC_E	0/1 flag; =1 if ACO selected BASIC Level E (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2019A
ENHANCED in initial agreement period	Initial_ENHANCED	0/1 flag; =1 if ACO selected ENHANCED (two-sided shared savings / losses model) for initial agreement period; otherwise =0.	NA	2019A

Current start date	Current_Start_Date	Agreement start date of current agreement period. This will be the start date of the second or subsequent start date for ACOs classified as a Renewal. This will be the start date of the current agreement period for ACOs classified as re-entering.	NA	2013 - present
Track 1 in current performance year	Current_Track_1	0/1 flag; =1 if ACO selected Track 1 (one-sided shared savings model) for current performance year; otherwise =0.	NA	2013 - present
Track 2 in current performance year	Current_Track_2	0/1 flag; =1 if ACO selected Track 2 (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2013 - present
Track 3 in current performance year	Current_Track_3	0/1 flag; =1 if ACO selected Track 3 (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2016 - present
Track 1+ Model in current performance year	Current_Track_1_Plus	0/1 flag; =1 if ACO selected Track 1+ Model (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2018 - present
BASIC Level A in current performance year	Current_BASIC_A	0/1 flag; =1 if ACO selected BASIC Level A (one-sided shared savings model) for current performance year; otherwise =0.	NA	2019A - present
BASIC Level B in current performance year	Current_BASIC_B	0/1 flag; =1 if ACO selected BASIC Level B (one-sided shared savings model) for current performance year; otherwise =0.	NA	2019A - present
BASIC Level C in current performance year	Current_BASIC_C	0/1 flag; =1 if ACO selected BASIC Level C (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2019A - present
BASIC Level D in current performance year	Current_BASIC_D	0/1 flag; =1 if ACO selected BASIC Level D (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2019A - present
BASIC Level E in current performance year	Current_BASIC_E	0/1 flag; =1 if ACO selected BASIC Level E (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2019A - present
ENHANCED in current performance year	Current_ENHANCED	0/1 flag; =1 if ACO selected ENHANCED (two-sided shared savings / losses model) for current performance year; otherwise =0.	NA	2019A - present
Risk Model	Risk_Model	Indicates participation in a one-sided shared savings model or a two-sided shared savings/losses model for the performance year.	NA	2019 - present
Participate(d) in Advance Payment Model	Adv_Pay	0/1 flag; =1 if ACO participates or participated in Advance Payment Model; otherwise =0.	NA	2013 - present
Participate(d) in ACO Investment Model	AIM	0/1 flag; =1 if ACO participates or participated in ACO Investment Model (AIM); otherwise =0.	NA	2016 - present
Participate in Skilled Nursing Facility (SNF) 3-Day Rule Waiver	SNF_Waiver	0/1 flag; =1 if ACO participates in SNF 3-day waiver; otherwise =0.	NA	2018 - present
Total Assigned Beneficiaries	N_AB	Number of assigned beneficiaries, performance year.	NA	2013 - present
Savings Rate	Sav_rate	Total Benchmark Expenditures Minus Assigned Beneficiary Expenditures as a percent of Total Benchmark Expenditures.	NA	2013 - present

Minimum Savings Rate (%)	MinSavPerc	If ACO is in a one-sided model, the Minimum Savings Rate is determined on a sliding scale based on the number of assigned beneficiaries. If ACO is in a two-sided model, the Minimum Savings Rate (MSR) / Minimum Loss Rate (MLR) selected by the ACO at the time of application to a two-sided model applies for the duration of the ACO's agreement period. For such ACOs, the MSR and MLR can be set to: zero percent; symmetrical MSR/MLR in a 0.5 percent increment between 0.5-2.0 percent; or symmetrical MSR/MLR determined on a sliding scale based on the number of assigned beneficiaries.	NA	2013 - present
Benchmark Minus Expenditures	BnchmkMinExp	Total Benchmark Expenditures Minus Assigned Beneficiary Expenditures. If positive, represents total savings. If negative, represents total losses.	NA	2013 - present

Generated Total Savings/Losses	GenSaveLoss	Generated savings: Total savings (measured as Benchmark Minus Expenditures, from first to last dollar) for ACOs whose savings rate equaled or exceeded their MSR. This amount does not account for the application of the ACO's final sharing rate based on quality performance, reduction due to sequestration, application of performance payment limit, or repayment of advance payments. Generated losses: Total losses (measured as Benchmark Minus Assigned Expenditures, from first to last dollar) for ACOs in two-sided models whose losses rate equaled or exceeded their MLR. This amount does not account for the application of the ACO's final sharing rate based on quality performance or the loss sharing limit. Note that in the PY 2018, 2019, and 2019A files, Generated losses was calculated as: Total losses (measured as Benchmark Minus Assigned Expenditures, from first to last dollar) for ACOs in two-sided models whose losses rate equaled or exceeded their MLR and the negative of the MSR (for ACOs in one-sided models).	NA	2013 - present
Extreme and Uncontrollable Circumstance Adjustment - Financial	DisAdj	If ACO is in one-sided model, blank (–). If ACO is in two-sided model with losses outside their MLR, equal to shared losses after applying the loss sharing limit, multiplied by percentage of beneficiaries in counties affected by an Extreme and Uncontrollable Circumstance and share of year affected by an Extreme and Uncontrollable Circumstance.	NA	2017 - present

Earned Shared Savings Payments/Owed Losses	EarnSaveLoss	Total earned shared savings: The ACO's share of savings for ACOs whose savings rate equaled or exceeded their MSR, and who were eligible for a performance payment because they met the program's quality performance standard. This amount accounts for the application of the ACO's final sharing rate based on quality performance (based on ACO track), as well as the reduction in performance payment due to sequestration and application of the performance payment limit. This amount does not account for repayment of advance payments. Total earned shared losses: The ACO's share of losses for ACOs in two-sided tracks whose losses rate equaled or exceeded their MLR, which is the negative of the MSR chosen. This amount accounts for the application of the ACO's final loss sharing rate based on quality performance (based on ACO track) the loss sharing limit and the Extreme and Uncontrollable Circumstance adjustment.	NA	2013 - present
Extreme and Uncontrollable Circumstance Affected - Quality	DisAffQual	0/1 flag; = 1 if at least 20% of assigned beneficiaries (based on Q3 assignment for the performance year) reside in a county affected by an Extreme and Uncontrollable Circumstance or ACO legal entity is located in such a county. Otherwise equal to 0. In 2019 and 2020, all ACOs receive value of 1 due to the public health emergency for COVID-19.	NA	2018 - present

Met the Quality Performance Standard	Met_QPS	0/1 flag; =1 if ACO met the quality performance standard; otherwise =0. An ACO must meet the quality performance standard to be eligible to share in any savings generated. Any ACO that did not completely report quality data did not meet the quality performance standard unless the ACO was determined to be impacted by an Extreme and Uncontrollable Circumstance. The quality performance standard for ACOs in their first performance year is based on complete and accurate reporting of all required quality measures. ACOs beyond the first performance year of their first agreement period must also meet minimum attainment (which is the 30th percentile benchmark for pay-for-performance measures and complete reporting for pay-for-reporting measures) on at least one measure in each domain. For ACOs determined to have been affected by an Extreme and Uncontrollable Circumstance, the ACO will automatically meet the quality performance standard.	NA	2016 - present
Quality Score	QualScore	Quality score: In Performance Year 1 of an ACO's first agreement period, the quality score is 100% if all measures were completely reported and less than 100% if one or more measures were not completely reported. Beyond Performance Year 1 of an ACO's first agreement period, the quality score will be determined not only by whether all measures were completely reported but also on their performance against established benchmarks and on quality improvement. For ACOs determined to have been affected by an Extreme and Uncontrollable Circumstance, the quality score is the higher of the ACO's calculated initial quality score or the national mean quality score across all Shared Savings Program ACOs who met the quality performance standard before application of the Extreme and Uncontrollable Circumstances policy.	NA	2016 - present
Extreme and Uncontrollable Circumstance-Adjustment-Quality	RecvdMean	0/1 flag; =1 if ACO was affected by an Extreme and Uncontrollable Circumstance and had a quality score equal to the national mean quality score across all Shared Savings Program ACOs. =0 if ACO was either not affected by an Extreme and Uncontrollable Circumstance or was affected by an Extreme and Uncontrollable Circumstance and did not receive the mean quality score.	NA	2018 - present

Per Capita Prior Savings Adjustment (Prorated)	Prior_Sav_Adj	Per Capita Prior Savings Adjustment (Prorated): This applies only to ACOs with 2012 or 2013 start dates that renewed for a second agreement period in 2016; value is blank for all other ACOs. If average per capita savings (simple average of Total Historical Benchmark minus Total Expenditures, not to exceed the performance payment limit for the ACO's track, divided by assigned beneficiary person years for each performance year in the first agreement period) in the first agreement period is greater than zero, then multiply average per capita savings by average final sharing rate from first agreement period (simple average of Final Sharing Rate based on quality performance for each performance year in first agreement period). The additional per capita amount will be applied to the ACOs rebased historical benchmark for a number of assigned beneficiaries (expressed as person years) not to exceed the average number of assigned beneficiaries (expressed as person years) under the ACO's first agreement period.	NA	2016 - 2019
Regional Trend and Update Factors	RegTrndUpdt	0/1 flag; =1 if benchmark trend and update factors are based on regional expenditures; otherwise =0.	NA	2017 - present
Positive Regional Adjustment	PosRegAdj	0/1 flag; =1 if ACO received a positive regional adjustment to its historical benchmark (meaning ACO had lower spending than its region); otherwise =0 indicating ACO received a negative regional adjustment to its historical benchmark (meaning the ACO had higher spending than its region). This applies only to ACOs that renewed for a second agreement period in 2017, 2018, or 2019, and to ACOs that entered an agreement period beginning on or after July 1, 2019; value is blank for all other ACOs.	NA	2017 - present
Updated benchmark expenditures	UpdatedBnchmk	Benchmark expenditures are risk-adjusted in the historical benchmark period and performance period to account for changes in the ACO's assigned populations over time. Updated benchmark also includes the projected absolute amount of growth in national per capita expenditures for Parts A and B services under the original fee-for-service program (for ACOs in a first agreement period from PY 1 - PY 2019 and for ACOs that entered a second agreement period in 2016), a regional update factor (for ACOs that entered a second agreement period in 2017, 2018, or 2019), or a blended national-regional update factor (for all ACOs that entered an agreement period beginning on or after July 1, 2019).	NA	2013 - present
Historical benchmark	HistBnchmk	Single per capita historical benchmark value reflecting ACO's applicable benchmarking methodology. For ACOs that entered a first agreement in 2018 or prior years, the benchmark is calculated using national assignable fee-for-service (FFS) expenditure trend factors. For ACOs that entered a second agreement period in 2017, 2018 or January 2019, the benchmark iscalculated using regional assignable FFS expenditure trend factors and incorporates a regional adjustment. For ACOs that entered an agreement period on or after July 2019, the benchmark is calculated using a blend of national and regional assignable FFS expenditure trend factors and incorporates a regional adjustment subject to a cap.	NA	2013 - present

Total benchmark expenditures	ABtotBnchmk	Per capita benchmark (UpdatedBnchmk) multiplied by total person years (N_AB_Year).	NA	2013 - present
Total expenditures	ABtotExp	Per capita performance year expenditures (Per_Capita_Exp_TOTAL) multiplied by total person years (N_AB_Year).	NA	2013 - present
Advance payment amount	Adv_Pay_Amt	Maximum amount of advance payment/AIM available for recoupment at the time of financial reconciliation.	NA	2013 - present
Advance payment recoupment	Adv_Pay_Recoup	Amount of advance payment/AIM actually recouped at the time of financial reconciliation. Populated for advance payment/AIM ACOs that shared savings and is no greater than the maximum amount owed.	NA	2013 - present
Quality sharing rate	QualPerfShare	Maximum percentage of savings an ACO can share based on the ACO's track, before accounting for quality performance. Set to 40% for BASIC Track Levels A and B, 50% for Track 1, Track 1+ Model and BASIC Track Levels C, D, and E, 60% for Track 2, and 75% for Track 3/ENHANCED Track.	NA	2013 - present
Final sharing rate	FinalShareRate	Quality performance sharing rate (QualPerfShare) multiplied by quality score (QualScore). The percentage of savings an ACO shares if the ACO is eligible for shared savings. Will equal zero if ACO failed to meet quality performance standard.	NA	2013 - present
Revenue-based loss sharing limit	RevLossLimit	0/1 flag; =1 if ACO is subject to a revenue-based loss sharing limit; Otherwise =0. A Track 1+ Model is subject to a revenue-based loss sharing limit if none of the following criteria are met: the ACO includes an ACO participant that is an inpatient prospective payment system (IPPS) hospital, cancer center, or a rural hospital with more than 100 beds, or is owned or operated by, in whole or in part, such a hospital or by an organization that owns or operates such a hospital. If any of these criteria are met, the Track 1+ Model ACO is subject to a benchmark-based loss sharing limit. ACOs in BASIC Track Level C, Level D, and Level E are subject to a revenue-based loss sharing limit.	NA	2018 - present
Indicates whether a high or low revenue ACO	Rev_Exp_Cat	If ACO participant total Medicare Parts A and B FFS revenue for the performance year is less than 35% of the total Medicare Parts A and B FFS expenditures for the ACO's assigned beneficiaries for the performance year, "Low Revenue". If ACO participant total Medicare Parts A and B FFS revenue for the performance year is 35% or more of the total Medicare Parts A and B FFS expenditures for the ACO's assigned beneficiaries for the performance year, "High Revenue".	NA	2018 - present
Per capita ESRD expenditures in benchmark year 1	Per_Capita_Exp_ALL_ESRD_BY1	Annualized, truncated, weighted mean total expenditures per End-Stage Renal Disease (ESRD) assigned beneficiary person years in benchmark year 1.	NA	2013 - present
Per capita DISABLED expenditures in benchmark year 1	Per_Capita_Exp_ALL_DIS_BY1	Annualized, truncated, weighted mean total expenditures per DISABLED assigned beneficiary person years in benchmark year 1.	NA	2013 - present
Per capita AGED/DUAL expenditures in benchmark year 1	Per_Capita_Exp_ALL_AGDU_BY1	Annualized, truncated, weighted mean total expenditures per AGED/DUAL assigned beneficiary person years in benchmark year 1.	NA	2013 - present
Per capita AGED/NON-DUAL expenditures in benchmark year 1	Per_Capita_Exp_ALL_AGND_BY1	Annualized, truncated, weighted mean total expenditures per AGED/NON-DUAL assigned beneficiary person years in benchmark year 1.	NA	2013 - present

Per capita ESRD expenditures in benchmark year 2	Per_Capita_Exp_ALL_ESRD_BY2	Annualized, truncated, weighted mean total expenditures per ESRD assigned beneficiary person years in benchmark year 2.	NA	2013 - present

Per capita DISABLED expenditures in benchmark year 2	Per_Capita_Exp_ALL_DIS_BY2	Annualized, truncated, weighted mean total expenditures per DISABLED assigned beneficiary person years in benchmark year 2.	NA	2013 - present
Per capita AGED/DUAL expenditures in benchmark year 2	Per_Capita_Exp_ALL_AGDU_BY2	Annualized, truncated, weighted mean total expenditures per AGED/DUAL assigned beneficiary person years in benchmark year 2.	NA	2013 - present
Per capita AGED/NON-DUAL expenditures in benchmark year 2	Per_Capita_Exp_ALL_AGND_BY2	Annualized, truncated, weighted mean total expenditures per AGED/NON-DUAL assigned beneficiary person years in benchmark year 2.	NA	2013 - present
Per capita ESRD expenditures in benchmark year 3	Per_Capita_Exp_ALL_ESRD_BY3	Annualized, truncated, weighted mean total expenditures per ESRD assigned beneficiary person years in benchmark year 3.	NA	2013 - present
Per capita DISABLED expenditures in benchmark year 3	Per_Capita_Exp_ALL_DIS_BY3	Annualized, truncated, weighted mean total expenditures per DISABLED assigned beneficiary person years in benchmark year 3.	NA	2013 - present
Per capita AGED/DUAL expenditures in benchmark year 3	Per_Capita_Exp_ALL_AGDU_BY3	Annualized, truncated, weighted mean total expenditures per AGED/DUAL assigned beneficiary person years in benchmark year 3.	NA	2013 - present
Per capita AGED/NON-DUAL expenditures in benchmark year 3	Per_Capita_Exp_ALL_AGND_BY3	Annualized, truncated, weighted mean total expenditures per AGED/NON-DUAL assigned beneficiary person years in benchmark year 3.	NA	2013 - present
Per capita ESRD expenditures in performance year	Per_Capita_Exp_ALL_ESRD_PY	Annualized, truncated, weighted mean total expenditures per ESRD assigned beneficiary person years in the performance year.	NA	2013 - present
Per capita DISABLED expenditures in performance year	Per_Capita_Exp_ALL_DIS_PY	Annualized, truncated, weighted mean total expenditures per DISABLED assigned beneficiary person years in the performance year.	NA	2013 - present
Per capita AGED/DUAL expenditures in performance year	Per_Capita_Exp_ALL_AGDU_PY	Annualized, truncated, weighted mean total expenditures per AGED/DUAL assigned beneficiary person years in the performance year.	NA	2013 - present
Per capita AGED/NON-DUAL expenditures in performance year	Per_Capita_Exp_ALL_AGND_PY	Annualized, truncated, weighted mean total expenditures per AGED/NON-DUAL assigned beneficiary person years in the performance year.	NA	2013 - present
Per capita ALL expenditures in performance year	Per_Capita_Exp_TOTAL_PY	Annualized, truncated, weighted mean total expenditures per assigned beneficiary person years in the performance year.	NA	2013 - present
Average ESRD HCC risk score in benchmark year 1	CMS_HCC_RiskScore_ESRD_BY1	Final, mean prospective CMS- Hierarchical Condition Category (HCC) risk score forESRD enrollment type in benchmark year 1.	NA	2013 - present
Average DISABLED HCC risk score in benchmark year 1	CMS_HCC_RiskScore_DIS_BY1	Final, mean prospective CMS-HCC risk score for DISABLED enrollment type in benchmark year 1.	NA	2013 - present
Average AGED/DUAL HCC risk score in benchmark year 1	CMS_HCC_RiskScore_AGDU_BY1	Final, mean prospective CMS-HCC risk score for AGED/DUAL enrollment type in benchmark year 1.	NA	2013 - present
Average AGED/NON-DUAL HCC risk score in benchmark year 1	CMS_HCC_RiskScore_AGND_BY1	Final, mean prospective CMS-HCC risk score for AGED/NON-DUAL enrollment type in benchmark year 1.	NA	2013 - present
Average ESRD HCC risk score in benchmark year 2	CMS_HCC_RiskScore_ESRD_BY2	Final, mean prospective CMS-HCC risk score for ESRD enrollment type in benchmark year 2.	NA	2013 - present
Average DISABLED HCC risk score in benchmark year 2	CMS_HCC_RiskScore_DIS_BY2	Final, mean prospective CMS-HCC risk score for DISABLED enrollment type in benchmark year 2.	NA	2013 - present
Average AGED/DUAL HCC risk score in benchmark year 2	CMS_HCC_RiskScore_AGDU_BY2	Final, mean prospective CMS-HCC risk score for AGED/DUAL enrollment type in benchmark year 2.	NA	2013 - present
Average AGED/NON-DUAL HCC risk score in benchmark year 2	CMS_HCC_RiskScore_AGND_BY2	Final, mean prospective CMS-HCC risk score for AGED/NON-DUAL enrollment type in benchmark year 2.	NA	2013 - present

Average ESRD HCC risk score in benchmark year 3	CMS_HCC_RiskScore_ESRD_BY3	Final, mean prospective CMS-HCC risk score for ESRD enrollment type in benchmark year 3.	NA	2013 - present
Average DISABLED HCC risk score in benchmark year 3	CMS_HCC_RiskScore_DIS_BY3	Final, mean prospective CMS-HCC risk score for DISABLED enrollment type in benchmark year 3.	NA	2013 - present

Average AGED/DUAL HCC risk score in benchmark year 3	CMS_HCC_RiskScore_AGDU_BY3	Final, mean prospective CMS-HCC risk score for AGED/DUAL enrollment type in benchmark year 3.	NA	2013 - present
Average AGED/NON-DUAL HCC risk score in benchmark year 3	CMS_HCC_RiskScore_AGND_BY3	Final, mean prospective CMS-HCC risk score for AGED/NON-DUAL enrollment type in benchmark year 3.	NA	2013 - present
Average ESRD HCC risk score in performance year	CMS_HCC_RiskScore_ESRD_PY	Final, mean prospective CMS-HCC risk score for ESRD enrollment type in the performance year.	NA	2013 - present
Average DISABLED HCC risk score in performance year	CMS_HCC_RiskScore_DIS_PY	Final, mean prospective CMS-HCC risk score for DISABLED enrollment type in the performance year.	NA	2013 - present
Average AGED/DUAL HCC risk score in performance year	CMS_HCC_RiskScore_AGDU_PY	Final, mean prospective CMS-HCC risk score for AGED/DUAL enrollment type in the performance year.	NA	2013 - present
Average AGED/NON-DUAL HCC risk score in performance year	CMS_HCC_RiskScore_AGND_PY	Final, mean prospective CMS-HCC risk score for AGED/NON-DUAL enrollment type in the performance year.	NA	2013 - present
ESRD person years in benchmark year 3	N_AB_Year_ESRD_BY3	Number of assigned beneficiaries with ESRD enrollment type in benchmark year 3 adjusted for the total number of months that each beneficiary was classified as ESRD; Number of ESRD person-months divided by 12.	NA	2013 - present
DISABLED person years in benchmark year 3	N_AB_Year_DIS_BY3	Number of assigned beneficiaries with DISABLED enrollment type in benchmark year 3 adjusted for the total number of months that each beneficiary was classified as DISABLED; Number of DISABLED person-months divided by 12.	NA	2013 - present
AGED/DUAL person years in benchmark year 3	N_AB_Year_AGED_Dual_BY3	Number of assigned beneficiaries with AGED/DUAL enrollment type in benchmark year 3 adjusted for the total number of months that each beneficiary was classified as AGED/DUAL; Number of AGED/DUAL person-months divided by 12.	NA	2013 - present
AGED/NON-DUAL person years in benchmark year 3	N_AB_Year_AGED_NonDual_BY3	Number of assigned beneficiaries with AGED/NON-DUAL enrollment type in benchmark year 3 adjusted for the total number of months that each beneficiary was classified as AGED/NON-DUAL; Number of AGED/NON-DUAL person-months divided by 12.	NA	2013 - present
Total person years in performance year	N_AB_Year_PY	Number of assigned beneficiaries in the performance year adjusted downwards for beneficiaries with less than a full 12 months of eligibility; Number of person-months divided by 12.	NA	2013 - present
ESRD person years in performance year	N_AB_Year_ESRD_PY	Number of assigned beneficiaries with ESRD enrollment type in the performance year adjusted for the total number of months that each beneficiary was classified as ESRD; Number of ESRD person-months divided by 12.	NA	2013 - present
DISABLED person years in performance year	N_AB_Year_DIS_PY	Number of assigned beneficiaries with DISABLED enrollment type in the performance year adjusted for the total number of months that each beneficiary was classified as DISABLED; Number of DISABLED person-months divided by 12.	NA	2013 - present
AGED/DUAL person-- years in performance year	N_AB_Year_AGED_Dual_PY	Number of assigned beneficiaries with AGED/DUAL enrollment type in the performance year adjusted for the total number of months that each beneficiary was classified as AGED/DUAL; Number of AGED/DUAL person-months divided by 12.	NA	2013 - present

AGED/NON-DUAL person years in performance year	N_AB_Year_AGED_NonDual_PY	Number of assigned beneficiaries with AGED/NON-DUAL enrollment type in the performance year adjusted for the total number of months that each beneficiary was classified as AGED/NON-DUAL; Number of AGED/NON-DUAL person-months divided by 12.	NA	2013 - present

Total assigned beneficiaries, age 0-64	N_Ben_Age_0_64	Total number of assigned beneficiaries, age 0-64 in the calendar year (CY); age calculated as of February 1 of the calendar year. Based on mostcurrent date of birth in Medicare records.	NA	2013 - present
Total assigned beneficiaries, age 65-74	N_Ben_Age_65_74	Total number of assigned beneficiaries, age 65-74 in the calendar year; age calculated as of February 1 of the calendar year. Based on most current date of birth in Medicare records.	NA	2013 - present
Total assigned beneficiaries, age 75-84	N_Ben_Age_75_84	Total number of assigned beneficiaries, age 75-84 in the calendar year; age calculated as of February 1 of the calendar year. Based on most current date of birth in Medicare records.	NA	2013 - present
Total assigned beneficiaries, age 85+	N_Ben_Age_85plus	Total number of assigned beneficiaries, age 85+ in the calendar year age calculated as of February 1 of the calendar year. Based on most current date of birth in Medicare records.	NA	2013 - present
Total assigned beneficiaries, female	N_Ben_Female	Total number of assigned beneficiaries, female (Gender=2) in the calendar year. Based on most current gender in Medicare records.	NA	2013 - present
Total assigned beneficiaries, male	N_Ben_Male	Total number of assigned beneficiaries, male (Gender=1) in the calendar year. Based on most current gender in Medicare records.	NA	2013 - present
Total assigned beneficiaries, Non-Hispanic White	N_Ben_Race_White	Total number of assigned beneficiaries, Non-Hispanic White (Race=1) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total assigned beneficiaries, Black	N_Ben_Race_Black	Total number of assigned beneficiaries, Black (Race=2) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total assigned beneficiaries, Asian	N_Ben_Race_Asian	Total number of assigned beneficiaries, Asian (Race=4) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total assigned beneficiaries, Hispanic	N_Ben_Race_Hisp	Total number of assigned beneficiaries, Hispanic (Race=5) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total assigned beneficiaries, North American Native	N_Ben_Race_Native	Total number of assigned beneficiaries, North American Native (Race=6) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total assigned beneficiaries, Other	N_Ben_Race_Other	Total number of assigned beneficiaries, Other (Race= 0,3,~) in the calendar year. Based on most current race in Medicare records.	NA	2013 - present
Total Inpatient expenditures	CapAnn_INP_All	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for inpatient services for assigned beneficiaries in the performance year. Includes all hospital provider types including but not limited to short-term acute care hospital, long-term care hospital, rehabilitation hospital or unit, and psychiatric hospital or unit. Because total hospital inpatient facility expenditures and expenditures by hospital provider type are each truncated at the same level as total expenditures, expenditures by hospital provider type may not sum to total hospital inpatient facility expenditures. Inpatient claims are identified by claim type code 60.	NA	2013 - present

Short term acute care hospital (IPPS/CAH) expenditures	CapAnn_INP_S_trm	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for acute care inpatient services in a short-term acute care (Inpatient Prospective Payment System (IPPS) or Critical Access Hospital (CAH)) setting for assigned beneficiaries in the performance year. Inpatient claims are identified by claim type code 60. Short-term acute care hospitals are identified by CMS Certification Number (CCN) where the 3rd through 6th digits are between 0001 - 0879. CAHs are identified by CCNs where the 3rd through 6th digits are between 1300 - 1399.	NA	2013 - present
Long term care hospital expenditures	CapAnn_INP_L_trm	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for inpatient services in a long-term care setting for assigned beneficiaries in the performance year. Inpatient claims are identified by claim type code 60. Long-term care hospitals are identified by CCNs where the 3rd through 6th digits are between 2000 - 2299.	NA	2013 - present
Inpatient rehabilitation facility (IRF) expenditures	CapAnn_INP_Rehab	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for inpatient services in a rehabilitation facility or unit for assigned beneficiaries in the performance year. Inpatient claims are identified by claim type code 60. Inpatient rehabilitation facilities are identified by CCNs where the 3rd through 6th digits are between 3025 - 3099 or where the 3rd byte is equal to R or T.	NA	2013 - present
Inpatient psychiatric hospital expenditures	CapAnn_INP_Psych	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for inpatient services in a psychiatric hospital facility or unit for assigned beneficiaries in the performance year. Inpatient claims are identified by claim type code 60. Psychiatric hospitals are identified by CCNs where the 3rd through 6th digits are between 4000 - 4499 or where the 3rd byte is equal to M or S.	NA	2013 - present
Hospice expenditures	CapAnn_HSP	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for hospice services for assigned beneficiaries in the performance year. Hospice claims are identified by claim type code 50.	NA	2013 - present
Skilled nursing facility or unit expenditures	CapAnn_SNF	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for services in a SNF setting for assigned beneficiaries in the performance year. SNF claims are identified by claim type codes 20 and 30).	NA	2013 - present
Other inpatient expenditures	CapAnn_INP_Other	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for other inpatient services in a short-term acute care setting for assigned beneficiaries in the performance year. Inpatient claims are identified by claim type code 60.	NA	2013 - 2019
Outpatient expenditures	CapAnn_OPD	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for outpatient services for assigned beneficiaries in the performance year. Includes all outpatient facility types including, but not limited to, hospital outpatient departments, outpatient dialysis facilities, Federally Qualified Health Center (FQHC), Rural Health Clinic (RHC), outpatient rehabilitation facilities, and community mental health centers. Outpatient claims are identified by claim type code 40.	NA	2013 - present

Physician/supplier expenditures	CapAnn_PB	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for Part B physician/supplier (Carrier) services for assigned beneficiaries in the performance year. Includes all Part B physician/supplier services including, but not limited to, evaluation and management, procedures, imaging, laboratory and other test, Part B drugs, and ambulance services. In addition to physician and other practitioner services, includes free-standing ambulatory surgery centers, independent clinical laboratories, and other suppliers. Includes physician/practitioner services provided in either an inpatient or outpatient setting. Physician/supplier claims are identified by claim type codes 71 and 72.	NA	2013 - present
Ambulance expenditures	CapAnn_AmbPay	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for ambulance services for assigned beneficiaries in the performance year. Ambulance services are identified in the Part B physician/supplier (Carrier) claims (claim type codes 71 and 72) by Berenson-Eggers Type of Service (BETOS) code O1A.	NA	2013 - present
Home health expenditures	CapAnn_HHA	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for home health agency services for assigned beneficiaries in the performance year. Home health claims are identified by claim type code 10.	NA	2013 - present
Durable medical equipment expenditures	CapAnn_DME	Annualized, truncated, weighted mean expenditures per assigned beneficiary person years for durable medical equipment (DME) for assigned beneficiaries in the performance year. DME claims are identified by claim type codes 81 and 82.	NA	2013 - present
Inpatient hospital discharges	ADM	Total number of inpatient hospital discharges per 1,000 person years in the performance year. A beneficiary is flagged for having a hospitalization if the beneficiary had at least one inpatient claim during the performance year. Each hospitalization is defined as a set of claims with the same Health Insurance Claim Number (HICN), same admission date, and same provider number. Adjusted for short-term acute-care transfers by combining two admissions into one when the second admission was within one day of the discharge date of the first admission. Inpatient claims are identified by claim type code 60. Hospitals are identified on inpatient claims through the last four characters of the CMS Certification Number (CCN). The relevant ranges for the last four characters of the CCN on the claims are: 0001-0899; 9800-9899; 1225-1299; 1300-1399; 2000-2299; 3025-3099; T001-T899; R225-R399; 4000-4499; S001-S899; M225-M399; 1990-1999; 3300-3399.	NA	2013 - present

Short term acute care hospital discharges	ADM_S_Trm	Total number of short-term acute care hospital discharges per 1,000 person years in the performance year. A beneficiary is flagged for having a hospitalization in a short-term acute-care hospital if the beneficiary had at least one inpatient claim during the performance year. Each hospitalization is defined as a set of claims with the same HICN, same admission date, and same provider number. Short-term acute care hospitals are identified by CCNs where the 3rd through 6th digits are between 0001 - 0879. CAHs are identified by CCNS where the 3rd through 6th digits are between 1300 - 1399. Inpatient claims are identified by claim type code 60 or 61.	NA	2013 - present

LTCH discharges	ADM_L_Trm	Total number of long-term care hospital (LTCH) discharges per 1,000 person years in the performance year. A beneficiary is flagged for having a hospitalization in a long-term hospital if the beneficiary had at least one inpatient claim during the performance year. Each hospitalization is defined as a set of claims with the same HICN, same admission date, and same provider number. Inpatient claims are identified by claim type code 60. Long-term care hospitals are identified by CCNs where the 3rd through 6th digits are between 2000 - 2299.	NA	2013 - present
IRF discharges	ADM_Rehab	Total number of inpatient rehabilitation facility (IRF) discharges per 1,000 person years in the performance year. A beneficiary is flagged for having a hospitalization in a rehabilitation hospital or unit if the beneficiary had at least one inpatient claim during the performance year. Each hospitalization is defined as a set of claims with the same HICN, same admission date, and same provider number. Inpatient claims are identified by claim type code 60. Inpatient rehabilitation facilities are identified by CCNs where the 3rd through 6th digits are between 3025 - 3099 or where the 3rd byte is equal to R or T.	NA	2013 - present
IPF discharges	ADM_Psych	Total number of inpatient psychiatric facility (IPF) discharges per 1,000 person years in the performance year. A beneficiary is flagged for having a hospitalization in a psychiatric hospital or unit if the beneficiary had at least one inpatient claim during the performance year. Each hospitalization is defined as a set of claims with the same HICN, same admission date, and same provider number. Inpatient claims are identified by claim type code 60. Psychiatric hospitals are identified by CCNs where the 3rd through 6th digits are between 4000 - 4499 or where the 3rd byte is equal to M or S.	NA	2013 - present

CHF discharges	chf_adm	Total number of discharges for congestive heart failure (CHF) per 1,000 person years in the performance year. Measure specifications are based on Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators Technical Specifications—Version 6.0. This metric differs from the measure used for the quality performance standard. It is not risk-adjusted. For annual quality measurement, CMS will use the risk-adjusted AHRQ Prevention Quality Indicator #8. Denominator: Number of beneficiaries assigned to the ACO during the measurement period (measured as person years). Numerator: All patients discharged with a principal diagnosis of CHF from a short-term acute-care hospital (including CAHs).	NA	2013 - present
COPD/Asthma discharges	copd_adm	Total number of discharges for chronic obstructive pulmonary disease (COPD) or asthma per 1,000 person years in the performance year. Measure specifications are based on AHRQ Prevention Quality Indicators Technical Specifications—Version 6.0. Denominator: Number of beneficiaries assigned to the ACO during the measurement period (measured as person years). Numerator: All discharges with a principal diagnosis of COPD or asthma from a short-term acute-care hospital (including CAHS).	NA	2013 - present

Post-discharge provider visits (30 day)	prov_Rate_1000	Rate of provider visits within 30 days of discharge from a short-term acute-care hospital (including critical access hospitals) per 1,000 discharges among eligible beneficiaries assigned to the ACO in the performance year. In the event there is no more than one day between a discharge and the next admission, then the two hospital visits will be combined and considered as a single stay (contiguous admissions). For example, if there are contiguous admissions the earliest admission date and the latest discharge date will be used for the below calculations. Adjusted for transfers by combining two admissions into one when the second admission was within one day of the discharge date of the first admission. Denominator: Number of qualifying discharges from a short-term acute care hospital (including CAHs) among an ACO's assigned beneficiaries. To be considered a qualifying discharge, the hospitalization must occur in the first 11 months the performance year and the beneficiary must be alive at the time of discharge. Numerator: Includes all of the qualifying discharges in the denominator that were followed by at least one provider visit made by the assigned beneficiary within 30 days of the discharge or prior to readmission (if the readmission occurs within 30 days of the discharge).	NA	2013 - present

Outpatient ED visits	P_EDV_Vis	Total number of visits to an outpatient emergency department (ED) per 1,000 person years in the performance year. An Emergency Department Visit (EDV) is defined using both Inpatient & Outpatient claims and using the Revenue Center Code field on the claims: EDVs in the hospital inpatient and hospital outpatient claims with revenue center code values 0450-0459 and 0981. The restriction is imposed that a beneficiary could have a maximum of one EDV on a specific date.	NA	2013 - present
Inpatient ED visits	P_EDV_Vis_HOSP	Total number of visits to an ED that result in an inpatient stay per 1,000 person years in the performance year. EDVs that Lead to Hospitalizations is identified in the hospital inpatient claims with revenue center code values 0450-0459 and 0981.	NA	2013 - present
CT events	P_CT_VIS	Total number of computed tomography (CT) events per 1,000 person years in the performance year. CT imaging events are defined based on BETOS codes I2A (advanced imaging-CAT: head) and I2B (advanced imaging-CAT: other).	NA	2014 - present
MRI events	P_MRI_VIS	Total number of magnetic resonance imaging (MRI) events per 1,000 person years in the performance year. MRI imaging events are defined based on BETOS codes I2C (advanced imaging-MRI: brain) and I2D (advanced imaging-MRI: other).	NA	2013 - present
Primary care services	P_EM_Total	Total number of primary care services per 1,000 person years in the performance year. Primary care services are counted regardless of physician specialty.	NA	2013 - present
Primary care services with a primary care physician (PCP)	P_EM_PCP_Vis	Total number of primary care services provided by a PCP per 1,000 person years in the performance year. Defined as a qualifying visit with a primary care physician with a CMS specialty code of 1 (general practice), 8 (family practice), 11 (internal medicine), or 38 (geriatric medicine). This includes primary care services provided at Method II CAHs.	NA	2013 - present
Primary care services with a specialist	P_EM_SP_Vis	Total number of primary care services provided by a specialist per 1,000 person years in the performance year.	NA	2013 - present
Primary care services with a NP/PA/CNS	P_Nurse_Vis	Total number of primary care services provided by a nurse practitioner (NP), physician's assistant (PA), or clinical nurse specialist (CNS) per 1,000 person years in the performance year. Defined as a qualifying visit with practitioner with a CMS specialty code of 50 (NP), 89 (CNS), and 97 (PA).	NA	2013 - present
Primary care services with a FQHC/RHC	P_FQHC_RHC_Vis	Total number of primary care services provided at a FQHC or RHC per 1,000 person years in the performance year.	NA	2013 - present
Skilled nursing facility discharges	P_SNF_ADM	Total number of discharges from a skilled nursing facility per 1,000 person years in the performance year. Each SNF stay is defined as a set of claims with the same HICN, same admission date, and same provider number. We adjust for transfers by combining two stays into one when the second admission was within one day of the discharge date of the first admission.	NA	2013 - present

Acute composite discharges	acute_adm	Total number of discharges for dehydration, bacterial pneumonia, and urinary tract infections per 1,000 person years in the performance year. Measure specifications are based on AHRQ Prevention Quality Indicators Technical Specifications—Version 6.0. This measure differs from the measure used for the quality performance standard. It is not risk-adjusted. For annual quality measurement, CMS will use the risk-adjusted AHRQ Prevention Quality Indicator #91. Denominator: Number of beneficiaries assigned to the ACO during the measurement period (measured as person years). Numerator: All discharges with a principal diagnosis of bacterial pneumonia, dehydration, or urinary tract infection, or a secondary diagnosis of dehydration accompanying a principal diagnosis of hyperosmolarity and/or hypernatremia, gastroenteritis, or acute kidney injury, from a short-term acute-care hospital (including critical access hospitals).	NA	2017

Short term acute care readmissions (all-cause 30 day)	readm_Rate_1000	Rate of short-term acute-care hospital readmissions within 30 days of discharge from a short-term acute-care hospital (including critical access hospitals) per 1,000 discharges among eligible beneficiaries assigned to the ACO in the performance year. When identifying an initial admission, all overlapping and contiguous hospital bills submitted to Medicare are considered as single hospital stays if there are no breaks greater than one day. For example, in the event there are contiguous stays the earliest admission date and latest discharge date will be used for the below calculation. Adjusted for transfers by combining two admissions into one when the second admission date was no more than one day after the discharge date of the first admission. This measure differs from the readmission measure used for the quality performance standard. It is not risk-adjusted. For annual quality measurement, CMS uses the risk-standardized Yale hospital wide readmission (HWR) measure. Denominator: Number of qualifying discharges from a short-term acute care hospital (including critical access hospitals) among an ACO's assigned beneficiaries. To be considered a qualifying discharge, the hospitalization must occur in the first 11 months the performance year and the beneficiary must be alive at the time of discharge. Numerator: The number of hospital readmissions to a short-term acute-care hospital within 30 days of a qualifying discharge.	NA	2014 - 2017
Skilled nursing facility length of stay	SNF_LOS	Average number of Medicare covered utilization days for entire SNF stay for stays with a discharge date in the performance year. Each SNF stay is defined as a set of claims with the same HICN, same admission date, and same provider number. We adjust for transfers by combining two stays into one when the second admission was within one day of the discharge date of the first admission.	NA	2018
Skilled nursing facility payment per stay	SNF_PayperStay	Average Medicare expenditure per SNF stay. Includes entire facility payment for stays with discharge date in the performance year. Each SNF stay is defined as a set of claims with the same HICN, same admission date, and same provider number. We adjust for transfers by combining two stays into one when the second admission was within one day of the discharge date of the first admission.	NA	2018
Number of CAHs	N_CAH	Total number of Critical Access Hospitals participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the Medicare Provider Enrollment, Chain, and Ownership System (PECOS).	NA	2013 - present
Number of FQHCs	N_FQHC	Total number of FQHCs participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of RHCs	N_RHC	Total number of RHCs participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of Elected Teaching Amendment (ETA) hospitals	N_ETA	Total number of ETA hospitals participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present

Number of short-term acute care hospitals	N_Hosp	Total number of short-term acute care hospitals (excluding CAHs and ETA hospitals) participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of other facility types	N_Fac_Other	Total number of other facilities participating in the ACO in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of participating PCPs	N_PCP	Total number of PCPs that reassigned billing rights to an ACO participant in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of participating specialists	N_Spec	Total number of physician specialists that reassigned billing rights to an ACO participant in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of participating nurse practitioners	N_NP	Total number of nurse practitioners that reassigned billing rights to an ACO participant in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of participating physician assistants	N_PA	Total number of physician assistants that reassigned billing rights to an ACO participant in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
Number of participating clinical nurse specialists	N_CNS	Total number of clinical nurse specialists that reassigned billing rights to an ACO participant in the performance year. Based on the ACO's certified participant list used in financial reconciliation and information in the PECOS.	NA	2013 - present
CAHPS: Getting Timely Care, Appointments, and Information	ACO1	Consumer Assessment of Healthcare Providers and Systems (CAHPS): Getting Timely Care, Appointments, andInformation	NA	2016 – present
CAHPS: How Well Your Providers Communicate	ACO2	CAHPS: How Well Your Providers Communicate	NA	2016 - present
CAHPS: Patients' Rating of Provider	ACO3	CAHPS: Patients' Rating of Provider	NA	2016 - present
CAHPS: Access to Specialists	ACO4	CAHPS: Access to Specialists	NA	2016 - present
CAHPS: Health Promotion and Education	ACO5	CAHPS: Health Promotion and Education	NA	2016 - present
CAHPS: Shared Decision Making	ACO6	CAHPS: Shared Decision Making	NA	2016 - present
CAHPS: Health Status/Functional Status	ACO7	CAHPS: Health Status/Functional Status	NA	2016 - present
CAHPS: Stewardship of Patient Resources	ACO34	CAHPS: Stewardship of Patient Resources	NA	2016 - present
CAHPS: Courteous and Helpful Office Staff	ACO45	CAHPS: Courteous and Helpful Office Staff	NA	2019 - present
CAHPS: Care Coordination	ACO46	CAHPS: Care Coordination	NA	2019 - present
Risk Standardized, All Condition Readmission	ACO8	Risk-adjusted percentage of ACO assigned beneficiaries who were hospitalized and readmitted to a hospital within 30 days of discharge from the index hospital admission. Note that a lower performance rate is indicative of better quality.	NA	2016 - present
Skilled Nursing Facility 30-day All-Cause Readmission measure (SNFRM)	ACO35	Risk-adjusted rate of all-cause, unplanned, hospital readmissions within 30 days for ACO assigned beneficiaries who had been admitted to a SNF after discharge from their prior proximal hospitalization. Note that a lower performance rate is indicative of better quality.	NA	2016 - 2018

All-Cause Unplanned Admissions for Patients with Diabetes	ACO36	Rate of risk-standardized acute, unplanned hospital admissions among FFS beneficiaries 65 years and older with diabetes who are assigned to the ACO. Note that a lower performance rate is indicative of better quality.	NA	2016 - 2018
All-Cause Unplanned Admissions for Patients with Heart Failure	ACO37	Rate of risk-standardized acute, unplanned hospital admissions among FFS beneficiaries 65 years and older with heart failure who are assigned to the ACO. Note that a lower performance rate is indicative of better quality.	NA	2016 - 2018
All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions	ACO38	Rate of risk-standardized acute, unplanned hospital admissions among Medicare FFS beneficiaries 65 years and older with multiple chronic conditions (MCCs) who are assigned to the ACO. Note that a lower performance rate is indicative of better quality.	NA	2016 - present
Ambulatory Sensitive Condition Admissions: Chronic Obstructive Pulmonary Disease or Asthma in Older Adults (AHRQ Prevention Quality Indicator (PQI) #5)	ACO9	All discharges with an ICD-10-CM principal diagnosis code for COPD or asthma in adults ages 40 years and older, for ACO assigned or aligned beneficiaries with COPD or asthma, with risk-adjusted comparison of observed discharges to expected discharges for each ACO. This is a ratio of observed to expected discharges. Note that a lower performance rate is indicative of better quality.	NA	2016
Ambulatory Sensitive Conditions Admissions: Heart Failure (AHRQ Prevention Quality Indicator (PQI) #8)	ACO10	All discharges with an ICD-10-CM principal diagnosis code for HF in adults ages 18 years and older, for ACO assigned or aligned beneficiaries with HF, with risk-adjusted comparison of observed discharges to expected discharges for each ACO. This is a ratio of observed to expected discharges. Note that a lower performance rate is indicative of better quality.	NA	2016
Use of Imaging Studies for Low Back Pain	ACO44	The percentage of ACO assigned beneficiaries with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, or CT scan) within 28 days of diagnosis.	NA	2017 - 2018
Ambulatory Sensitive Condition Acute Composite (AHRQ* Prevention Quality Indicator (PQI #91))	ACO43	Risk-adjusted rate of hospital discharges for acute PQI conditions with a principal diagnosis of, community-acquired bacterial pneumonia, or urinary tract infection among ACO assigned Medicare FFS beneficiaries 18 years and older. Note that a lower performance rate is indicative of better quality. In PY 2020 the measure was updated and the principal diagnosis of dehydration was removed.	NA	2017 - present
Use of Certified electronic health record (EHR) Technology	ACO11	Percentage of Merit-Based Incentive Payment System (MIPS) Eligible Clinicians participating in the ACO (regardless of track) who successfully meet the Advancing Care Information Base Score requirements.	NA	2016 - 2018
Medication Reconciliation Post-Discharge	ACO12	The percentage of discharges from any inpatient facility (e.g. hospital, skilled nursing facility, or rehabilitation facility) for patients 18 years of age and older of age seen within 30 days following discharge in the office by the physician, prescribing practitioner, registered nurse, or clinical pharmacist providing on-going care for whom the discharge medication list was reconciled with the current medication list in the outpatient medical record.	NA	2017 - 2018

Documentation of Current Medications in the Medical Record	ACO39	Percentage of visits for patients aged 18 years and older for which the eligible professional attests to documenting a list of current medications using all immediate resources available on the date of the encounter. This list must include ALL known prescriptions, over-the-counters, herbals, and vitamin/mineral/dietary (nutritional) supplements AND must contain the medications' name, dosage, frequency and route of administration.	NA	2016
Falls: Screening for Future Fall Risk	ACO13	Percentage of patients 65 years of age and older who were screened for future fall risk during the measurement period.	NA	2016 - present
Preventive Care and Screening: Influenza Immunization	ACO14	Percentage of patients aged six months and older seen for a visit between October 1 and March 31 who received an influenza immunization OR who reported previous receipt of an influenza immunization.	NA	2016 – present
Pneumococcal Vaccination Status for Older Adults	ACO15	Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine.	NA	2016 - 2018
Preventive Care and Screening: Body MassIndex (BMI) Screeningand Follow-Up Plan	ACO16	Percentage of patients aged 18 years and older with a Body Mass Index (BMI) documented during the current encounter or during the previous 12 months AND with a BMI outside of normal parameters, a follow-up plan is documented during the encounter or during the previous 12 months of the current encounter.	NA	2016 - 2018
Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	ACO17	Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.	NA	2016 - present
Pneumococcal Vaccination Status for Older Adults	ACO15	Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine.	NA	2016 - 2018

Preventive Care and Screening: Screening for Depression and Follow-up Plan	ACO18	Percentage of patients aged 12 years and older screened for depression on the date of the encounter using an age appropriate standardized depression screening tool AND if positive, a follow-up plan is documented on the date of the positive screen.	NA	2016 - present
Colorectal Cancer Screening	ACO19	Percentage of adults 50 - 75 years of age whohad appropriate screening for colorectal cancer.	NA	2016 - present
Breast Cancer Screening	ACO20	Percentage of women 50 - 74 years of age who had a mammogram to screen for breast cancer.	NA	2016 - present
Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	ACO21	Percentage of patients aged 18 years and olderseen during the reporting period who were screened for high blood pressure AND a recommended follow-up plan is documented based on the current blood pressure (BP) reading as indicated.	NA	2016
Statin Therapy for the Prevention and Treatment of Cardiovascular Disease	ACO42	Percentage of the following patients—all considered at high risk of cardiovascular events—who were prescribed or were on statintherapy during the measurement period: · Adults aged ≥ 21 years who were previously diagnosed with or currently have anactive diagnosis of clinical atherosclerotic cardiovascular disease (ASCVD); OR · Adults aged ≥ 21 years who were previously diagnosed with or currently have anactive diagnosis of clinical atherosclerotic cardiovascular disease (ASCVD); OR · Adults aged 40-75 years with a diagnosis of diabetes with a fasting or direct LDL-C level of 70-189 mg/dL	NA	2016 - present
Depression Remission at Twelve Months	ACO40	The percentage of adolescent patients 12 to 17 years of age and adult patients 18 years of age or older with major depression or dysthymia who reached remission 12 months (+/- 60 days) after an index event.	NA	2016 - present
Diabetes Composite (All or Nothing Scoring)	DM_Comp	Percentage of patients who meet the numerator criteria of ACO-41 and do not meet the numerator criteria of ACO-27.	NA	2016 - 2018
Diabetes: Hemoglobin A1c (HbA1c) Poor Control (>9%)	ACO27	Percentage of patients 18 - 75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period. Note that a lower performance rate is indicative of better quality.	NA	2016 - present
Diabetes: Eye Exam	ACO41	Percentage of patients 18 - 75 years of age with diabetes who had a retinal or dilated eye exam by an eye care professional during the measurement period or a negative retinal (no evidence of retinopathy) in the 12 months priorto the measurement period.	NA	2016 - 2018
Controlling High Blood Pressure	ACO28	Percentage of patients 18 - 85 years of age whohad a diagnosis of hypertension and whose blood pressure was adequately controlled (< 140/90 mmHg) during the measurement period.	NA	2016 - present

VITA

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